

No. 23-1078 (L) (2:21-cv-00316)

**IN THE
UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT**

B.P.J., by her next friend and mother; HEATHER JACKSON,

Plaintiff - Appellant,

versus

WEST VIRGINIA STATE BOARD OF EDUCATION; HARRISON
COUNTY BOARD OF EDUCATION; WEST VIRGINIA SECONDARY
SCHOOL ACTIVITIES COMMISSION; W. CLAYTON BURCH, in his
official capacity as State Superintendent; DORA STUTLER, in her official
capacity as Harrison County Superintendent,

Defendants - Appellees.

and

THE STATE OF WEST VIRGINIA; LAINEY ARMISTEAD,

Intervenors - Appellees

On Appeal from the United States District Court for the Southern District of
West Virginia (Charleston Division)
The Honorable Joseph R. Goodwin, District Judge
District Court Case No. 2:21-cv-00316

JOINT APPENDIX – VOLUME 6 OF 9 (JA2567-JA3111)

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| Excerpt of 2019 NCAA Division II Outdoor Track & Field Championship Results [Armistead App. 0080-0081] in Appendix to Defendant-Intervenor's Motion for Summary Judgment | 3/22/2023 | 529 | JA4386 |
| Excerpt of 2020 Big Sky Indoor Track & Field Championship Results [Armistead App. 0082-0086] in Appendix to Defendant-Intervenor's Motion for Summary Judgment | 3/22/2023 | 529 | JA4388 |
| 2020 Women's Ivy League Swimming & Diving Championship Results [Armistead App. 0087-0108] in Appendix to Defendant-Intervenor's Motion for Summary Judgment | 3/22/2023 | 529 | JA4393 |

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| Redacted Deposition of Dr. Kacie Kidd, M.D [Armistead App. 1142-1278] Appendix to Defendant-Intervenor's Motion for Summary Judgment | 3/22/2023 | 529 | JA44423 |
| Plaintiff's Redacted Responses and Objections to Defendant-Intervenor Lainey Armistead's First Set of Requests for Admission [Armistead App. 1437-1486] in Appendix to Defendant-Intervenor's Motion for Summary Judgment | 3/22/2023 | 529 | JA4560 |
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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

)
B.P.J. by her next friend and
mother, HEATHER JACKSON,)
)
Plaintiff,)

No. 2:21-cv-00316

vs.)

WEST VIRGINIA STATE BOARD OF)
EDUCATION, HARRISON COUNTY)
BOARD OF EDUCATION, WEST)
VIRGINIA SECONDARY SCHOOL)
ACTIVITIES COMMISSION, W.)
CLAYTON BURCH in his official)
capacity as State)
Superintendent, DORA STUTLER,)
in her official capacity as)
Harrison County)
Superintendent, and THE STATE)
OF WEST VIRGINIA,)

Defendants.)

And)

LAINY ARMISTEAD,)
)
Defendant-Intervenor.)

REMOTE VIDEOTAPED DEPOSITION OF
GREGORY BROWN, Ph.D.
Friday, March 25, 2022
Volume I

Reported by:
ALEXIS KAGAY
CSR No. 13795
Job No. 5122856
PAGES 1 - 282

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA CHARLESTON
DIVISION

B.P.J. by her next friend and)
mother, HEATHER JACKSON,)

)
)
Plaintiff,)

)
vs.) No. 2:21-cv-00316
)

WEST VIRGINIA STATE BOARD OF)
EDUCATION, HARRISON COUNTY)
BOARD OF EDUCATION, WEST)
VIRGINIA SECONDARY SCHOOL)
ACTIVITIES COMMISSION, W.)
CLAYTON BURCH in his official)
capacity as State)
Superintendent, DORA STUTLER,)
in her official capacity as)
Harrison County)
Superintendent, and THE STATE)
OF WEST VIRGINIA,)

)
Defendants.)

)
And)

)
LAINEY ARMISTEAD,)
)
Defendant-Intervenor.)

Videotaped deposition of GREGORY BROWN, Ph.D.,
Volume I, taken on behalf of Plaintiff, with all
participants appearing remotely, beginning at 7:02 a.m.
and ending at 4:03 p.m. on Friday, March 25, 2022,
before ALEXIS KAGAY, Certified Shorthand Reporter
No. 13795.

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1 Also Present:

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3

4 Videographer:

5 KIMBERLEE DECKER

6

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1 Friday, March 25, 2022

2 7:02 a.m.

3

4 THE VIDEOGRAPHER: Good morning. We are on
5 the record at 9:02 a.m. on March 25th of 2022. All 07:02:02
6 participants are attending remotely.

7 Audio and video recording will continue to
8 take place unless all parties agree to go off the
9 record.

10 This is media unit 1 of the recorded 07:02:20
11 deposition of Gregory A. Brown, Ph.D., taken by counsel
12 for the plaintiff, in the matter of B.P.J., by her next
13 friend and mother, Heather Jackson, versus
14 West Virginia State Board of Education, et al., filed
15 in the United States District Court, for the Southern 07:02:36
16 District of West Virginia, Charleston Division, Case
17 Number 2:21-cv-00316.

18 My name is Kimberlee Decker from Veritext
19 Legal Solution (sic), and I am the videographer. The
20 court reporter is Alexis Kagay. I am not related to 07:02:57
21 any party in this action, nor am I financially
22 interested in the outcome.

23 Counsel and all present will now state their
24 appearances and affiliations for the record. If there
25 are any objections to proceeding, please state them at 07:03:10

Page 13

1 the time of your appearance, beginning with the
2 noticing attorney.

3 MR. BLOCK: Good morning. My name is
4 Josh Block from the ACLU. My pronouns are he/him. And
5 I am here on behalf of the plaintiff, B.P.J. 07:03:26

6 And I'll let my co-counsel introduce
7 themselves.

8 MS. HARTNETT: Good morning. This is
9 Kathleen Hartnett from Cooley for plaintiff.

10 MR. BARR: Good morning. Andrew Barr from 07:03:38
11 Cooley, also for plaintiff.

12 MS. KANG: Good morning. Katelyn Kang from
13 Cooley, also for plaintiff.

14 MS. REINHARDT: Good morning. Elizabeth
15 Reinhardt with Cooley for plaintiff. 07:03:52

16 MS. HELSTROM: Hello. This is Zoe Helstrom
17 with Cooley, also for plaintiff.

18 COUNSEL SWAMINATHAN: Good morning. This is
19 Sruti Swaminathan from Lambda Legal on behalf of
20 plaintiff. 07:04:04

21 MR. CHARLES: Good morning. Carl Charles,
22 he/him, with Lambda Legal for plaintiff.

23 MS. SMITH-CARRINGTON: Good morning. Avatara
24 Smith-Carrington from Lambda Legal on behalf of
25 plaintiff. 07:04:18

1 MR. FRAMPTON: I -- I think that's everyone
2 for plaintiff, but if not, correct me.

3 This is Hal Frampton with Alliance Defending
4 Freedom for the intervenor.

5 MS. CSUTOROS: This is Rachel Csutoros from 07:04:29
6 Alliance Defending Freedom for the intervenor.

7 MR. TRYON: This is David Tryon with
8 West Virginia state attorney general's office on behalf
9 of the State of West Virginia.

10 MR. CROPP: This is Jeffrey Cropp on behalf of 07:04:45
11 defendants Harrison County Board of Education and
12 Superintendent Dora Stutler.

13 MS. GREEN: This is Roberta Green, Shuman
14 McCuskey Slicer, here on behalf of WVSSAC.

15 MR. TAYLOR: This is Michael Taylor, law firm 07:05:04
16 of Bailey & Wyant, on behalf of the West Virginia State
17 Board of Education and W. Clayton Burch,
18 superintendent.

19 THE VIDEOGRAPHER: Thank you.

20 Will the court reporter please swear in the
21 witness.

22
23 GREGORY BROWN, Ph.D.,
24 having been administered an oath, was examined and
25 testified as follows:

1

2

EXAMINATION

3

BY MR. BLOCK:

4

Q Good morning, Dr. Brown. How are you today?

5

A I'm doing fine. Thank you.

07:05:38

6

How are you today, Mr. Block?

7

Q I'm good. I'm good.

8

This is our second time seeing each other

9

virtually for a deposition, isn't it?

10

A It is. It is.

07:05:48

11

Q Well, could you state your name for the

12

record, please.

13

A My name is Gregory Allen Brown.

14

Q And have you had your deposition taken before?

15

A Yes, I have.

07:06:04

16

MR. FRAMPTON: Josh, real -- real quick, just

17

before we get too far, I just want to memorialize for

18

the record, are we proceeding under the same agreement

19

that all objections except to form and scope are

20

reserved?

07:06:16

21

MR. BLOCK: Yes. And -- and I'd like to

22

actually also propose that, of course, any party is

23

free to object on their own, but it is also not

24

necessary for multiple parties to object to the same

25

question that -- an objection from one defendant or

07:06:33

1 intervenor will preserve the objections for everyone
2 else as well.

3 Is that also acceptable?

4 MR. FRAMPTON: That -- that's acceptable to
5 the intervenor. 07:06:51

6 MR. TRYON: This is David Tryon. That is
7 acceptable to the State.

8 MS. GREEN: This is Roberta Green. That's
9 acceptable to WVSSAC.

10 MR. CROPP: This is Jeffrey Cropp. That's 07:07:03
11 acceptable to the Harrison County Board of Education
12 and Dora Stutler.

13 MR. TAYLOR: This is Michael Taylor. That's
14 acceptable for the State Board of Education and
15 Superintendent Burch. 07:07:14

16 MR. BLOCK: Excellent.

17 BY MR. BLOCK:

18 Q So other than your deposition with me, have
19 you had any other depositions taken?

20 A No, I have not. 07:07:27

21 Q All right. Great.

22 So I'll just review with you some ground rules
23 again, which you're -- you're probably familiar with,
24 and I have three of them.

25 You know, the first is that -- actually, it's 07:07:35

1 less applicable for a video deposition, but it's
2 important that all of your responses be verbal instead
3 of head nods so that we can have a -- a transcript of
4 your responses.

5 Does that sound good to you? 07:07:53

6 A Yes. Thank you.

7 Q Sure. The second is that we need to make sure
8 not to speak over each other. So if you could wait for
9 me to complete my question before answering and I'll
10 wait for you to complete your answer before I ask 07:08:06
11 another question.

12 Does that sound fair?

13 A I'll do my best.

14 Q So will I.

15 And the third is that, you know, as always, 07:08:16
16 it's my job to ask questions that you understand. So
17 if there's anything about my question you don't
18 understand, I'm going to rely on you to explain to me
19 that you don't understand it, and I will do my best to
20 rephrase it. But if you answer the question, I'm going 07:08:32
21 to assume that meant that you understood what I was
22 saying, okay?

23 A Sounds fair.

24 Q Terrific.

25 All right. How did you prepare for the 07:08:44

1 deposition today?

2 A Reviewed what I had written for my
3 declaration, the expert report. I had a good
4 breakfast, got a good night's sleep. I have met with
5 attorneys for Alliance Defending Freedom and 07:09:03
6 David Tryon to brief me on, you know, what happens in a
7 deposition, what I should expect.

8 MR. FRAMPTON: I'm going to instruct the
9 witness, you don't -- anything that we discussed is
10 privileged. So you can certainly tell him that you met 07:09:16
11 with us, but the substance of that discussion should
12 not be told.

13 THE WITNESS: Okay.

14 BY MR. BLOCK:

15 Q Did -- in preparation for the deposition, did 07:09:25
16 you review anything that was not cited in your report?

17 A Yes. Like previous exercise physiology
18 textbooks, lots of other things that probably weren't
19 cited in there, just in the course of general
20 knowledge. 07:09:47

21 Q And -- and you -- you've reviewed those to
22 refresh your understanding of them in preparation for
23 today's deposition?

24 A Yes. And also in preparation for teaching my
25 classes and those types of things. 07:10:00

1 Q Did you conduct any additional research to
2 prepare for today's deposition?

3 A Can you explain what you mean by "research"?

4 Q Well, I guess, did you look for new articles
5 in the field or anything like that in preparation for 07:10:17
6 the deposition?

7 A Yes. In preparation for the deposition, I
8 have looked to see if there have been any relevant new
9 publications, and I haven't come up with any that I
10 haven't cited in the deposition. 07:10:33

11 Q Great. Have you been retained as an expert
12 witness before?

13 A Yes.

14 Q I want to get a complete list of all of the
15 times you've been retained as an expert witness. 07:10:46

16 So could you tell me, to the best of your
17 recollection, the first time you were retained as an
18 expert witness?

19 A That would be for the case of Soule versus the
20 Connecticut Interscholastic Athletic Association (sic). 07:11:05

21 Q And who retained you for that case?

22 A Alliance Defending Freedom.

23 Q Great. What is the next case in which you
24 were retained as an expert witness?

25 A The next case is Hecox versus Little in the 07:11:17

1 state of Idaho.

2 Q And who retained you as an expert witness in
3 that case?

4 A That was the Idaho attorney general's office.

5 Q And what's the next case where you were 07:11:31
6 retained as an expert witness?

7 A The next case is in Florida, and I apologize,
8 I cannot remember the names and initials on that versus
9 State of Florida.

10 Q And what's the general subject of that 07:11:42
11 litigation?

12 A Similar to this one, State of Idaho, as
13 regarding a state law on women's participation in
14 women's sports.

15 Q A Florida state law? 07:11:57

16 A Yes.

17 Q And who retained you in that case?

18 A Andy Bardos, if I remember correctly on his
19 last name. I apologize if I don't get the
20 pronunciation correctly. And that is -- they're 07:12:16
21 working for the State of Florida.

22 Q Is there any other case in which you've been
23 retained as an expert witness?

24 A I have agreed to serve as an expert witness in
25 the state of Arkansas if there is a case that were to 07:12:35

1 come forth there.

2 Q Related to sports?

3 A Yes. Yeah, same topic.

4 Q But not as an expert in any other litigation
5 in Arkansas about other types of legislation; right? 07:12:47

6 A That's correct.

7 Q Is there any other case in which you've been
8 retrained as an expert witness?

9 A Just want to verify that I said them. So
10 Soule versus CIAC, Idaho, Florida, Arkansas and then 07:13:05
11 the current case.

12 Q Okay. How about in Tennessee, are you an
13 expert witness in Tennessee?

14 A No.

15 Q Have you been retained as a nontestifying 07:13:27
16 expert witness in connection with any litigation?

17 A No.

18 Q Okay. All right. So I'm going to just review
19 with you some previous expert reports you filed.

20 Actually, before I do that, have you filed an 07:13:43
21 expert report yet in the Florida litigation?

22 A No.

23 Q Okay. All right. So -- so this is going to
24 be the moment of truth. I'm going to attempt to move a
25 document into Exhibit Share, and we'll see -- we'll see 07:13:57

1 how that -- that works. All right.

2 All right. Let's see.

3 Actually, first, I'm going to try to get
4 your -- your current expert report into here. Just
5 give me half a second. 07:14:26

6 A Take your time.

7 Q Yeah, no, I might need to take my time.

8 All right. No, here's the one in your case.

9 All right. Moving it into our "Marked
10 Exhibits" folder. And in a moment, like when you 07:14:40
11 refresh, you should hopefully see a document.

12 A So is the document 2022.02.23 Brown Expert
13 Report PDF?

14 Q Yes. And -- and just --

15 MR. BLOCK: Lindsay, does that automatically 07:15:09
16 get marked as a -- a sequential exhibit number?

17 MS. DUPHILY: It -- I -- I'll fix it. And
18 I'll show you -- you need to mark it as a -- introduce
19 it as an exhibit. You just moved it.

20 MR. BLOCK: I just moved it. Okay. So sorry. 07:15:22
21 How -- how do we --

22 MS. DUPHILY: I can -- I can correct it. Go
23 ahead and continue, and I will correct it.

24 MR. BLOCK: Okay. And -- thanks.

25 Will you be able to do that for the subsequent 07:15:28

1 ones, too?

2 And sorry for my incompetence.

3 MS. DUPHILY: Why don't I just -- I will input
4 the next ones and then show you on the break how to do
5 it. 07:15:39

6 (Exhibit 64 was marked for identification
7 by the court reporter and is attached hereto.)

8 MR. BLOCK: Terrific. Thank you so much.

9 BY MR. BLOCK:

10 Q All right. Do you recognize this document? 07:15:41

11 A Yes, I do.

12 Q What is it?

13 A It is my expert declaration for the case of
14 B.P.J. versus West Virginia.

15 Q And when is it -- when is it dated? 07:16:01

16 A It states: "Executed on February 23, 2022."

17 Q And that's your signature next to it?

18 A Yes, that is.

19 Q Okay. So now I'm just going to take you
20 through some previous reports that you filed. 09:16:18

21 So if you hit refresh, you should see another
22 document titled "Brown PI decl."

23 A Yes.

24 Q Great. Do you recognize that document?

25 A Yes, I do. 09:17:01

Page 24

1 Q What is it?

2 A That is my expert declaration in the case of
3 Soule versus Connecticut Association of Schools.

4 Q Great. And when is that dated?

5 A Dated February 12th, 2020. 09:17:22

6 Q Terrific. Let me take a look at that.

7 All right. Let me show you another one, I'm
8 sorry.

9 MS. DUPHILY: Maybe -- maybe we should
10 quickly, it's up to you -- 09:17:40

11 MR. BLOCK: Yeah, let's do a little bit --
12 let's go off the record, and you can give me a
13 tutorial, and then we can be -- save time.

14 THE VIDEOGRAPHER: We are off the record at
15 9:18 a.m. 09:17:49

16 (Recess.)

17 THE VIDEOGRAPHER: We are on the record at
18 9:21 a.m.

19 BY MR. BLOCK:

20 Q All right. Dr. Brown, during our break, we 09:21:05
21 sort of recorrected and marked the exhibits we
22 previously looked at.

23 Could you, just for the record, look at the
24 document marked Exhibit 64, please.

25 A All right. Exhibit 064. 09:21:26

1 Q And what is that exhibit?

2 A That is my expert declaration for B.P.J.

3 versus West Virginia.

4 (Exhibit 65 was marked for identification

5 by the court reporter and is attached hereto.) 09:21:35

6 BY MR. BLOCK:

7 Q Terrific. And -- now, can you look at the

8 document marked Exhibit 65, please.

9 A All right. 065.

10 Q And what is that -- 09:21:52

11 A Yes --

12 Q What -- what -- what is that document?

13 A That is my declaration in the case of

14 Soule versus Connecticut Association of Schools.

15 MR. BLOCK: Great. All right. And now I'm 09:22:10

16 going to give you another document to look at in a

17 minute. In your folder should be appearing a document

18 marked Exhibit 66.

19 (Exhibit 66 was marked for identification

20 by the court reporter and is attached hereto.) 09:22:16

21 BY MR. BLOCK:

22 Q Could you let me know when you see that

23 document?

24 A Exhibit 066 - WV AG?

25 Q Yes. 09:22:29

1 A And on the first page of that, it's got, in
2 large bold capital letters, "Exhibit B"?

3 Q Uh-huh.

4 A Okay.

5 Q Could you go to the second page? 09:22:46

6 A Yes.

7 Q All right. And could -- do you recognize this
8 document?

9 A Yes, I do.

10 Q And what is it? 09:22:50

11 A That is my expert declaration for the case of
12 Hecox versus Little.

13 Q Terrific. And if you scroll down to -- to
14 near the end, which I -- if we can find the date on
15 which that one was executed. It should be on page 69 09:23:05
16 of the PDF.

17 Are you -- do you see it?

18 A I'm still scrolling.

19 Q All right. You can also type in "69" in
20 the -- the -- the top box, if that make it easier too. 09:23:33

21 A Sorry. Sorry, I tried to type in "69," and I
22 accidentally Google searched for that.

23 Q Oh, well. Have you gotten to it yet?

24 A Still scrolling.

25 Q All right. 09:24:19

1 MS. DUPHILY: If you download these exhibits,
2 you can also access them easier with your software.

3 MR. FRAMPTON: I think he's almost there.

4 THE WITNESS: All right. I see my signature
5 page. Well, yeah, executed 3rd June 2020. 09:24:34

6 BY MR. BLOCK:

7 Q Terrific. And then for this litigation of
8 B.P.J., at the PI stage, you also submitted a copy of
9 this Hecox declaration; is that right?

10 A Yes. 09:24:53

11 MR. BLOCK: Okay. And then I want to show you
12 another document in a second.

13 So this document is going to be marked, as
14 soon as I'm able to mark it, as Exhibit 67. Let me
15 know when it's visible for you. 09:25:36

16 (Exhibit 67 was marked for identification
17 by the court reporter and is attached hereto.)

18 THE WITNESS: All right. Exhibit 067 -
19 Gregory Brown Male Athletic --

20 BY MR. BLOCK: 09:25:49

21 Q Yes.

22 A Yes.

23 Q What is this document?

24 A That is a "White Paper Concerning Male
25 Physiological and Performance Advantages in Athletic 09:25:58

1 Competition and The Effect of Testosterone Suppression
2 on Male Athletic Advantage."

3 Q And it's dated December 14th, 2021; correct?

4 A That is correct.

5 Q Now, this document was not prepared as an 09:26:11
6 expert report in -- in any litigation, was it?

7 MR. FRAMPTON: Object to the form.

8 BY MR. BLOCK:

9 Q Why did you prepare this document?

10 A I was asked by Alliance Defending Freedom to 09:26:25
11 prepare a white paper.

12 Q Okay. And what is a -- a white paper as
13 opposed to an expert report?

14 MR. FRAMPTON: Same objection.

15 Go ahead. 09:26:36

16 THE WITNESS: White paper is often used by an
17 organization, a company, something like that, for
18 gaining insight or information on a topic.

19 BY MR. BLOCK:

20 Q Okay. So did you -- what did you understand 09:26:48
21 to be the -- the purpose of this white paper?

22 A My understanding was that this was for
23 Alliance Defending Freedom and affiliated and interest
24 organizations to be able to review the research that I
25 summarize in that paper. 09:27:10

1 Q Okay. And did you -- did you have an
2 understanding that this white paper would be used for
3 any lobbying purposes?

4 MR. FRAMPTON: Object to the form.

5 BY MR. BLOCK: 09:27:25

6 Q You can answer, if you understand.

7 A My understanding was that Alliance Defending
8 Freedom could do it with what they wanted and people
9 could ask them for it for purposes that people want to
10 use it for. 09:27:38

11 Q But did you -- so did you know one way or
12 another whether the -- the document would be used for
13 purposes of lobbying?

14 A I assumed that it would be introduced to
15 people who are interested in what the science says on 09:27:57
16 the matter of transgender athletes competing in women's
17 sports.

18 Q And those would include legislators?

19 A Yes.

20 Q Okay. And, in fact, you have testified in 09:28:11
21 support of legislation to restrict the ability of
22 transgender girls and women to participate in women's
23 sports; is that right?

24 MR. TRYON: Objection --

25 MR. FRAMPTON: Object to the form. 09:28:26

1 MR. TRYON: -- terminology.

2 MR. FRAMPTON: Josh, real quick, could we do
3 our usual standing objection on terminology so that we
4 don't have to jump in on that every time?

5 MR. BLOCK: You know -- yes. Yes, you can. 09:28:37

6 I -- I will have some questions on that, and you can --
7 you -- you can -- if we could -- I'll give you that

8 standing objection, but the witness has also used some

9 of these terms himself in written reports, so I'm -- I

10 want to have a little colloquy with him about that. 09:28:57

11 BY MR. BLOCK:

12 Q But -- but in the meantime, you -- you have in

13 fact testified in support of legislation similar to

14 the -- the legislation at issue in this case; is that

15 right? 09:29:13

16 MR. FRAMPTON: Object to the form.

17 Go ahead.

18 THE WITNESS: Yes, I have testified in front

19 of legislative bodies regarding legislation clarifying

20 the participation of biological females in women's 09:29:25

21 sports.

22 BY MR. BLOCK:

23 Q The participation of biological females, or

24 did you mean -- did you mean to say transgender females

25 or, to use your language, biological males? I just 09:29:36

1 want to know the -- want to make sure you spoke
2 correctly.

3 A The legislation was to limit the participation
4 in girls and women's sports to biological females.

5 Q Great. And so where -- which states did you 09:29:50
6 testify in -- in support of legislation?

7 A I may not be able to remember all of them. I
8 will give you my best recollection.

9 Ohio, Pennsylvania, Texas, South Dakota,
10 Maine, North Carolina are ones that I think I testified 09:30:14
11 either in person or through Zoom.

12 Q And who asked you to testify in each of those
13 states?

14 A That would vary from one state to the next.

15 Q Okay. So let -- let's take them one at a 09:30:36
16 time.

17 In Ohio, who asked you to testify?

18 A Center for Christian Virtue.

19 Q And in Texas, who asked you to testify?

20 A Texas Values, if I remember correctly, is 09:30:50
21 their name.

22 Q And in North Carolina, who asked you to
23 testify?

24 A I can't remember their name exactly, but it
25 was something along North Carolina Family Values, 09:31:04

1 something like that.

2 Q In Pennsylvania, who asked you to testify?

3 A Pennsylvania Family Alliance, if I remember
4 correctly.

5 Q And in Maine, who asked you to testify? 09:31:17

6 A That, I think, was Save Women's Sports.

7 Q And do you know whether the legislatures in
8 any of those states received copies of your white
9 paper?

10 A I do not know if they received copies of my 09:31:32
11 white paper.

12 Q When you testified in those states, did you
13 refer to any of the analysis or research you conducted
14 in the white paper?

15 A I -- many of those were testified last year 09:31:47
16 before I had completed the white paper.

17 Q So what about the ones that were after you had
18 completed the white paper?

19 A After completing the white paper, I know I had
20 referred to my previous expert declaration in 09:32:04
21 Connecticut and Idaho. I don't remember if I referred
22 specifically to the white paper.

23 Q So in Pennsylvania, you don't know if the
24 Pennsylvania legislature had a copy of your white paper
25 or not? 09:32:21

1 A No. That was before I had written the white
2 paper.

3 Q So when did you -- during what period of time
4 did you write the white paper?

5 A Well, I started working on it essentially as 09:32:30
6 soon as I had finished the declaration for Idaho, just
7 as -- you know, trying to update as new research or new
8 information became available. And so it was over the
9 course of a year and a half, year and three-quarters
10 that I was working on the -- the white paper. 09:32:50

11 Q And had ADF asked you to -- to create the
12 right -- excuse me -- the white paper a year and a half
13 before the publication date?

14 MR. FRAMPTON: Object to the form.

15 THE WITNESS: No. I was just updating the 09:33:05
16 information so that I would be current on the topic.

17 BY MR. BLOCK:

18 Q And so when were you asked to -- to write down
19 that information in the form of a white paper?

20 A Sometime this last fall. I can't remember. 09:33:19
21 September, October, somewhere in those lines, but I
22 cannot remember exactly.

23 Q Okay. Were you paid for -- to write the white
24 paper?

25 A No, I was not. 09:33:40

1 Q So you have disclosed in your report that your
2 hourly rate for preparing your expert report; is that
3 right?

4 A That is correct.

5 Q But is it fair to say that a substantial 09:33:56
6 portion of the expert report was based on the white
7 paper?

8 MR. FRAMPTON: Object to the form.

9 THE WITNESS: That would be fair to say that.

10 BY MR. BLOCK: 09:34:05

11 Q Okay. So to the extent that any of the work
12 in the expert report was already conducted for the
13 white paper, then that was essentially done for free;
14 is that fair?

15 MR. FRAMPTON: Same objection. 09:34:19

16 Go ahead.

17 THE WITNESS: Yes, it would be fair to say
18 that the white paper was not paid for, for my work on
19 that, and so overlap between the white paper and the
20 expert report was primarily volunteer work. 09:34:30

21 BY MR. BLOCK:

22 Q And when you first became interested in the
23 topic of the participation of transgender people in
24 sports, you were the person who reached out to ADF; is
25 that right? 09:34:46

1 A That is correct.

2 Q And why did you do that?

3 A I had seen a news report about the Soule
4 versus Connecticut case and -- well, a -- a report. I
5 guess I shouldn't say "news" because I can't remember 09:35:00
6 where I saw it. And so I reached out to Alliance
7 Defending Freedom to see if I could be of help.

8 Q So you -- you personally feel strongly about
9 this issue; is that fair?

10 MR. FRAMPTON: Object to the form. 09:35:16

11 THE WITNESS: I don't know that I would
12 characterize my interest as a feeling so much as an
13 intellectual and professional interest.

14 BY MR. BLOCK:

15 Q Is there any other circumstance in which 09:35:25
16 you've reached out to an organization to volunteer
17 yourself as an expert source?

18 A Yes.

19 Q What -- can you tell me what those situations
20 are? 09:35:47

21 A I have reached out to legislators in the state
22 of Nebraska to state that I am an exercise physiologist
23 and would be willing to help if they have questions on
24 litigation in this -- or legislation in this area, not
25 just trans women's -- transgender individuals in 09:36:07

1 sports, but relative to my professional expertise in
2 exercise physiology.

3 Q Okay. Any other instance?

4 A I am trying to remember.

5 I -- I can't remember others. They may have 09:36:30
6 happened, where I reached out and did not get a
7 response.

8 Q But sitting here today, you can't remember
9 what those other instances were?

10 A That is correct. 09:36:41

11 Q Okay. And you -- you're not sure that there
12 were other instances; is that right?

13 A That is correct.

14 Q All right. So that -- that's all my questions
15 on that topic. 09:36:56

16 I do have some questions just about
17 terminology here.

18 You know what the term "cisgender" means;
19 right?

20 MR. FRAMPTON: Object to the form. 09:37:05

21 THE WITNESS: Cisgender means a person whose
22 gender identity aligns with their biology.

23 BY MR. BLOCK:

24 Q And you don't have any objection to using the
25 word "cisgender," do you? 09:37:17

1 A Yes, I do.

2 Q You've used the word "cisgender" in other
3 publications, haven't you?

4 A I have.

5 Q Okay. Why did you use the word "cisgender" in 09:37:28
6 those publications?

7 A Because it is a frequently used term in the --
8 in this field, and so it is probably the appropriate
9 term to use.

10 Q So why do you have an objection to using that 09:37:42
11 term in the deposition if -- if that's the appropriate
12 term to use?

13 MR. FRAMPTON: Object to the form.

14 THE WITNESS: I know of individuals who do not
15 like the term "cisgender" because when it is applied in 09:38:00
16 the term such as "cis male" or "cis female," they
17 consider it to be infringing upon their identity as
18 male or female and the "cis" is unnecessary.

19 BY MR. BLOCK:

20 Q Do you consider the word -- the term 09:38:20
21 "cisgender male" to be infringing upon your identity as
22 a male?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: No, I do not.

25 ///

1 BY MR. BLOCK:

2 Q Okay. Who are the individuals that -- that
3 you know that view the term "cisgender" as infringing
4 on their own identity?

5 A I could not tell you every person I know that 09:38:43
6 states that. I have colleagues and coworkers that have
7 stated that to me in private conversations, family
8 members that have stated that to me in private
9 conversations. Even students have stated to me that
10 they do not like being referred to as cisgender. 09:39:02

11 Q And have any of those people, to the best of
12 your knowledge, been directly referred to as being
13 cisgender?

14 A To my knowledge, yes, they have.

15 Q Okay. So -- but you -- you personally don't 09:39:19
16 view the term "cisgender male" as infringing on your
17 own identity; correct?

18 A That is correct.

19 Q Okay. So if I use the term "cisgender" during
20 this deposition, you'll understand what I'm talking 09:39:34
21 about; correct?

22 A Yes, I understand it is the term commonly used
23 in this type of matter, legally and professionally.

24 Q Okay. And if -- if I ask you to clarify
25 whether a particular statement that you made is 09:39:50

1 referring to cisgender males, you -- you would be able
2 to clarify that for me; correct?

3 MR. FRAMPTON: Object to the form.

4 THE WITNESS: Yes, it is my understanding that
5 a cisgender male is an individual who is biologically 09:40:04
6 male and their gender identity is male.

7 BY MR. BLOCK:

8 Q And you know what the term "transgender"
9 means; right?

10 MR. FRAMPTON: Same objection. 09:40:15

11 THE WITNESS: Yes.

12 BY MR. BLOCK:

13 Q What does it mean?

14 A Transgender is for someone whose gender
15 identity does not align with their biological sex. 09:40:25

16 Q And you don't have any objection to using the
17 word "transgender" in this deposition, do you?

18 A No, I do not.

19 Q Okay. And you've used the word "transgender"
20 in your own writings, haven't you? 09:40:38

21 A That is correct.

22 Q Okay. Do you know what the term "transgender
23 woman" means?

24 MR. FRAMPTON: Same objection.

25 THE WITNESS: I get confused with transgender 09:40:45

1 woman sometimes because I'm not sure if that means a
2 trans woman or someone who is transgender that
3 identifies as a woman.

4 Does that make sense?

5 BY MR. BLOCK: 09:41:00

6 Q Yeah. Well, so do you know what the term
7 "trans woman" means?

8 A Yes, I do.

9 Q Okay. What -- what does the word "trans
10 woman" mean to you? 09:41:09

11 A A trans woman is an individual who is
12 biologically male but whose gender identity is that of
13 a woman.

14 Q And you've used the term "trans woman" in your
15 writings, haven't you? 09:41:19

16 A That is correct.

17 Q Okay. So if I ask you to clarify whether the
18 people you refer to in a question are trans women,
19 you'll be able to clarify that for me?

20 MR. FRAMPTON: Object to the form. 09:41:34

21 THE WITNESS: Yes, I will do my best.

22 BY MR. BLOCK:

23 Q Okay. And do you know what the term
24 "transgender girl" means?

25 A Same as with transgender woman, it is 09:41:42

1 sometimes confusing to me if they mean if this is a boy
2 that identifies as girl or a girl that identifies as
3 boy.

4 Q How about if I use the term "trans girl,"
5 will -- do you understand what that would mean? 09:42:01

6 A Yes, I understand "trans girl."

7 Q Okay. And what does trans girl mean to you?

8 A A trans girl is a juvenile/youth/child whose
9 biological sex is male but who identifies as a girl.

10 Q Okay. You've been using the phrase 09:42:18
11 "biological sex"; correct?

12 A That is correct.

13 Q What is your understanding of what the term
14 "biological sex" means?

15 A So sex is a biological variable. Sex is 09:42:29
16 determined at conception with the conferral of sex
17 chromosomes.

18 Q And is it your understanding that "biological
19 sex" refers to anything other than chromosomes?

20 A Yes. 09:42:53

21 Q So what else besides chromosomes does the term
22 "biological sex" refer to?

23 A So if we are referring to a person who is a
24 biological male, they would have sex chromosomes of
25 male and their body system of organization, 09:43:08

1 anatomically and physiologically, would be around the
2 production of small gametes, which means sperm.

3 Q And how would you refer to the biological sex
4 of someone with complete androgen insensitivity
5 syndrome? 09:43:32

6 MR. FRAMPTON: Object to the form.

7 THE WITNESS: My understanding of someone with
8 complete androgen insensitivity syndrome is they are
9 biologically male, but they are not receptive to
10 androgens, but their body is still organized around the 09:43:43
11 production of sperm.

12 BY MR. BLOCK:

13 Q And how would you refer to the biological sex
14 of someone with XXY chromosomes?

15 A If I remember correctly -- 09:43:59

16 MR. TRYON: I would like to just object to the
17 scope.

18 Thank you.

19 MR. FRAMPTON: Objection; form, scope.

20 THE WITNESS: If I remember correctly, XXY is 09:44:08
21 Turner syndrome, in which a person is biologically
22 male. They have an extra X chromosome, but they are
23 still male.

24 BY MR. BLOCK:

25 Q So you define biological sex as male if there 09:44:22

1 is a Y chromosome present?

2 MR. FRAMPTON: Object to the form, scope.

3 THE WITNESS: That is the beginning of sex
4 determination, is if there is a Y or an X chromosome.

5 BY MR. BLOCK: 09:44:44

6 Q Right. So as to -- to clarify, so as long as
7 there's a Y chromosome, you, in your understanding of
8 the term "biological sex," would view that person as
9 being biologically male?

10 MR. FRAMPTON: Same objections, form and 09:44:56
11 scope.

12 Go ahead.

13 THE WITNESS: That is my understanding, yes.

14 BY MR. BLOCK:

15 Q Okay. And when -- do you have any opinions on 09:45:02
16 whether a person with complete androgen insensitivity
17 syndrome should be allowed to play on sports teams for
18 girls and women?

19 MR. FRAMPTON: Objection; form and scope.

20 Go ahead. 09:45:28

21 THE WITNESS: So situations such as complete
22 androgen insensitivity syndrome is very debated in the
23 sports science community right now on how best to
24 handle those individuals and where they should
25 participate in sports. 09:45:41

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1 BY MR. BLOCK:

2 Q And what's your opinion?

3 MR. FRAMPTON: Same objections.

4 THE WITNESS: So I have been retained as an
5 expert witness in this matter primarily dealing with 09:45:49

6 biological male and biological female and not as an

7 expert on disorders or differences of sexual

8 development. And so I would say I probably would not

9 be the best person to offer a statement on where

10 someone with CAIS should participate. 09:46:05

11 BY MR. BLOCK:

12 Q But you just testified earlier that you view
13 someone with -- with CAIS as being a biological male,
14 isn't that so?

15 A That is correct. 09:46:18

16 Q And so if you're providing expert testimony on
17 the participation of biological males, wouldn't that
18 include testimony about a biological male with -- in
19 your words -- with CAIS?

20 MR. FRAMPTON: Objection; form and scope. 09:46:33

21 THE WITNESS: If I had been asked to provide
22 expert information on that matter, I could perhaps look
23 more into it, but I have not been asked to provide
24 expert witness, expert statement on where individuals
25 with disorders/differences of sexual development should 09:46:52

1 participate.

2 BY MR. BLOCK:

3 Q Okay. So you -- you have no expert opinion on
4 the participation of people with DSDs in sports for
5 girls and women; right? 09:47:05

6 MR. FRAMPTON: Objection; form and scope.

7 Go ahead.

8 THE WITNESS: In my declaration, there is a
9 small statement in there about DSDs, and I will stand
10 by that statement. 09:47:15

11 BY MR. BLOCK:

12 Q All right. Well, let's look to that.

13 If you could turn to that -- that exhibit
14 and -- and identify for me the statement about DSDs.

15 A Which exhibit number is that? 09:47:34

16 Q That's a good question. I think it's Exhibit
17 Number -- separate windows are tough. I believe it's
18 the first one up there, Exhibit 64.

19 So it might be in paragraph 4 of your report,
20 if you could look at that. 09:48:20

21 A All right. I am looking at paragraph 4.

22 Q Okay. Is this the reference to DSDs that
23 you're -- that you were referring to just now?

24 A That is correct.

25 Q Okay. So the -- the first sentence -- the 09:48:31

1 first two sentences of that paragraph say (as read):

2 "Although disorders of sexual

3 development (DSDs) are sometimes

4 confused with discussions of

5 transgender individuals, the two are

09:48:43

6 different phenomena. DSDs are

7 disorders of physical development.

8 Many DSDs are 'associated with genetic

9 mutations that are now well known to

10 endocrinologists and geneticists.'" "

09:48:57

11 Did I read that correctly?

12 A Yes, you did.

13 Q Okay. And so that's the extent of your expert

14 testimony about DSDs?

15 A That is correct.

09:49:07

16 Q Okay. Do you know if complete androgen

17 insensitivity syndrome is associated with a genetic

18 mutation?

19 MR. FRAMPTON: Object to the form.

20 THE WITNESS: I will stand by that statement

09:49:24

21 which is a quote from the endocrinology --

22 Endocrine Society.

23 BY MR. BLOCK:

24 Q But sitting here today, you don't know whether

25 CAIS is associated with a genetic mutation, do you?

09:49:32

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1 MR. FRAMPTON: Same objection.

2 THE WITNESS: I do not know off the top of my
3 head.

4 BY MR. BLOCK:

5 Q Okay. So -- so to the best of your knowledge, 09:49:44
6 does H.B. 3293 make any distinction between people with
7 DSDs and people who are transgender?

8 MR. FRAMPTON: Objection; form and scope.

9 THE WITNESS: I would need to refresh my
10 reading on that bill to see what it states on that 09:50:06
11 matter.

12 BY MR. BLOCK:

13 Q So -- but the scope of your expert testimony,
14 when you provide opinions about people who, in your
15 language, are biological males, you are limiting your 09:50:14
16 expert opinion to people who are biological males
17 who -- who are either cisgender males or trans girls
18 and trans women; is that right?

19 MR. FRAMPTON: Same objections.

20 THE WITNESS: Can you please restate the 09:50:39
21 question for me?

22 BY MR. BLOCK:

23 Q Yeah. So -- so you're providing testimony
24 about, quote, biological males; correct?

25 A Biological males and biological females. 09:50:46

1 Q Okay. So in terms of biological males, the
2 only biological males you're addressing in your
3 testimony, to -- to use your phrase, biological males,
4 are cisgender boys and men and trans girls and women,
5 but not any biological males, in your language, that 09:51:07
6 have DSDs; is that fair?

7 MR. FRAMPTON: Objection; form and scope.

8 Go ahead.

9 THE WITNESS: Yes, I was not asked to offer
10 expert opinion on differences or disorders of sexual 09:51:17
11 development.

12 BY MR. BLOCK:

13 Q All right. Including people who you consider
14 to be biological males who have DSDs; correct?

15 MR. FRAMPTON: Same objection. 09:51:28

16 THE WITNESS: That is correct.

17 BY MR. BLOCK:

18 Q Okay. Do you know what the term "sex assigned
19 at birth" refers to?

20 A Yes, I understand the term "sex assigned at 09:51:47
21 birth."

22 Q Okay. So -- so if I use the term "sex
23 assigned at birth," you can understand what I'm saying?

24 A Yes, I can understand what you're saying.

25 Q Okay. Great. 09:51:56

1 I have some questions just about your
2 education and research background, but, you know, I'd
3 prefer not to belabor them by going through your CV
4 line by line. So I'm going to ask you questions, and
5 if you think you need to refer specifically to your CV, 09:52:20
6 we can do that, but I'm hoping that's not necessary.

7 So as part of your formal education, you never
8 took any courses regarding transgender people; is that
9 right?

10 A I did not take a course where the title of the 09:52:34
11 course was "Transgender Individuals."

12 Q Okay. And did you take a course where
13 transgender individuals were discussed?

14 A Yes.

15 Q And how many courses? 09:52:52

16 A That would be difficult to say. To give a
17 number, I mean, I would be speculating right now. It's
18 been 20 years.

19 Q Do you -- do you have any specific
20 recollection of any courses where transgender people 09:53:10
21 were discussed?

22 A I am pretty sure that transgender individuals
23 were discussed in the undergraduate Abnormal Psychology
24 class I took. Very possibly in General Psychology.
25 Possibly discussed in any of the numerous physiology 09:53:25

1 classes as an undergraduate or graduate student.

2 Possibly in the endocrinology class as a graduate

3 student.

4 Q This is all just possibly; right? You don't

5 have a specific recollection?

09:53:44

6 A Just thinking, also some of the sociology

7 classes may have included it. But, again, it might

8 have; it might not have been. And also, whether that

9 was a discussion that the instructor initiated or the

10 students initiated, I couldn't testify at this point.

09:54:00

11 Q Okay. You received your undergrad degree in

12 1997; right?

13 A That is correct.

14 Q Do you -- do you think it's -- it's plausible

15 that you had a lot of discussions about transgender

09:54:11

16 people from 1993 to 1997?

17 A Yes, it's very plausible.

18 Q Okay. Have you ever -- as part of your --

19 obtaining any -- any of your degrees, did you ever

20 conduct any research concerning transgender people?

09:54:32

21 A Can you clarify what you mean by "research"?

22 Q I -- I mean original research, where you have

23 a hypothesis and you test it.

24 A So, no, I did not conduct any primary research

25 on transgender individuals.

09:54:55

1 Q Okay. Did you conduct any other form of
2 research other than what you referred to as primary
3 research?

4 A I probably looked for research papers or maybe
5 saw research papers on transgender individuals. Again, 09:55:07
6 it may have been as part of an assigned reading in a
7 class, or it may have been something come across in
8 other reading for general knowledge.

9 Q You're just saying that this could have
10 happened, but you don't have a specific recollection of 09:55:20
11 it, do you?

12 A That is correct. I did not write down in a
13 diary when I would read a paper.

14 Q Well, no, but you -- sitting here today, you
15 don't have any recollection of ever reading a paper on 09:55:30
16 transgender people as part of obtaining your
17 undergraduate, your Master's or your Ph.D. degrees;
18 correct?

19 A I don't think that's what I said.

20 Q Well, so -- 09:55:44

21 A I think I said I -- I might have. I didn't
22 say that I did not.

23 Q Well, but you don't have any affirmative
24 memory of doing so?

25 MR. FRAMPTON: Object to the form. 09:55:55

1 THE WITNESS: What do you mean by "affirmative
2 memory"?

3 BY MR. BLOCK:

4 Q Well, by -- by saying you might have, that --
5 that's different to me than saying you remember doing 09:56:04
6 it in some form, but don't remember the exact time or
7 place. So I'm trying to clarify whether you remember
8 doing it, but can't, you know, put your finger on
9 exactly when it happened, or whether you're saying you
10 can't rule out the possibility that you did it. 09:56:20

11 So are you saying that you can't rule out the
12 possibility that you did it?

13 A So I am saying that it's very likely that I
14 had discussions in classes on transgender individuals.
15 It's very likely that there was a paper that I read or 09:56:35
16 more than one paper regarding transgender individuals,
17 possibly even a textbook chapter.

18 Q Okay. And do you consider reading a textbook
19 chapter or paper for class to be academic research?

20 A Reading a scholarly paper would be considered 09:56:56
21 academic research as it could lead to something like a
22 literature review, a meta-analysis, and it is an
23 essential part of the research process.

24 Q Right. But you didn't do any reading as part
25 of preparing for literature review or meta-analysis; 09:57:11

1 correct?

2 A I did not include any in my literature review
3 or meta-analysis. I may have done reading as part of
4 my Master's thesis and doctoral dissertation.

5 I know for a fact, because of the topic of my 09:57:38
6 Master's thesis and doctoral dissertation, I had to
7 read very widely on steroid hormone, biogenesis and
8 actions.

9 Q So we had a discussion about some of this two
10 years ago. Do you think your memory about what -- your 09:57:59
11 readings was more accurate two years ago or more
12 accurate today?

13 MR. FRAMPTON: Object to the form.

14 THE WITNESS: I would say more accurate today
15 because I have -- since you asked me this two years 09:58:14
16 ago, I've thought about it more to remember, okay, did
17 this happen in Abnormal Psychology, in Sports
18 Psychology, something like that.

19 BY MR. BLOCK:

20 Q Okay. So I just want to be clear about a 09:58:23
21 distinction between conducting reading as in a -- as a
22 class assignment and conducting reading as part of your
23 research process. All right? Does that distinction
24 make sense to you?

25 A Yes. 09:58:41

1 Q Okay. So you've -- you've talked about maybe
2 reading a paper or a chapter as part of a class
3 assignment; correct?

4 A Yes.

5 Q Okay. So in terms of reading as part of your 09:58:52
6 own independent research process, do you have any
7 recollection of doing any reading about transgender
8 people as part of your own independent research process
9 while obtaining your degrees?

10 A I don't have a specific recollection of doing 09:59:09
11 that independently while reading my -- while performing
12 my Master's and doctoral research, but, again, I might
13 have.

14 Q Okay. So since receiving your doctorate until
15 the time when you first reached out to ADF, have you -- 09:59:28
16 had you ever conducted any research concerning
17 transgender people?

18 A Once again, please clarify what you mean by
19 "research."

20 Q All right. Well, let's do primary research. 09:59:42

21 A No, I had not done primary research of
22 transgender individuals.

23 Q Had you ever conducted any literature review
24 regarding transgender people?

25 A I have not formally written a literature 09:59:56

1 review.

2 Q Had you ever written a meta-analysis about
3 transgender people?

4 A No, I had not performed a meta-analysis
5 regarding transgender individuals. 10:00:07

6 Q Okay. So what other professional research
7 might you have done regarding transgender people?

8 A Trying to keep up with the legislation in
9 sports regarding the participation of transgender
10 individuals and then on seeing the legislation, out of 10:00:25
11 my own curiosity, looking to see what research was
12 informing that legislation.

13 Q Okay. In terms of original research that
14 you've done, have any of the subjects in your original
15 research been transgender, to the best of your 10:00:41
16 knowledge?

17 A To the best of my knowledge, none of any
18 subjects have been transgender.

19 Q Okay. Have you worked with transgender people
20 in any capacity? 10:00:52

21 MR. FRAMPTON: Object to the form.

22 THE WITNESS: I -- I think there are
23 individuals at the university that are transgender that
24 I have worked with on committees or other things.

25 ///

1 BY MR. BLOCK:

2 Q Okay. How many transgender people do you
3 think you've met?

4 MR. FRAMPTON: Same objection.

5 THE WITNESS: I can think of two by name and 10:01:22
6 others that I've met, but -- I've met a lot of people,
7 and so to try and come up with a number that were
8 transgender is going to be very, very difficult.

9 BY MR. BLOCK:

10 Q Have you ever appeared on any podcasts? 10:01:41

11 A Yes.

12 Q Which ones?

13 A I probably can't name all of them.

14 Q Okay.

15 A I can do my best. 10:01:55

16 Q Great.

17 A So there was a podcast Muscle for Life with --
18 with Mike Matthews, I think. I was on the Megyn Kelly
19 podcast. I was on Munk Debates podcast. I was on
20 Governor Ricketts' podcast. There's another one out 10:02:18
21 there that I remember the podcast. I don't remember
22 the name of it.

23 Q Do you remember approximately when the
24 Megyn Kelly podcast was?

25 A A little less than a year ago, if I remember 10:02:39

1 right.

2 Q And what was the topic of that podcast?

3 A That was regarding the participation of
4 biological males in female sports.

5 Q And what was the Munk Debates podcast? 10:02:51

6 A That was also about biological males
7 participating in female -- in women's sports.

8 Q And when -- when was that podcast?

9 A Last summer, maybe late last summer.

10 Q Okay. And when you refer to biological males 10:03:12
11 in these podcasts, did you discuss at all people with
12 DSDs?

13 A If we did, it was not a major topic of
14 discussion.

15 Q Okay. So your -- your podcast with 10:03:24
16 Governor Ricketts, that's on his show "The Nebraska
17 Way"; is that -- is that correct?

18 A That is correct.

19 Q Okay. And you appeared on September 1st,
20 2021? 10:03:42

21 A I will trust you on the date on that. I don't
22 remember myself.

23 Q All right. Does that sound around the time?

24 A That sounds like the right time period.

25 MR. BLOCK: Okay. Great. 10:03:53

1 So I'm going to introduce an exhibit marked 68
2 and if you can open it up.

3 The concierge -- it's an -- it's a video clip,
4 and the concierge is going to have to play it for us.

5 But let me know what appears on -- on your 10:04:18
6 screen before -- before I ask the concierge to -- to
7 play it.

8 Do you see a file?

9 (Exhibit 68 was marked for identification
10 by the court reporter and is attached hereto.) 10:04:28

11 THE WITNESS: I see Exhibit 068 - Clip, space,
12 2005.

13 BY MR. BLOCK:

14 Q Okay. I'm going to have -- I'm going to ask
15 the concierge to play the clip now. And it's -- it's a 10:04:37
16 little bit over a minute long. I didn't want to -- you
17 to think that I've cut anything off here. And then
18 after the clip plays, I'll ask you a few questions
19 about it.

20 Does that sound okay? 10:04:50

21 A Will the clip show up in the -- in this Zoom
22 meeting, or is it going to be a different window?

23 Q It's going to show up as a screen share --

24 A Okay.

25 Q -- right now. 10:05:05

1 Can you see the screen share?

2 A Yes.

3 Q Great.

4 (Video clip played.)

5 MR. BLOCK: Thank you to the concierge. 10:06:32

6 BY MR. BLOCK:

7 Q Does -- does this video clip appear to be an

8 accurate excerpt of your interview with

9 Governor Ricketts?

10 A Yes, that's me. 10:06:41

11 Q Okay. Do you still agree with everything you

12 said in that video clip?

13 MR. FRAMPTON: Objection; form and scope.

14 MR. TRYON: Objection; scope.

15 BY MR. BLOCK: 10:06:50

16 Q You can answer.

17 A Can you repeat your question, please?

18 Q Do you still agree with everything you said in

19 that video clip?

20 A Yes, I do. 10:06:58

21 Q Okay. You're not a mental health expert;

22 right?

23 A That is correct.

24 Q You don't have any education or training

25 that -- that would provide a basis for you to offer an 10:07:10

1 expert opinion on the proper healthcare for transgender
2 youth, do you?

3 MR. FRAMPTON: Objection; form and scope.

4 Go ahead.

5 THE WITNESS: No, I would not be called upon 10:07:19
6 to offer treatment for transgender individuals.

7 BY MR. BLOCK:

8 Q But my question is, to offer an expert opinion
9 on treatment for transgender individuals, you don't
10 have any, you know, credentials that would allow you to 10:07:34
11 provide an expert opinion on that topic, do you?

12 MR. FRAMPTON: Same objection.

13 Go ahead.

14 THE WITNESS: I have not been asked to offer
15 an expert opinion on the psychological or psychiatric 10:07:44
16 care of transgender individuals.

17 BY MR. BLOCK:

18 Q But my question is, do you have the
19 credentials and training that would allow you to offer
20 such an opinion, if you were asked? 10:07:52

21 MR. FRAMPTON: Same objection.

22 THE WITNESS: No, I do not have those
23 credentials or degrees.

24 BY MR. BLOCK:

25 Q Okay. In this clip, you used the word 10:08:07

1 "transgenderism"; right?

2 A That is correct.

3 Q Is that a medical term?

4 MR. FRAMPTON: Objection; form and scope.

5 THE WITNESS: I'm not sure what you mean, is 10:08:19
6 it a medical term?

7 BY MR. BLOCK:

8 Q What does transgenderism mean?

9 A An individual who is transgender.

10 Q Okay. In any of the -- the scholarly articles 10:08:28
11 that you've read about transgender people, have any of
12 them used the term "transgenderism"?

13 A I cannot recall, to answer that question, if
14 they have or have not.

15 Q Okay. In the clip, you mentioned Ben Shapiro; 10:08:45
16 correct?

17 A That is correct.

18 Q Who is Ben Shapiro?

19 A Ben Shapiro is an individual that does a lot
20 of podcasts, news clips, news interviews, speaking at 10:09:00
21 organizations on social and political matters.

22 Q Do you -- do you think he's a reliable source
23 of authority on mental healthcare for transgender
24 youth?

25 MR. FRAMPTON: Objection; form and scope. 10:09:19

1 THE WITNESS: In the role that he is filling,
2 I think Ben Shapiro is able to provide reliable
3 information on what has been written in these matters.

4 BY MR. BLOCK:

5 Q Okay. And reliable enough that you -- you 10:09:32
6 thought it was worth repeating to the audience of the
7 podcast; correct?

8 MR. FRAMPTON: Same objections.

9 THE WITNESS: That is correct.

10 BY MR. BLOCK: 10:09:49

11 Q Okay. In what context have you heard his
12 opinions about transgender youth?

13 A Do you mean context or format?

14 Q Let's start with format.

15 A So in a number of videos and radio clips and 10:10:02
16 seeing on the news, I have seen Ben Shapiro make
17 statements regarding transgender individuals.

18 Q And has that affected your own opinion on
19 these issues?

20 MR. FRAMPTON: Objection; form and scope. 10:10:21

21 THE WITNESS: No, I don't think what he has
22 said has affected my opinion.

23 BY MR. BLOCK:

24 Q Has it affected your opinion on mental
25 healthcare for transgender youth? 10:10:37

1 MR. FRAMPTON: Same objection.

2 THE WITNESS: I don't think it has affected my
3 opinion on healthcare for transgender youth.

4 BY MR. BLOCK:

5 Q Okay. Is new toy syndrome a medical term? 10:10:47

6 MR. FRAMPTON: Same objections.

7 THE WITNESS: No.

8 BY MR. BLOCK:

9 Q Okay. Do you think that receiving
10 gender-affirming care is analogous to playing with a 10:10:56
11 new toy?

12 MR. FRAMPTON: Objection; form and scope.

13 THE WITNESS: I'm sorry, can you state the --
14 restate the question?

15 BY MR. BLOCK: 10:11:13

16 Q Yeah. Do you -- do you think transgender
17 youth receiving gender-affirming care is analogous to a
18 person playing with a new toy?

19 MR. FRAMPTON: Same objections.

20 THE WITNESS: In the context that I quoted 10:11:22
21 Ben Shapiro, in that interview, it is a good analogy.

22 BY MR. BLOCK:

23 Q How is it a good analogy?

24 A As I explained in that, also as it was
25 explained by Ben Shapiro, when people get a new toy, 10:11:37

1 they're often very happy with it, and then the newness
2 wears off. That is drawn as an analogy to what has
3 been demonstrated in scholarly literature about
4 transgender individuals.

5 Q What scholarly literature? 10:11:53

6 MR. FRAMPTON: Objection; form and scope.

7 THE WITNESS: The research is cited on the
8 SEGM web page.

9 BY MR. BLOCK:

10 Q What's SEGM? 10:12:05

11 A I may not be able to tell you precisely, but
12 it is something like Society for Evidence-Based Gender
13 Medicine.

14 Q And why have you been reading the SEGM web
15 page? 10:12:25

16 MR. FRAMPTON: Objection; form and scope.

17 THE WITNESS: It is a good place to find
18 information about transgender individuals to help make
19 sure that I am staying current on the information in
20 this area. 10:12:34

21 BY MR. BLOCK:

22 Q How is information about the mental healthcare
23 of transgender individuals relevant to you in your
24 work?

25 MR. FRAMPTON: Same objections. 10:12:48

1 THE WITNESS: The mental healthcare is often
2 associated with the use of either puberty blockers,
3 testosterone suppression, estrogen administration,
4 which then has physiological effects.

5 BY MR. BLOCK: 10:13:06

6 Q So -- so you read about -- well, I -- I guess,
7 could you explain further? How -- how is utility of
8 the mental healthcare relevant to your opinion about
9 physiological issues and athletic advantages?

10 MR. FRAMPTON: Same objection, form and scope. 10:13:27

11 THE WITNESS: If an individual is being given
12 a physiologically active medicine, such as a puberty
13 blocker, such as testosterone suppression or
14 administration of estrogen, that will affect their
15 physiology, which then may or may not have an affect on 10:13:47
16 their ability to compete in athletics.

17 So it is important to know what is being done.

18 BY MR. BLOCK:

19 Q Does -- does the mental health impacts of
20 those treatments matter in terms of the physiological 10:14:04
21 effects?

22 A If the mental health treatment includes the
23 administration of physiological substances, then it
24 affects physiological responses.

25 Q Yeah, so, I guess, that's not really answering 10:14:25

1 my question.

2 So you -- you -- you talked about how, in your
3 opinion, the positive mental effects of
4 gender-affirming care for some people would -- are like
5 a new toy, that they have a positive effect and then 10:14:39
6 that positive mental health effect wears off, and my
7 question is whether the -- the fact that you alleged
8 that positive mental health effect would wear off has
9 any implication for the physiological results of having
10 taken that medication. 10:15:04

11 Does that make sense?

12 MR. TRYON: Objection --

13 MR. FRAMPTON: Objection; form.

14 MR. TRYON: -- form.

15 THE WITNESS: I would ask you to try and break 10:15:11
16 that question down a little more.

17 BY MR. BLOCK:

18 Q Sure.

19 A I'm not sure where you're going.

20 Q Sure. So the -- if -- if -- assuming that -- 10:15:17
21 taking it as an assumption, that puberty blockers and
22 gender-affirming hormones had no positive health
23 effects for mental health, how would that assumption
24 impact your opinion on the physiological effects of
25 taking those medications? 10:15:43

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1 MR. FRAMPTON: Objection; form and scope.

2 Go ahead.

3 THE WITNESS: Well, puberty blockers and
4 testosterone suppression and estrogen administration
5 are physiological active substances. What they do for 10:15:57
6 mental health compared to what they do for athletic
7 performance and physiological responses might be
8 separate issues.

9 BY MR. BLOCK:

10 Q Okay. So if they're separate issues, why do 10:16:08
11 you read about the mental health effects of taking
12 those medications?

13 MR. FRAMPTON: Same objections.

14 THE WITNESS: I think I previously answered
15 this question, to know what are the treatments that are 10:16:27
16 being used that could then affect physiological
17 responses to exercise.

18 BY MR. BLOCK:

19 Q Okay. So what other sources of information do
20 you consult on the -- the mental health effects of 10:16:39
21 puberty blockers and gender-affirming hormones?

22 MR. FRAMPTON: Objection; scope.

23 THE WITNESS: So I will find scholarly
24 articles and read those to find information. A lot of
25 the information, if I find it on a web page, I will 10:17:01

1 look to see if it is to a scholarly journal, scholarly
2 article that's reputable, but then I can verify that
3 the information on the web page is valid, at least
4 based on what has been presented in scholarly
5 literature. Of course, you see things in the news as 10:17:18
6 well; right?

7 BY MR. BLOCK:

8 Q Is there any scholarly article that -- that
9 likens gender-affirming care to a new toy?

10 MR. FRAMPTON: Objection; form and scope. 10:17:32

11 THE WITNESS: I could not say.

12 BY MR. BLOCK:

13 Q Okay. What scholarly articles, sitting here
14 today, can -- can you think of having read on the topic
15 of mental healthcare for transgender youth? 10:17:46

16 MR. FRAMPTON: Same objection; form and scope.

17 THE WITNESS: So there was a review on the
18 effects of puberty blockers that was put out by Sweden,
19 Karolinski Institute, and so I read that article and
20 looked up a number of the articles that were referenced 10:18:11
21 in there. Similar type of thing came out of
22 Great Britain, their national health organization,
23 something like that. And so I looked at a lot of those
24 articles.

25 I -- I have also, again, coming across some on 10:18:24

1 PubMed or Google Scholar. I've seen other articles
2 looking at the effects of hormone treatment in
3 transgender individuals and measures of mental health.

4 BY MR. BLOCK:

5 Q And can you remember any of the articles on 10:18:39
6 PubMed or Google Scholar?

7 A I cannot remember them by author or title.

8 Q Okay. Have you read the Endocrine Society
9 guidelines on providing gender-affirming care to
10 transgender people? 10:18:58

11 A I --

12 MR. FRAMPTON: Objection; scope.

13 Go ahead.

14 THE WITNESS: I have read the information on
15 the web page. I have read the article. I cannot 10:19:04
16 remember which journal it's published in.

17 BY MR. BLOCK:

18 Q Well, I'm sorry, what -- what -- what are you
19 referring to when you say a web page and an article?

20 A So the Endocrine Society has a web page 10:19:22
21 regarding the administration of puberty blockers and
22 estrogen -- or testosterone suppression, estrogen
23 administration for -- for transgender individuals. And
24 so I have read through that web page, and there is an
25 article associated with the information on that web 10:19:42

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1 page that was published in a scholarly journal.

2 Q Okay. And -- and that -- that would be the --
3 the -- the 2017 guidelines for care of people with
4 gender dysphoria and gender incongruence?

5 A That is my recollection, yes. 10:19:57

6 Q When did you read that?

7 A Sometime in the past year.

8 Q So at the time of our past deposition, you
9 hadn't read that yet; is that correct?

10 A As I recall, that is correct. 10:20:14

11 Q Okay. But -- but since then, you have read
12 it?

13 A Yes. You seem to make a strong suggestion
14 that I should read that.

15 Q Okay. Did you learn anything from reading it? 10:20:26

16 A Yes, I did.

17 Q What did you learn?

18 A I learned that the recommendations of the
19 Endocrine Society for testosterone suppression result
20 in much, much lower testosterone concentration than 10:20:39
21 those recommended by world -- or, sorry, by world sport
22 or by the Olympics.

23 Q Great. Just to close the loop, can you think
24 of any other source of information or political
25 commentator you've heard and talk about transgender 10:21:05

1 youth who you think provides a good description of the
2 science?

3 MR. FRAMPTON: Objection; form and scope.

4 THE WITNESS: So I've cited a number of papers
5 in my article -- or, sorry, in my expert declaration. 10:21:25
6 So I've read those articles of scholars.

7 As far -- as far as political commentary, it's
8 all over the place these days, so it's hard to identify
9 who has or has not opined on that.

10 Q All right. Do you -- I'm going to turn to a 10:21:42
11 new line of questions. Do you need a break before
12 then?

13 A Yeah, let's take five.

14 Q Okay. Great.

15 THE VIDEOGRAPHER: We are off the record at 10:21:59
16 10:22 a.m.

17 (Recess.)

18 THE VIDEOGRAPHER: We are on the record at
19 10:29 a.m.

20 MR. BLOCK: Great. 10:29:11

21 BY MR. BLOCK:

22 Q I want to go back in time and ask you about
23 the time that you first reached out to ADF on this
24 issue of the participation of transgender athletes.

25 Do you remember who you contacted at ADF? 10:29:30

1 A I do not remember who I contacted.

2 Q And do you remember why you knew that ADF was
3 the organization to contact?

4 A I saw a news clip or information online about
5 the Soule versus CIAC case, and it identified Alliance 10:29:57
6 Defending Freedom as representing Selina Soule.

7 Q Okay. And, you know, at the time you first
8 contacted ADF, had you done any research on the -- the
9 effects of puberty blockers or gender-affirming
10 hormones on transgender people? 10:30:19

11 A Once again, what do you mean by "research"?

12 Q Have you -- had you read anything on the -- on
13 the physiological effects of gender-affirming care at
14 the time you first reached out to ADF?

15 A Yes, I had. 10:30:39

16 Q What had you read?

17 A I had read some articles on the effects of
18 gender-affirming hormone therapy, to use your
19 terminology on that, on various physiological factors,
20 such as muscle size or strength or muscle mass, those 10:30:55
21 types of things.

22 Q You -- you had already read that research
23 before you reached out to ADF?

24 A I had read some.

25 Q Okay. And had you read that research before 10:31:10

1 you saw the news item about the transgender runners in
2 Connecticut?

3 A Yes.

4 Q Okay. So -- so you -- you had previously had
5 occasion to read research on the effects of 10:31:26
6 gender-affirming hormones on muscle mass, and then you
7 saw the news clip about the runners in Connecticut, and
8 then you contacted ADF? That's the chronology of how
9 it went?

10 MR. FRAMPTON: Objection; form. 10:31:39

11 THE WITNESS: Yes, that sounds like a correct
12 timeline.

13 BY MR. BLOCK:

14 Q Okay. And what -- what would have prompted
15 you to -- to do any research specifically on the 10:31:48
16 effects of gender-affirming hormones before seeing the
17 news item about transgender people in Connecticut?

18 A As I had mentioned previously, staying up to
19 date on what the laws are or the rules, I guess would
20 be a more appropriate way to say it, regarding the 10:32:10
21 participation of transgender women in women's sports or
22 trans women in women's sports. Student questions,
23 asking about that. Particularly after 2019, when
24 Cecé Telfer won the 400-meter hurdles in Division II,
25 because I had some students that were there and had 10:32:35

1 questions.

2 Q What do you mean, that were there?

3 A I have students that are student athletes that
4 compete in Division II women's track and field and were
5 at that national championship where Cecé Telfer won the 10:32:53
6 400-meter hurdles.

7 Q And were those students upset that Cecé Telfer
8 had won?

9 MR. FRAMPTON: Form.

10 THE WITNESS: The students had questions and 10:33:05
11 many of them stated questions such as how can that be
12 fair.

13 BY MR. BLOCK:

14 Q So were they upset?

15 MR. FRAMPTON: Same objection. 10:33:20

16 THE WITNESS: I guess I would need more
17 clarification on "upset."

18 BY MR. BLOCK:

19 Q So they didn't think it was fair?

20 A That would be correct. 10:33:32

21 Q And so in response to those student questions,
22 you -- you started doing research; is that right?

23 A I had been looking it prior to the student
24 questions, but in response to the student questions, I
25 suppose you could say I tried to dig deeper. 10:33:52

1 Q Okay. So what -- what -- how had you been
2 looking into it before the student questions?

3 A Before the student questions, I would look at
4 the policies as put out by the NCAA, put out by the
5 N -- IOC and tried to look at research that informed 10:34:08
6 those policies by searching Google Scholar, PubMed,
7 reading news articles about it and see if they had
8 links or information on research.

9 Q And what about Cecé's participation did the
10 students think were unfair? 10:34:26

11 A Cecé is a biological male and was competing in
12 women's sports.

13 Q And why did they think that was unfair?

14 A They thought it was unfair for a biological
15 male to compete in women's sports. 10:34:43

16 Q And when you say you did earlier research on
17 NCAA policy and the IOC, you know, what had prompted
18 you to do that research?

19 A It's an important topic in sports, in my
20 field. It's possible that the textbook I was using at 10:35:03
21 the time had a statement on it.

22 Q Had you done any research on the participation
23 of Caster Semenya in the IOC?

24 A I have read some news articles on
25 Caster Semenya and probably heard some things on 10:35:20

1 podcasts about Caster Semenya.

2 Q Okay. But you didn't do any research about
3 that?

4 A I -- again, more than news articles, I cannot
5 recall a specific article that said this was 10:35:37
6 Caster Semenya's medical condition in the scholarly
7 literature.

8 Q Okay. But you were more interested in doing
9 research on transgender athletes than on athletes like
10 Caster Semenya; is that fair? 10:35:54

11 MR. FRAMPTON: Objection; form.

12 THE WITNESS: That would be fair to say.

13 BY MR. BLOCK:

14 Q Okay. And why is that?

15 A We are dealing with separate issues. 10:36:06
16 Disorders of sexual development are not the same as a
17 transgender individual.

18 Q And so why were you more interested in the
19 participation -- researching the participation of
20 transgender individuals as opposed to individuals with 10:36:20
21 DSDs?

22 MR. FRAMPTON: Same objection.

23 THE WITNESS: The policies seem to, if I
24 recall, state "transgender individuals." The student
25 questions were about transgender individuals. The 10:36:35

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1 stuff I was seeing in the news was about transgender
2 individuals.

3 BY MR. BLOCK:

4 Q When did the topic of the participation of
5 transgender individuals in -- in sports first come to 10:36:45
6 your attention?

7 A That would be very challenging to say, but I
8 would say sometime after 2004.

9 Q Why sometime after 2004?

10 A That seems to be the first IOC policy I 10:37:04
11 remember that addressed transgender individuals.

12 Q And when did a transgender individual first
13 participate in the Olympics?

14 A I don't know.

15 Q You have no idea? 10:37:23

16 A No.

17 Q Do you know if it was, like, before 2010?

18 A I don't know.

19 Q Okay. You have no -- do you have any
20 knowledge or recollection of any transgender people 10:37:45
21 participating in the Olympics?

22 A Would you consider the participation of
23 Bruce Jenner to be a transgender individual
24 participating in the Olympics?

25 Q About a -- a -- a transgender person competing 10:38:01

1 post transition.

2 A So I do know of someone that has done that.

3 Q Who?

4 A Laurel Hubbard.

5 Q Okay. Anyone before her? 10:38:19

6 A I cannot recall anyone before that.

7 Q Okay. When did you first -- when did you
8 first become -- well, let me -- I'll -- I'll -- I'll
9 come back to that.

10 When -- when is the first time a transgender 10:38:42
11 person -- a transgender woman competed in women's
12 tennis events?

13 A I -- I don't know.

14 Q You -- you have no idea?

15 A There's something I seem to recall of a 10:39:05
16 situation that was in the '70s or '80s, but I can't
17 recall off the top of my head more specifics.

18 Q Does the name Renée Richards refresh your
19 recollection about it?

20 A So as you mention that, yes, the name 10:39:24
21 Renée Richards playing tennis -- again, I couldn't, at
22 this point in time, put it in a timeframe other than I
23 think it was probably before I was even in college.

24 Q Okay. And when did you first become aware
25 that that had happened? 10:39:40

1 A Sometime in the past 15 or so years. In my
2 readings, I remember seeing something about
3 Renée Richards.

4 Q Okay. And did the readings -- what did the
5 readings say about her? 10:39:55

6 A I can't recall at this point in time.

7 Q Okay. And did you have any feelings about
8 whether it was fair for her to be participating in
9 women's tennis in the '70s?

10 MR. FRAMPTON: Objection; form and scope. 10:40:06

11 Go ahead.

12 THE WITNESS: I -- I would, once again, go
13 back to my statement that if Renée Richards was a
14 biological male, then biological males have advantages
15 over biological females in sports. 10:40:23

16 BY MR. BLOCK:

17 Q Yeah, but I'm just -- I'm asking about, sir,
18 when you formed an opinion about -- about
19 Renée Richards, if you do -- if you did form an opinion
20 about Renée Richards, like when you -- when you first 10:40:35
21 heard about it, did you have an opinion about it being
22 fair or unfair?

23 MR. FRAMPTON: Same objection.

24 MR. TRYON: Objection.

25 THE WITNESS: So I -- I think I answered that 10:40:46

1 when I stated that biological males should not be
2 competing in women's sports.

3 BY MR. BLOCK:

4 Q Okay. So -- but you had that opinion the
5 first time you heard about Renée Richards; right? 10:40:58

6 MR. FRAMPTON: Same objections.

7 THE WITNESS: Again, where I can't put in a
8 specific timeframe when I first heard about
9 Renée Richards, I can't say if Renée Richards
10 influenced my opinion one way or another or what my 10:41:15
11 opinion was before reading that article.

12 BY MR. BLOCK:

13 Q So did you have an opinion about the
14 participation of transgender athletes in women's sports
15 before you did further research on the topic? 10:41:32

16 MR. FRAMPTON: Objection; form and scope.

17 THE WITNESS: Well, as long as I can recall,
18 sports has been separated. So you have sports for men,
19 meaning biological men, and sports for women, meaning
20 biological women, and that separation has been there. 10:41:51

21 Again, as long as I can recall, my knowledge of anatomy
22 and physiology, since I have been involved in study of
23 anatomy and physiology as a student, indicates there
24 are differences.

25 ///

1 BY MR. BLOCK:

2 Q Okay. And so -- so that was your -- that was
3 your sort of baseline assumption before you conducted
4 research, that -- that it would be unfair to allow a
5 transgender woman to participate in women's sports? 10:42:16

6 MR. FRAMPTON: Objection --

7 MR. TRYON: Objection.

8 MR. FRAMPTON: -- form.

9 THE WITNESS: I think it would be fair to say
10 that based on the experience that sports have been 10:42:26
11 separated by sex and knowing of the differences between
12 biological males and biological females, there's a --
13 they should be separated on sex.

14 BY MR. BLOCK:

15 Q All right. Just going to -- going on to a -- 10:42:47
16 a new topic now.

17 In your report, you say that even before
18 puberty, prepubertal boys outperform prepuberto --
19 prepubertal girls in athletic competition; right?

20 A Yes, I state that in my report. 10:43:08

21 Q Okay. And you -- and you attribute those
22 differences in performances to biological factors
23 instead of social ones?

24 MR. FRAMPTON: Objection; form.

25 You can -- 10:43:17

1 THE WITNESS: Yes, biological factors are the
2 primary reason that boys outperform girls in athletic
3 events.

4 BY MR. BLOCK:

5 Q Yeah, so -- but for prepubertal boys and 10:43:29
6 prepubertal girls, you attribute their difference in
7 performance to biological factors?

8 A That is correct.

9 Q Okay. What biological factors provide an
10 advantage to prepubertal boys over prepubertal girls? 10:43:48

11 A Boys have more lean body mass, which includes
12 more lean muscle mass, than girls. There are perhaps
13 other factors that contribute to that more lean body
14 mass and more muscle mass.

15 Q What does that -- what does that mean, there 10:44:09
16 other factors that contribute to the more lean body
17 mass and lean muscle mass?

18 A Well, having a Y chromosome compared to being
19 XX chromosome, there are a multitude of genes in
20 muscles that respond to the Y chromosome differently 10:44:30
21 than they do to X chromosomes.

22 Q And is there any research on how they respond
23 before puberty?

24 A The research is focused on the fact that there
25 is a difference in lean body mass before puberty. 10:44:50

1 Q Okay. So besides --

2 A To the best of my knowledge.

3 Q Sorry, I didn't mean to cut you off.

4 Besides lean body mass and lean muscle mass,
5 are there any other physiological differences connected 10:45:01
6 to athletic performance between boys and girls --

7 MR. FRAMPTON: Same objection.

8 BY MR. BLOCK:

9 Q -- before puberty?

10 A Yes. There are differences in overall growth 10:45:12
11 between boys and girls, as evidenced by the CDC and the
12 World Health Organization having separate growth charts
13 for both male and female fetuses and for boys and
14 girls.

15 Q But -- but in terms of physiological 10:45:25
16 characteristics associated with athletic performance,
17 what other physiological differences besides 10 percent
18 difference in lean body mass and lean muscle mass?

19 MR. FRAMPTON: Objection; form:

20 THE WITNESS: I would say -- that is the one 10:45:43
21 that we will focus on because that is the one that has
22 been fairly well demonstrated. There has to be
23 something else that contributes that lean body mass
24 biologically.

25 ///

1 BY MR. BLOCK:

2 Q Okay. Do you -- but you can't think of any
3 other measurable factor besides lean body mass that is
4 tied to athletic performance advantages for prepubertal
5 boys over prepubertal girls; right? 10:46:21

6 MR. FRAMPTON: Objection; form.

7 Go ahead.

8 THE WITNESS: Well, the paper by Eiberg that's
9 cited in my report demonstrated differences in VO2 max,
10 even when controlled for lean body mass, it seemed like 10:46:33
11 the boys' VO2 max was higher.

12 BY MR. BLOCK:

13 Q Okay. Did the McManis article also confirm
14 those findings?

15 A I would need to look at the McManis article to 10:46:46
16 refer. I cannot remember if McManis -- it was written
17 after Eiberg, I think, but I cannot remember if they
18 cite Eiberg.

19 Q Okay. Well, we might -- we might come back to
20 that. 10:47:33

21 The difference in lean body mass and lean
22 muscle mass that you refer to in your report is a
23 10 percent difference?

24 MR. FRAMPTON: Objection; form.

25 Go ahead. 10:47:40

1 THE WITNESS: The 10 percent number is stated
2 in the article by McManis.

3 BY MR. BLOCK:

4 Q Do you have any other knowledge of the
5 difference besides 10 percent? 10:47:49

6 A I cite several articles demonstrating
7 difference in body composition in children prepuberty.
8 I would need to look at those articles to either
9 calculate the difference myself or see if they specify
10 the difference. 10:48:05

11 Q But in your report, you -- you quoted the
12 10 percent figure; correct?

13 A That is correct.

14 Q Okay. If you could turn to your report, which
15 I believe is -- is Exhibit 46 -- 64. I got that 10:48:24
16 flipped.

17 A All right.

18 Q Thank you. I'm going to point you to a
19 specific paragraph in a second.

20 Paragraph 42 on page 17. 10:49:27

21 A Sorry, the page numbering on the document is
22 different than the page number that Acrobat --

23 Q No.

24 A -- is taking me to, so it will take me a
25 second, sorry. 10:49:59

1 Q Sure thing.

2 A All right. Paragraph 42.

3 Q You say (as read):

4 "No -- No single physiological

5 characteristic alone accounts for all 10:50:05

6 or any one of the measured advantages

7 that men enjoy in athletic

8 performance."

9 Do you see that?

10 A Yes, I do. 10:50:13

11 Q Okay. So does a difference in lean body mass

12 account for all or any one of the measured advantages

13 that men enjoy in athletic performance?

14 A Lean body mass is a major factor that provides

15 men -- males with athletic advantages over females. 10:50:34

16 Q Does it -- does it alone account for all or

17 any one of the measured advantages that men enjoy in

18 athletic performance?

19 MR. FRAMPTON: Objection; form.

20 THE WITNESS: I think I've answered your 10:50:57

21 question by stating it's a major factor, but not the

22 only factor.

23 BY MR. BLOCK:

24 Q Is -- are there any studies about the -- a

25 difference -- about the effect of a 10 percent 10:51:04

1 difference in lean body mass on athletic performance?

2 A I'm going to say yes, I'm sure there's studies
3 that are correlating lean body mass with performance.

4 Q But my question is a 10 percent difference in
5 lean body mass. 10:51:26

6 MR. FRAMPTON: Objection; form.

7 THE WITNESS: Again, there are -- I -- I will
8 say there are studies that are correlating percent lean
9 body mass with athletic performance in all sorts of
10 different events, and so that would include a 10:51:42
11 10 percent difference, along with other differences,
12 probably.

13 BY MR. BLOCK:

14 Q You -- you don't cite anything in your report
15 that purports to study the effect of a -- a 10 percent 10:51:51
16 difference in lean body mass in athletic performance,
17 do you?

18 MR. FRAMPTON: Same objection.

19 THE WITNESS: Can you clarify what you're
20 trying to ask me there? 10:52:05

21 BY MR. BLOCK:

22 Q In your report, do you cite any studies
23 reflecting what affect a difference in -- I'll say that
24 again, sorry.

25 Do you, in your report, cite any studies 10:52:21

1 measuring the effect of a 10 percent difference in lean
2 body mass on athletic performance?

3 MR. FRAMPTON: Objection; form.

4 THE WITNESS: I don't recall citing any
5 studies that specifically identify how much a 10:52:35
6 10 percent advantage enhances performance.

7 BY MR. BLOCK:

8 Q Okay. Thank you.

9 Are you aware of any study proving that
10 differences in athletic performance between prepubertal 10:53:01
11 boys and girls are caused by biological factors and not
12 social ones?

13 MR. FRAMPTON: Objection; form.

14 THE WITNESS: From a scientific standpoint,
15 science does not prove. 10:53:19

16 BY MR. BLOCK:

17 Q Science does not prove what?

18 A Science doesn't prove anything from a
19 scientific standpoint.

20 Q Well, do you have -- are there any articles 10:53:31
21 that purport to exclude social factors as a cause of
22 difference in performance between prepubertal boys and
23 prepubertal girls?

24 A Yes. Eiberg.

25 Q How does that purport to exclude social 10:53:47

1 factors?

2 A So Eiberg measured six- to seven-year-old boys
3 and girls, very objectively measured physical activity
4 in those children, measured very objectively VO2 max in
5 those children and body composition in those children 10:54:09
6 and found that even for the children of the same amount
7 of physical activity, boys have higher fitness.

8 Q And what -- what do you mean, even for
9 children of the same physical activity?

10 A So boys and girls that engage in the same 10:54:24
11 amount of physical activity -- running, jumping,
12 whatever constitutes physical activity -- the boys had
13 higher fitness.

14 Q So -- but does this mean physical activity in
15 terms of what was measured, like for a particular 10:54:40
16 event, or -- or physical activity in all aspects of
17 their life?

18 A This was physical activity as measured by an
19 accelerometer which measures the quantity and intensity
20 of physical activity during the time period the 10:54:54
21 accelerometer is worn.

22 Q Okay. So can you just explain to me how that
23 can give you information about, you know, whether these
24 boys and girls, as a general matter, like, were equally
25 physically active, like, outside of the laboratory? 10:55:16

1 A Sure. So an accelerometer is a small device
2 that is typically worn on your belt, usually on your
3 right hip, aligned over your knee, and then that
4 accelerometer, because of the scientific engineering --
5 okay, I'll call it voodoo magic, but that's not really 10:55:37
6 the right way to say it. The way the accelerator
7 works, it measures the movement of the body, and then
8 it quantifies that movement as far as intensity.

9 And then after your study period, you have the
10 person wear the accelerometer for the period of time 10:55:54
11 you want, typically free living, you put it on the
12 children and ask them to wear it for a week or two
13 weeks or however long, then you come back, you connect
14 the accelerometer to the computer, it downloads the
15 information from the accelerometer, gives you what are 10:56:07
16 known as counts. And again, you can quantify those
17 counts as sedentary, light, moderate or vigorous
18 intensity physical activity.

19 So between the two, you get an amount of
20 physical activity, an intensity of physical activity 10:56:22
21 for the given time period of study.

22 Q And so what -- what this study found is that
23 people who were similarly -- like, just active during
24 the period in which they were wearing this device, the
25 boys were more physically fit than the girls? 10:56:45

1 does the study add to that, in terms of translating
2 that into an athletic advantage?

3 MR. FRAMPTON: Objection; form.

4 THE WITNESS: What the study is doing is
5 quantifying and clarifying the differences between boys 10:58:29
6 and girls that -- well, for the same amount of physical
7 activity, boys have a higher VO2 max than girls.

8 Q Anything else besides the VO2 max?

9 MR. FRAMPTON: Objection; form.

10 THE WITNESS: And again, body composition, 10:58:51
11 which, again, lean body mass is another determinant of
12 potential for athletic performance and performance in
13 sorts.

14 BY MR. BLOCK:

15 Q But -- but that's just confirming something 10:59:02
16 that we already know, that -- that preberal boys --
17 prepubertal boys have, on average, 10 percent more lean
18 body mass?

19 MR. FRAMPTON: Objection; form.

20 THE WITNESS: If I recall, the study also 10:59:17
21 validated that for the same body composition, the boys
22 had a higher VO2 max. I would need to refer to the
23 study to verify if that was in there.

24 Q Okay. Anything else that -- that you think
25 purports to exclude social causes as a difference in 10:59:41

1 measured athletic performance --

2 MR. HAMPTON: Objection; form.

3 BY MR. BLOCK:

4 Q -- between prepubertal boys and prepubertal

5 girls? 10:59:56

6 MR. FRAMPTON: Sorry, same objection.

7 Go ahead.

8 THE WITNESS: So again, those papers that I

9 cite showing the differences in body composition

10 between prepubertal boys and prepubertal girls because 11:00:03

11 lean body mass is a biological factor.

12 BY MR. BLOCK:

13 Q Right. But besides body composition, I'm

14 talking about athletic performance. And is there

15 anything else that purports exclude social causes for 11:00:17

16 differences in athletic performance as opposed to body

17 composition?

18 MR. FRAMPTON: Same objection.

19 THE WITNESS: To the best of my knowledge,

20 there are no studies quantifying the effects of social 11:00:30

21 causes on differences in athletic performance or

22 physiological factors of athletic performance between

23 boys and girls.

24 BY MR. BLOCK:

25 Q In preparation for your report, did you 11:00:41

1 conduct original research on the athletic performance
2 of prepubertal boys and prepubertal girls?

3 A I have --

4 MR. FRAMPTON: Objection; form.

5 Go ahead. 11:00:59

6 THE WITNESS: I have downloaded, as stated in
7 my report, data from Athletic.net, looking at the
8 performance of seven-and eight-year-old children, of
9 nine- and ten-year-old children, which are presumed to
10 be prepubertal, and not just the numbers in the report, 11:01:14
11 but other data, I have analyzed it statistically, and
12 the boys outperform the girls in all of the track
13 events that I analyzed.

14 BY MR. BLOCK:

15 Q Have you tried to have your analysis published 11:01:25
16 anywhere?

17 A The analysis is being presented at UNK Student
18 Research Day Thursday of next week. After
19 presentation, the student author and I will probably
20 explore publication opportunities. 11:01:39

21 BY MR. BLOCK:

22 Q All right. But you haven't so far?

23 A No, I have not submitted it for publication
24 yet.

25 Q Okay. You've been writing on this topic in 11:01:46

1 the form of white papers and expert reports for over
2 two years now; right?

3 A That is correct.

4 Q Have you ever attempted to submit any of your
5 analysis for publication? 11:02:02

6 A I have not submitted these papers for
7 publication.

8 Q But your -- have you ever, like, tried to
9 submit your research on this topic in -- in general for
10 publication? 11:02:18

11 MR. FRAMPTON: Objection; form.

12 THE WITNESS: So in general, do you mean
13 differences between boys and girls?

14 BY MR. BLOCK:

15 Q I mean on the participation of transgender 11:02:27
16 girls and women.

17 A So as stated in my declaration, I have the
18 Physiology Educator (sic) Community of Practice blog
19 post that I have written, that was reviewed prior to
20 being published on the web, and I have the presentation 11:02:43
21 I made at the American Physiological Society Sex and
22 Gender conference.

23 Q Okay. Anything else?

24 A Those are the only two that I can remember
25 that I have put out for public dissemination. 11:02:58

1 Q Okay. And were -- were either of those two
2 examples peer reviewed?

3 A They were both peer reviewed.

4 Q Okay. Have you had -- well, we'll look at --
5 we'll look at those in -- in a minute, but there's no 11:03:16
6 other example of you attempting to submit work on this
7 topic to a peer-reviewed publication?

8 A I have reached out to a journal editor about a
9 possible letter to the editor, but the journal said
10 they don't publish letters to the editor. 11:03:40

11 Q Okay. Why didn't you attempt to have your
12 white paper, you know, published by a peer-reviewed
13 journal?

14 A Well, quite honestly, because Emma Hilton,
15 Tommy Lundberg, Joanna Harper and FIMS have all already 11:03:59
16 published on this and have done a pretty good job
17 reviewing the literature, so I'm not sure that another
18 review of the literature is going to add to the
19 scholarly knowledge.

20 Q What did the letter to the editor that you 11:04:12
21 wanted to write say?

22 A I just asked the editor if they would accept a
23 letter regarding the participation of trans women in
24 women's sports.

25 Q What publications was that? 11:04:27

1 A I cannot remember if it was Medicine & Science
2 in Sports & Exercise or the Journal of Strength and
3 Conditioning Research.

4 Q Okay. And did you say what the letter would
5 opine about? 11:04:43

6 A No.

7 MR. FRAMPTON: Objection; form.

8 THE WITNESS: Sorry.

9 I just asked if they would accept a letter on
10 the topic. 11:04:52

11 BY MR. BLOCK:

12 Q Okay. Are you aware of any studies that
13 specifically examine the athletic performance of
14 prepubertal transgender girls?

15 MR. FRAMPTON: Objection; form. 11:05:07

16 THE WITNESS: I am not aware of any studies
17 evaluating the performance of prepubertal biological
18 gir- -- biological boys competing in girls' sports.

19 BY MR. BLOCK:

20 Q Okay. So let's -- we agreed before that if I 11:05:18
21 say the term, you know, "trans girls," you understand
22 what I'm saying; right?

23 A Yes. I just am speaking to make sure I'm
24 clear to myself in what I'm saying.

25 Q Okay. So, you know, I -- I understand that 11:05:31

1 there's physical fitness data on -- on prepubertal boys
2 versus prepubertal girls, and my question is, are you
3 aware of any data that specifically breaks out
4 prepubertal trans girls and reports on their
5 performance? 11:05:53

6 A I am not aware of any data analyzing trans
7 girls.

8 Q Okay. So are you aware of any data comparing
9 the performance of prepubertal trans girls to
10 prepubertal cis girls? 11:06:12

11 A I am not aware of any research on that topic.

12 Q Okay. If you could turn to page -- sorry --
13 paragraph 114 of your report again.

14 A Yes, paragraph 114, page 37.

15 Q Okay. I have to pull it up, too. 11:06:38

16 All right. And it -- it continues from page
17 37 to 38. You say (as read):

18 "While boys exhibit some performance
19 advantages even before puberty, it is
20 both true and" -- 11:06:52

21 Sorry, my -- my PDF -- I'll read this again
22 for the record. I apologize. (As read):

23 "While boys exhibit some performance
24 advantages even before puberty, it is
25 both true and well known to common 11:07:03

1 experience that the male advantage
2 increases rapidly, and becomes much
3 larger, as boys undergo puberty and
4 become men. Empirically, this can be
5 seen by contrasting the modest 11:07:17
6 advantages reviewed immediately above
7 against the large performance
8 advantages enjoyed by men that I have
9 detailed in Section II."

10 Did I read that right? 11:07:26

11 A It sure seemed like you read it word for word.

12 Q All right. Thanks, I did my best.

13 So even though you contend that boys have a
14 performance advantage before puberty, you believe those
15 advantages are modest when compared with the large 11:07:41
16 performance advantages resulting from puberty?

17 MR. FRAMPTON: Objection; form.

18 THE WITNESS: Yes, they are smaller than the
19 advantages that occur after puberty.

20 BY MR. BLOCK: 11:07:55

21 Q Okay. And -- and "modest" was your word;
22 right?

23 A Yes, "modest" was my word.

24 Q Okay. And do you think it's unfair for
25 prepubertal boys and girls in elementary school to -- 11:08:11

1 to play on coed or mixed teams?

2 MR. FRAMPTON: Objection; form, scope.

3 THE WITNESS: Before puberty, boys have
4 athletic advantages compared to girls.

5 BY MR. BLOCK: 11:08:29

6 Q Do you think it's unfair for prepubertal boys
7 and girls in elementary school to play on coed or mixed
8 teams?

9 MR. FRAMPTON: Same objections.

10 THE WITNESS: I really haven't been retained 11:08:38
11 as an expert witness to state fair or unfair in this
12 matter as much as to provide the information and allow
13 the policymakers to determine fair versus unfair.

14 BY MR. BLOCK:

15 Q Okay. So you're not, in your expert report, 11:08:50
16 providing an opinion on whether it's fair for trans
17 girls and women to compete on women's sports teams; is
18 that right?

19 MR. FRAMPTON: Objection; form and scope.

20 Go ahead. 11:09:05

21 THE WITNESS: In my expert report, I have done
22 my best to focus on the known biological differences
23 between males and females, how those known biological
24 differences gives male an athletic advantage and how
25 that athletic advantage is not erased by a transgender 11:09:17

1 identity or the use of puberty blockers, gender --
2 transgender hormones.

3 BY MR. BLOCK:

4 Q Okay. So you don't provide an expert opinion
5 on whether the goals of fairness, safety and 11:09:30
6 transgender inclusion are reconcilable?

7 MR. FRAMPTON: Objection; form.

8 THE WITNESS: If I recall correctly, I think I
9 quote a source or two that state on that or perhaps
10 paraphrase a source or two on what has been stated on 11:09:49
11 that.

12 BY MR. BLOCK:

13 Q Okay. So -- so just to clarify the scope of
14 the opinions you're offering, you are not presenting an
15 expert opinion on whether it is fair or unfair for 11:09:57
16 girls and women who are transgender to participate on
17 girls and women's sports teams; correct?

18 MR. FRAMPTON: Objection; form.

19 THE WITNESS: I have tried to focus on the
20 biological differences and how those differences 11:10:16
21 provide male advantages and how those differences are
22 not erased due to transgender identity or
23 gender-affirming hormone therapy. I have tried to not
24 give an opinion on fair versus unfair.

25 ///

1 BY MR. BLOCK:

2 Q Okay. And, you know, I apologize for being
3 persnickety in the phrasing of the question, but I want
4 to make sure that -- that -- that you're not answering
5 about what you're focusing on. I want to know whether 11:10:45
6 any evidence is going to be submitted in the form of an
7 expert opinion by you regarding fairness of girls and
8 women who are transgender participating in -- in girls
9 and women's sports.

10 So I'm just going to ask it again, and I would 11:11:05
11 just appreciate a "yes" or "no" answer, if you're
12 capable of giving it.

13 Are you providing an expert opinion in this
14 case regarding whether it is fair or unfair for girls
15 and women who are transgender to compete on girls and 11:11:18
16 women's sports teams?

17 MR. FRAMPTON: Objection; form, scope.

18 Go ahead.

19 THE WITNESS: I don't think I can answer that
20 as a yes-or-no question because the information 11:11:30
21 demonstrates that there's an advantage for biological
22 males. And so then we come to a question of fair,
23 which is a very challenging metaphysical question that
24 I would prefer others address.

25 ///

1 BY MR. BLOCK:

2 Q So you -- you are not an expert on whether it
3 is fair or unfair for girls and women who are
4 transgender to participate on girls and women's sports
5 teams?

11:12:01

6 MR. FRAMPTON: Objection; form.

7 THE WITNESS: I'm not a sports philosopher in
8 whom that field would fall into.

9 BY MR. BLOCK:

10 Q Right. Therefore, you are not providing an
11 expert opinion on whether it is fair or unfair for
12 girls and women who are transgender to participate on
13 girls and women's sports teams?

11:12:15

14 MR. FRAMPTON: Same objection.

15 THE WITNESS: As I've said, I've done my best
16 to try and stick to the data and not give my opinion on
17 what is fair or unfair.

11:12:25

18 BY MR. BLOCK:

19 Q I'm sorry, Dr. Brown, this -- this really
20 should be like a -- a simple question. Because when
21 you say "focus" and "I've tried to," that -- that's
22 just not answering my question. I just really need a
23 question (sic) on whether evidence is going to be
24 submitted in this case, from you, in the form of an
25 expert opinion under Federal Rules of Evidence 702 on

11:12:35

11:12:50

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1 whether or not it is fair or unfair for girls and women
2 who are transgender to participate.

3 Regardless of whether it's your focus,
4 regardless of whether you're trying -- what you're
5 trying or not trying to do, I just need a "yes" or "no" 11:13:07
6 answer on whether you are providing an expert opinion
7 on the topic of fairness.

8 MR. FRAMPTON: Same objection.

9 THE WITNESS: So would you allow me a few
10 minutes to review the conclusions to my declaration? 11:13:21
11 Because I don't want to say something that is
12 contradictory to what I have said in what is submitted
13 as an expert declaration.

14 MR. BLOCK: All right. We can -- we can go
15 off the record, if you would like to do that right now. 11:13:38

16 Does counsel want to go off the record?

17 MR. FRAMPTON: No, we don't need to go off the
18 record. If he wants to review something, he can review
19 it.

20 MR. BLOCK: Well, I'm not taking time out from 11:13:47
21 the deposition for him to review what -- what his
22 expert opinions are in -- in this case.

23 So, you know, if he wants to do it during a
24 break, you know, you're welcome to, but you're not
25 using my deposition time to answer a simple question. 11:14:00

1 I mean, this witness should know what he's
2 providing an expert opinion on, so --

3 MR. FRAMPTON: And I think he's told you about
4 three times now, but again, I don't need to argue that
5 on the record.

11:14:13

6 BY MR. BLOCK:

7 Q But you know you're not providing an expert
8 opinion on whether it's fair or unfair for prepubertal
9 girls and boys in elementary school to play on coed or
10 mixed sports teams?

11:14:28

11 A I think I've already answered that question
12 with my statement about focusing on what the science is
13 saying on who has advantages.

14 Q All right. Are you qualified to offer an
15 expert opinion on fairness?

11:14:39

16 MR. FRAMPTON: Objection; form.

17 THE WITNESS: Who is a qualified expert to
18 offer an opinion on fairness?

19 BY MR. BLOCK:

20 Q I don't know. Are you?

11:14:53

21 MR. FRAMPTON: Same objection.

22 Go ahead.

23 THE WITNESS: I think I can offer fairness as
24 far as my understanding of what the policies and
25 procedures are that are set to determine what is fair

11:15:08

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1 in sports.

2 BY MR. BLOCK:

3 Q Your personal opinion; right?

4 MR. FRAMPTON: Same objection.

5 THE WITNESS: No. For instance, there are a 11:15:27

6 lot of policies that specify the -- that use of

7 performance-enhancing substances are unfair, in which

8 that is something that I would teach in my sports -- my

9 sport nutrition class. Since I'm teaching it in a

10 class, I've been judged by my peers to be an expert on 11:15:41

11 that.

12 BY MR. BLOCK:

13 Q Okay. But are you qualified to offer an

14 expert opinion on whether it's fair or unfair for girls

15 and women who are transgender to compete in women's 11:15:50

16 sports?

17 MR. FRAMPTON: Same objection.

18 THE WITNESS: Am I qualified? Well, the

19 policies state that it is not fair. And so if I am

20 following the policy, I suppose I am an expert in that. 11:16:02

21 BY MR. BLOCK:

22 Q I don't understand what that means.

23 A So when I teach in my classes, in my field, in

24 my expertise, quite often we discuss and teach about

25 the policies on what is fair participation or unfair 11:16:20

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1 participation. Since I'm teaching it and I'm judged by
2 my peers as an expert in it, then I would say I can
3 give an expert opinion on it.

4 Q Who -- who are -- who -- who judges you as
5 quali- -- what peers judge you as qualified to -- to 11:16:40
6 give an expert opinion on whether it's fair for girls
7 and women who are transgender to compete in girls and
8 women's sports?

9 A Well, my -- again, I've been accepted by my
10 peers as an expert to present on this topic, on the 11:16:59
11 participation and the physiological effects of
12 transgender individuals.

13 Q Right. My question was about fairness.

14 Have you been -- who, among your peers, have
15 said that you are qualified to opine on the fairness of 11:17:16
16 the participation of girls and women who are
17 transgender in -- in girls and women's sports?

18 A My colleagues at the university I work at,
19 administrators at the university I work at, they honor
20 my opinion. 11:17:35

21 Q I thought that your opinion in this matter
22 just reflects your own views, not the views of the
23 university; is that right?

24 A That is correct.

25 Q Okay. So what do you mean by -- when you say 11:17:43

1 that the university honors your opinion?

2 A They allow me to express my opinion, and they
3 recognize that it falls within my discipline and my
4 field and the scope of my professional expertise.

5 Q How did they recognize that? 11:18:03

6 A They've told me.

7 Q Who has told you?

8 A The athletic director, the -- one of the
9 senior vice chancellors, I can't remember her full
10 title, another one of the vice chancellors for academic 11:18:24
11 and student affairs.

12 Q Has any --

13 A Along -- along with some of my colleagues in
14 the department.

15 Q Did the university tell you to testify in this 11:18:32
16 case?

17 A The university did not tell me to or not to
18 testify in this case.

19 Q Okay. Did any of the -- your -- your
20 colleagues that honor your opinions, are any of them 11:18:43
21 experts in fairness?

22 MR. FRAMPTON: Objection; form.

23 THE WITNESS: Well, one of them is a -- I
24 guess his area would be sports sociology and sports
25 psychology and does a lot of work in the area of 11:19:03

1 policies and procedures for sports, so I would say that
2 he's probably an expert in fairness.

3 BY MR. BLOCK:

4 Q Have you been invited by any sort of
5 professional policymaking organizations to participate 11:19:15
6 in crafting policies?

7 A No, I have not.

8 Q Okay. Do you know whether West Virginia has
9 any laws or policies regarding sex-separated sports for
10 prepubertal children? 11:19:43

11 MR. FRAMPTON: Objection; form.

12 THE WITNESS: My understanding of the law that
13 we're meeting about now does specify that you
14 participate in sports based on biological sex.

15 BY MR. BLOCK: 11:19:57

16 Q Do you -- do you know whether West Virginia
17 has any laws or policies regarding the participa- --
18 let me say this again.

19 Do you know whether West Virginia has any laws
20 or policies regarding sex-separated sports in 11:20:13
21 elementary school?

22 MR. FRAMPTON: Objection; form.

23 THE WITNESS: If I recall correctly, this law
24 applies to elementary school.

25 ///

1 BY MR. BLOCK:

2 Q Would your opinions in this case change if you
3 were to learn that the law doesn't apply to elementary
4 school?

5 MR. FRAMPTON: Objection to form. 11:20:36

6 THE WITNESS: No, my opinion would not change
7 because there are biological differences between males
8 and females that give males an inherent athletic
9 advantage.

10 BY MR. BLOCK: 11:20:45

11 Q Do you think it's reasonable for a state to
12 say that it wants sex-separated teams beginning in
13 middle school, but not in elementary school?

14 MR. FRAMPTON: Objection; form.

15 THE WITNESS: I think it is reasonable since 11:21:06
16 most of the time younger children's leagues are
17 considered developmental and the children are not
18 competing for prizes or honors. A lot of times that
19 competition begins in middle or high school.

20 MR. BLOCK: Okay. That -- that's a great 11:21:24
21 lead-in to the next exhibit. So if you would give me a
22 second to make that happen.

23 (Exhibit 69 was marked for identification
24 by the court reporter and is attached hereto.)

25 ///

1 BY MR. BLOCK:

2 Q All right. Soon appearing in your folder will
3 be a document marked Exhibit 69. Let me know when
4 that's available.

5 Do you see it? 11:22:09

6 A Exhibit 69, Briefing Book, WSPWG?

7 Q Yes. And you cite to this document in your
8 report; right?

9 A Yes, I think I do.

10 Q Okay. Great. 11:22:21

11 If you could turn to footnote 2, I believe,
12 footnote 2, page 8 of the document.

13 Can you let me know when you get to that?

14 A Footnote 2, page 8 starts off with the word
15 "endocrinologists." 11:22:51

16 Q Yes.

17 A Yes.

18 Q Okay. If you look at what that footnote 2,
19 like, refers to, in the third paragraph, beginning with
20 "at the same time." 11:23:05

21 Do you see in the text "at the same time"?

22 A Sorry.

23 Q Yeah. Sure. The third paragraph from the top
24 of the page begin- --

25 A Oh, sorry. Sorry. Yes, I've got it. 11:23:19

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1 Q Yeah. The second sentence of that paragraph,
2 it says (as read):

3 "Because the onset of male puberty –
4 normally around ages 11 - 12 in boys –
5 is the physical justification for 11:23:30
6 separate sex sport..."

7 And then that's what triggers the footnote 2;
8 correct?

9 A Yes.

10 Q Okay. And then footnote 2 says (as read): 11:23:39

11 "Endocrinologists explain that puberty
12 in boys should start between ages 9-13
13 and in girls between ages 8-12; that
14 puberty usually takes 4-5 years to
15 complete so that 95% of boys will have 11:23:53

16 started puberty by age 13. This
17 timing is consistent with the formal
18 position of the Women's Sports
19 Foundation providing that '[p]rior to
20 puberty, females and males should 11:24:05
21 compete with and against each other on
22 coeducational teams.'"

23 Did I read that correctly?

24 A Yes, you read that correctly.

25 Q Okay. And then it cites to a document from 11:24:21

1 the Women's Sports Foundation; correct?

2 A Yes.

3 Q Did you read that document?

4 A I cannot recall specifically if I've read that
5 or not. I think I probably did, but I can't recall. 11:24:29

6 Q Okay. And so you understand that it's the
7 position of the Women's Sports Foundation that prior to
8 puberty, females and males should compete with and
9 against each other on coeducational teams?

10 A Well, that is what is stated in this document. 11:24:51

11 Q Okay. Do you feel like you -- do you feel
12 that you are qualified to offer an expert opinion on
13 the fairness of elementary school kids participating on
14 coeducational teams?

15 MR. FRAMPTON: Objection; form. 11:25:08

16 THE WITNESS: I think I can offer information
17 on the differences in -- the -- the biological
18 differences between boys and girls and how that gives
19 boys an advantage in athletics.

20 BY MR. BLOCK: 11:25:23

21 Q Do you think the Women's Sports Foundation is
22 a better source of information than you on what
23 benefits prepubertal girls in athletic participation?

24 MR. FRAMPTON: Objection; form.

25 THE WITNESS: Can you rephrase that question? 11:25:40

1 BY MR. BLOCK:

2 Q Yeah, yeah.

3 Who -- who -- who do you think is a better
4 source of authority on -- on -- on -- on what is in the
5 best interest of prepubertal girls when it comes to 11:25:53
6 athletics, you or the Women's Sports Foundation?

7 MR. FRAMPTON: Objection; form.

8 THE WITNESS: I think this may be a situation
9 where I don't agree with the Women's Sports Foundation.

10 BY MR. BLOCK: 11:26:08

11 Q Okay. If you go back to -- to your report, on
12 page 4, page 4 of your report. It's not in numbered
13 paragraphs yet. And this is Exhibit 64, I believe.

14 A Okay. Page 4 where I have "Overview"?

15 Q Yes. 11:26:59

16 A All right.

17 Q In the first bullet point, you say (as read):
18 "At the level of (a) elite, (b)
19 collegiate, (c) scholastic, and (d)
20 recreational competition, men, 11:27:10
21 adolescent boys, or male children,
22 have an advantage over equally aged,
23 gifted, and trained women, adolescent
24 girls, or female children in almost
25 all athletic events." 11:27:19

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1 Is that right?

2 A That is correct.

3 Q Okay. So do you think that -- that
4 prepubertal boys and prepubertal girls should not be
5 playing in competition with each other in recreational 11:27:34
6 events?

7 MR. FRAMPTON: Objection; form.

8 THE WITNESS: I think if they are competing
9 for prizes, for awards, the boys have an advantage.

10 BY MR. BLOCK: 11:27:45

11 Q And, therefore, they should not be competing
12 against each other for prizes and awards?

13 MR. FRAMPTON: Objection; form, scope.

14 THE WITNESS: I would say that if we are --
15 yeah, the boys should not be competing against the 11:28:06
16 girls if they're competing for prizes and awards.

17 BY MR. BLOCK:

18 Q Do you think that in the case of transgender
19 girls and women after puberty, do you think they should
20 not be allowed to play on recreational teams with 11:28:24
21 cisgender girls and women?

22 MR. FRAMPTON: Objection; form, scope.

23 THE WITNESS: I have concerns about the safety
24 of cisgender girls and women competing against
25 biologically male -- sorry -- trans women. 11:28:45

1 BY MR. BLOCK:

2 Q Do you think that cisgender girls and women
3 should be allowed to play on football teams with
4 biological boys?

5 MR. FRAMPTON: Objection; form, scope. 11:29:00

6 THE WITNESS: If the girls are informed of the
7 risks, then the girls should be able to make an
8 informed choice on that matter.

9 BY MR. BLOCK:

10 Q So you don't think it's the -- the -- safety 11:29:13
11 reasons should prohibit cisgender girls and women from
12 playing football with cisgender boys?

13 MR. FRAMPTON: Same objection.

14 THE WITNESS: If the girls would like to play
15 on the boys' team and they and their parents make an 11:29:28
16 informed choice that they're willing to accept those
17 risks, then I think that is up to them to choose.

18 BY MR. BLOCK:

19 Q Okay. And -- and do you think that cisgender
20 girls and women should be allowed to play on wrestling 11:29:42
21 teams with cisgender boys and men?

22 MR. FRAMPTON: Same objection.

23 THE WITNESS: I would say the same statement,
24 if they are aware of the inherent risks and recognize
25 the advantages that males have, they can make that 11:29:56

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1 choice.

2 BY MR. BLOCK:

3 Q Going back to recreational competition, do you
4 think that transgender girls and women should not be
5 allowed to play recreational sports on girls and 11:30:07
6 women's teams if the sport is a noncontact or collision
7 sport?

8 MR. FRAMPTON: Same objection.

9 THE WITNESS: If it is a women's league, then
10 that should be limited to biological women. 11:30:25

11 BY MR. BLOCK:

12 Q Even if they're not competing for prizes?

13 MR. FRAMPTON: Same objection.

14 THE WITNESS: Can I walk through this for just
15 a minute? 11:30:37

16 BY MR. BLOCK:

17 Q Sure.

18 A Oh. So if women are signing up for a women's
19 recreational league, I think they do so with the
20 expectation they will be playing -- and even if it's 11:30:47
21 not competing for prizes, but they are competing --
22 with other women. And so introducing a trans woman is
23 not fair to the women that have said that they are
24 competing against biological women.

25 Q Why isn't it fair if they're not competing for 11:31:04

1 prizes?

2 MR. FRAMPTON: Same objection.

3 THE WITNESS: Well, if they are competing --

4 even if it's not prizes, they are competing.

5 BY MR. BLOCK: 11:31:21

6 Q What if they're just -- just participating

7 together for recreational purposes?

8 MR. FRAMPTON: Objection; form.

9 THE WITNESS: Then I think that the cisgender

10 women still need to be fully informed of whether there 11:31:38

11 will be trans women or not, and then they could make

12 their choice on a recreational pickup game type of

13 play.

14 BY MR. BLOCK:

15 Q Okay. If -- how about riflery, should 11:31:47

16 transgender girls and women be allowed to play on a

17 recreational riflery league with cisgender girls and

18 women?

19 MR. FRAMPTON: Objection; form and scope.

20 THE WITNESS: Once again, if they are just out 11:32:14

21 shooting for fun and they're not competing and the

22 recognition is that it is not exclusively a women's

23 event. All of those need to be considered.

24 BY MR. BLOCK:

25 Q Do you think transgender girls and women have 11:32:28

1 an athletic advantage over cisgender girls and women
2 when it comes to riflery?

3 MR. FRAMPTON: Objection; form and scope.

4 THE WITNESS: Yes, I do think that transgender
5 girls and women have an advantage over cisgender girls 11:32:41
6 and women because you still have to hold the rifle, you
7 still have to feel the recoil, and a larger individual
8 will have less felt recoil.

9 BY MR. BLOCK:

10 Q So in terms of recreational activities, if a 11:33:16
11 policy said that transgender girls and women can't
12 compete in, you know, championship competition but can
13 compete on recreational teams with cisgender girls and
14 women and that policy is well known, is it your
15 position that transgender girls and women should still, 11:33:43
16 you know, not be allowed to compete on the -- to
17 participate on those recreational teams with cisgender
18 girls and women?

19 MR. FRAMPTON: Objection; form and scope.

20 THE WITNESS: It's kind of a long, complicated 11:33:57
21 question. Can you simplify it for me?

22 BY MR. BLOCK:

23 Q Well, your -- your answer on recreational
24 teams was that you want the cisgender people to be
25 informed that a transgender person might be there. 11:34:12

1 So my question is, assuming that they're
2 informed, do you still think that transgender girls and
3 women should not be allowed to participate on
4 recreational teams with cisgender girls and women?

5 MR. FRAMPTON: Objection; form, scope. 11:34:27

6 THE WITNESS: So if the governing policies for
7 that recreational league indicate that transgender
8 girls and women can compete there and if it doesn't
9 violate some type of law that would regulate the
10 funding for that recreational league and if the 11:34:36
11 women -- if everyone is fully informed of who they will
12 be playing with in this recreational league, then that
13 would be okay for the trans women to participate in
14 that league.

15 BY MR. BLOCK: 11:34:59

16 Q But you think that the cisgender girls and
17 women would need to be specifically notified that there
18 is an identifiable trans participant on the team as
19 opposed to just knowing that as a matter of policy
20 there might be one? 11:35:15

21 MR. FRAMPTON: Same objection.

22 THE WITNESS: My experience tells me that a
23 lot of women would like to know that.

24 BY MR. BLOCK:

25 Q Why? 11:35:23

1 A Because --

2 MR. FRAMPTON: Same objection.

3 Go ahead.

4 THE WITNESS: Because they want to know who
5 they're competing against and because of our 11:35:29
6 longstanding policy of sex-segregated sports, they want
7 to know if they're playing on a coed team or a
8 sex-segregated team.

9 BY MR. BLOCK:

10 Q When you say your experience tells you that 11:35:42
11 women would like to know that, what experience?

12 A Talking with friends and family members,
13 students, colleagues, those types of things.

14 MR. BLOCK: So I -- I am going to another
15 section. I'm happy to continue going, unless you need 11:36:13
16 a -- a break.

17 THE WITNESS: I need a bathroom break.

18 MR. BLOCK: Sure. See you in five minutes.

19 THE WITNESS: All right. Thanks.

20 THE VIDEOGRAPHER: We are off the record at 11:36:24
21 11:36 a.m.

22 (Recess.)

23 THE VIDEOGRAPHER: We are on the record at
24 11:47 a.m.

25 MR. BLOCK: Great. 11:47:20

1 BY MR. BLOCK:

2 Q Dr. Brown, during the break, did you have a
3 chance to review your expert report to determine
4 whether you're offering an opinions on fairness?

5 MR. FRAMPTON: Objection; form. 11:47:30

6 THE WITNESS: I didn't take advantage of that
7 time to look at that.

8 MR. BLOCK: Okay. I'm going to mark another
9 exhibit here. So this -- this exhibit, which will
10 appear shortly, is going to be marked as Exhibit 70. 11:47:58

11 (Exhibit 70 was marked for identification
12 by the court reporter and is attached hereto.)

13 BY MR. BLOCK:

14 Q Please let me know when it's up on your
15 screen. 11:48:05

16 A All right. Exhibit 70, 070 - 2021.

17 Q Yes. Can you tell me -- well, first of all,
18 have you ever seen this document?

19 A You know, I can't promise that I have seen
20 this document. 11:48:38

21 Q Okay. What does -- this is a document -- I've
22 got to scroll back up to page 1 of this document
23 myself.

24 This document is a transcript of hearings
25 in -- in the Pennsylvania house of representatives on 11:48:56

1 H.B. 972, Fairness in Women's Sports Act.

2 Is that -- do you agree that's what this
3 document appears to be?

4 A Yes, that appears to be a transcript of a
5 hearing on that. 11:49:14

6 Q Okay. And that hearing was on August 4th,
7 2021; correct?

8 A That's what it says.

9 Q Okay. And do you remember providing testimony
10 as part of this hearing? 11:49:24

11 A I do remember providing testimony for that.

12 Q Okay. Terrific.

13 If you can go to page 15.

14 A Sorry. It's loading slowly. As I scroll, I
15 have to wait for the page to load. 11:49:54

16 Q Yeah. No, I -- I appreciate that.

17 A Okay. Page 15?

18 Q Yes.

19 A Starts off "Biological sex confers"?

20 Q Yeah. 11:50:03

21 A Okay.

22 Q "Biological" -- I'm just going to read it into
23 the record. (As read):

24 "Biological sex confers inherent

25 athletic advantages to human males 11:50:09

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1 compared to human females such that
2 even before puberty, males have
3 10 percent more muscle mass, less body
4 fat, larger hearts and lungs, denser
5 bones, and other anatomical and 11:50:20
6 physiological traits that give males
7 inherent athletic advantages over
8 comparably aged and trained females."

9 Did I read that right?

10 A Yes. 11:50:31

11 Q And do you recall giving that testimony?

12 A Yes.

13 Q Is it true that -- that prepubertal boys have
14 denser bones than prepubertal girls?

15 A I would need to look back at my research 11:50:50
16 that -- you know, the papers that I've read to see on
17 that.

18 Q Okay. Is it -- is it true that prepubertal
19 boys have larger hearts and lungs than prepubertal
20 girls? 11:51:01

21 A They have larger lungs. And again, I would
22 want to refer back to my research on the larger hearts.

23 Q Okay. Now, if you go to page 16.

24 A Okay.

25 Q Actually, go to page 17, line 3. 11:51:31

1 You say (as read):

2 "And a male to female individual will
3 never experience nor need to learn how
4 to cope with menstrual-cycle
5 challenges, whereas 50 to 71 percent
6 of female athletes expressed concerns
7 that their menstrual cycle may
8 influence their physical performance."

11:51:49

9 Did I read that right?

10 A Yes, you did.

11:52:03

11 Q So is it your testimony that one advantage
12 that transgender girls and women have over cisgender
13 girls is that they don't have to worry about their
14 menstrual-cycle concerns?

15 MR. FRAMPTON: Objection to the form and
16 scope.

11:52:09

17 Go ahead.

18 THE WITNESS: Yes, that is what I said in this
19 situation in Philadelphia.

20 BY MR. BLOCK:

11:52:16

21 Q Okay. Do you --

22 A Sorry, Harrisburg.

23 Q Okay. Are you offering that opinion in this
24 case?

25 A I did not include that opinion in my written

11:52:23

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1 statement for this case.

2 Q Okay. Are you offering that opinions now in
3 this case?

4 A I would offer that opinions now.

5 Q Okay. And -- so do you think that cisgender 11:52:33
6 girls who are not menstruating have an advantage over
7 cisgender girls who do menstruate?

8 MR. FRAMPTON: Objection; form, scope.

9 THE WITNESS: So the research regarding the
10 effects of the menstrual cycle on athletic performance 11:52:53
11 are very difficult and very confusing and some
12 instances so -- show that phase of the menstrual cycle
13 influence a performance, some do not.

14 But as I stated there, depending on which
15 survey you're looking at, 50 to 71 percent of female 11:53:11
16 athletes are concerned that their menstrual cycle will
17 negatively impair their performance.

18 BY MR. BLOCK:

19 Q Okay. Do you think we should have separate
20 teams for girls and women who menstruate and girls and 11:53:22
21 women who don't?

22 MR. FRAMPTON: Same objection.

23 THE WITNESS: No, I do not.

24 BY MR. BLOCK:

25 Q Why not? 11:53:36

1 A Because they're all biologically female.

2 Q Even though some of them would have the
3 advantage of not having to worry about their menstrual
4 cycle; is that right?

5 MR. FRAMPTON: Same objection. 11:53:46

6 THE WITNESS: Again, what -- can you please
7 rephrase that?

8 There were some questions -- some statements
9 in there that were more absolute than I'm comfortable
10 answering. 11:54:00

11 BY MR. BLOCK:

12 Q Okay. So despite the fact that cisgender
13 girls and women who don't menstruate don't have to
14 worry about how their menstrual cycle will affect
15 athletic performance, you think that it's still fair 11:54:13
16 for girls and women who menstruate to participate on
17 the same sports teams as girls and women who don't
18 menstruate; correct?

19 MR. FRAMPTON: Objection; form and scope.

20 THE WITNESS: So when you're talking about 11:54:30
21 menstruate, I want to make sure we're on the same page
22 here.

23 Do you mean they have lost having their
24 menstrual cycle?

25 ///

1 BY MR. BLOCK:

2 Q I -- you know, I -- some -- that -- that could
3 be one thing. Some -- some girls and women who are cis
4 don't have a menstrual cycle.

5 So for whatever reason, a cisgender girl and 11:54:58
6 women who do not menstruate, should they be playing on
7 different teams from girls and women who do menstruate?

8 MR. FRAMPTON: Objection; form and scope.

9 THE WITNESS: So loss of the menstrual cycle
10 is generally a negative connotation for a woman in 11:55:15
11 terms of athletic performance. It would indicate
12 somewhere progressing on the female athlete triad. And
13 so they're still biological women. They should still
14 be on the women's team.

15 BY MR. BLOCK: 11:55:39

16 Q So is it really relevant one way or another
17 whether or not someone is menstruating to their
18 athletic performance?

19 MR. FRAMPTON: Same objection.

20 THE WITNESS: Again, 50 to 71 percent of 11:55:47
21 female athletes are concerned that their menstrual
22 cycle will influence their physical athletic
23 performance.

24 BY MR. BLOCK:

25 Q So is it relevant to their athletic 11:56:01

1 performance whether or not someone is menstruating?

2 MR. FRAMPTON: Same objection.

3 THE WITNESS: For some women, it is. For some
4 women, it is not.

5 BY MR. BLOCK: 11:56:21

6 Q In your report, you refer, several times, to
7 something called "puberty blockers"; right?

8 A Yes.

9 Q Okay. So I want to make sure that we're using
10 the same terminology when we're using that phrase. 11:56:34

11 When I use the phrase "puberty blockers," I'm
12 referring to gonadotropin-releasing hormone analogues.

13 Is that consistent with your understanding of
14 the term "puberty blockers"?

15 A I know the gonadotropin-releasing hormone. I 11:56:53
16 cannot remember if the word is "analogues" or
17 "antagonists" or "agonists."

18 Q Okay. So GR- --

19 A GnR- -- yes.

20 Q I'm sorry, can you say that again? 11:57:06

21 A Yeah. G-N-R-H-As. And again --

22 Q So --

23 A -- I cannot remember specifically what the A
24 stands for.

25 Q So -- so it's your understanding that the term 11:57:13

1 "hormone blockers" refers to GnRH'a's; correct?

2 A Puberty blockers.

3 Q Sorry. Puberty blockers.

4 It's your understanding that the term "puberty

5 blocker" refers to the GnRH'a's; correct? 11:57:27

6 A That is correct.

7 Q Okay. Great.

8 If we go to paragraph 110 of your report --

9 again, that's Exhibit 64. Let me know when you're --

10 when you get there. 11:57:39

11 A Paragraph 110 is what I'm headed for?

12 Q Yep.

13 A All right. Paragraph 110, page 36.

14 Q Great. So in paragraph 110, you say -- if you
15 go, like -- one, two, three, four -- five lines down, 11:58:18

16 after the parenthetical number 9, you say (as read):

17 "While it is outside my expertise, my

18 understanding is that current practice

19 with regard to administration of

20 puberty blockers is similar in the 11:58:33

21 United States."

22 I think you're referring to as in the UK; is

23 that correct?

24 A Yes.

25 Q Okay. And then you say (as read): 11:58:43

1 "Tanner stages 2 and 3 generally
2 encompass" --
3 You say "an range," but I think you mean "a
4 range" -- sorry -- "a age range" -- no, I messed that
5 up. I'll say that again. I apologize for inserting an 11:59:00
6 error into your -- your sentence.

7 You say (as read):
8 "Tanner stages 2 and 3 generally
9 encompass an age range from 10 to 14
10 years old, with significant 11:59:07
11 differences between individuals."

12 And then you go on to say that you're not
13 aware of research directly addressing the implications
14 for athletic capability of the use of puberty blockers.

15 So, you know, my question is, when you wrote 11:59:24
16 that paragraph, did you think it -- did you consult the
17 Endocrine Society guidelines that we had previously
18 discussed?

19 MR. FRAMPTON: Objection to form.

20 THE WITNESS: I cannot recall if I 11:59:45
21 specifically looked at the Endocrine Society guidelines
22 as I was writing that. As I -- as I said, "as I
23 recall," I think, is the wording I used.

24 BY MR. BLOCK:

25 Q Okay. Did you make any effort to determine 11:59:57

1 what the -- the practice in the United States is with
2 regard to administering puberty blockers?

3 MR. FRAMPTON: Objection; form.

4 Go ahead.

5 THE WITNESS: Well, there's the 12:00:13
6 Endocrine Society guidelines, but those are not

7 specific to the United States, if I recall, and so I --

8 BY MR. BLOCK:

9 Q Right.

10 A -- don't know of a specific United States 12:00:22
11 policy compared to the UK policy. I think it's more of
12 a this is the policy.

13 Q Yeah, got it.

14 But did you make any effort to determine what
15 the practice is in the United States? 12:00:35

16 A I'm -- yes, I know I did look into it.

17 Q How? How did you look into it?

18 A Reading scholarly literature on the topic to
19 see what it says. Looking at web pages on the topic.

20 Q So -- so you read scholarly literature and web 12:00:57
21 pages on the topic and you couldn't determine whether
22 the practice in the United States is to administer
23 puberty blockers at Tanner II versus Tanner III?

24 MR. FRAMPTON: Objection; form.

25 THE WITNESS: As I said there, my -- that is 12:01:16

1 outside my scope of my expertise, and so I don't want
2 to be construed as saying this is the policy. So I was
3 trying to make sure that I was not giving specific
4 medical advice on when someone should be administering
5 puberty blockers. 12:01:32

6 BY MR. BLOCK:

7 Q If you submitted an article to a peer-reviewed
8 journal and it included a sentence saying "while it is
9 outside my expertise, my understanding is that," you
10 know, and then the sentence continued, do you think 12:01:48
11 that type of statement would be accepted in a
12 peer-reviewed article?

13 A It would need to be taken in the context of
14 the type of article. And some reviewers would find it
15 acceptable because -- acknowledging what I don't know, 12:02:06
16 and others would say perhaps not.

17 Q Do you think that your expert report in this
18 case should be held to the same standards that a
19 peer-reviewed article would be held to?

20 MR. FRAMPTON: Objection; form, scope. 12:02:21

21 THE WITNESS: No, this is not held in the same
22 standards of a peer-reviewed article.

23 BY MR. BLOCK:

24 Q Why not?

25 A This is written for a different audience. 12:02:31

1 Q So why -- why should it not be held to the
2 same standards?

3 MR. FRAMPTON: Objection; form and scope.

4 THE WITNESS: Once again, this is written for
5 a different audience. This is not written for the 12:02:48
6 other experts in the field. This is written to provide
7 information to policymakers and in a legal situation
8 like this.

9 BY MR. BLOCK:

10 Q Well, but do you think that the -- regardless 12:02:58
11 of the style in which something is written, do you
12 think the same underlying rigor should be required for
13 an expert report as a peer-reviewed article?

14 MR. FRAMPTON: Objection; form and scope.

15 THE WITNESS: No, an expert report is not 12:03:17
16 going to be held to the same rigor as a peer-reviewed
17 article.

18 BY MR. BLOCK:

19 Q Okay. So you -- do you think that the
20 opinions expressed in an expert report don't have to be 12:03:27
21 as reliable as the opinions expressed in a
22 peer-reviewed article?

23 MR. FRAMPTON: Objection; form and scope.

24 THE WITNESS: The opinions in an expert report
25 need to be accurate, they need to be correct. 12:03:43

1 BY MR. BLOCK:

2 Q Yeah, but that wasn't my question.

3 Can you answer my question, please?

4 A Can you restate my your question, please?

5 MR. BLOCK: Could the reporter read back my 12:03:50
6 question?

7 THE REPORTER: Yes.

8 (Record read.)

9 MR. FRAMPTON: Objection; form and scope.

10 THE WITNESS: Generally, in a peer-reviewed 12:04:16
11 article, you are not providing opinions; you are
12 summarizing literature. And that's primarily what I've
13 done here, is summarize literature.

14 BY MR. BLOCK:

15 Q Do you think the accuracy of the -- of your 12:04:26
16 summaries in an expert report should be held to the
17 same standard as the accuracy of summaries in a
18 peer-reviewed article?

19 MR. FRAMPTON: Objection; form and scope.

20 THE WITNESS: The information needs to be 12:04:43
21 correct, accurate, truthful.

22 MR. BLOCK: Can you read back my question,
23 Reporter?

24 (Record read.)

25 MR. FRAMPTON: Objection; form and scope. 12:05:06

1 THE WITNESS: I thought I answered that by
2 saying it needs to be accurate and correct and
3 truthful.

4 BY MR. BLOCK:

5 Q Can you answer the question? 12:05:13

6 I -- I asked -- give me a "yes" or "no"
7 answer, please.

8 MR. FRAMPTON: Same objection.

9 THE WITNESS: I don't know that this is really
10 a yes-or-no question. 12:05:25

11 BY MR. BLOCK:

12 Q Are there different standards of accuracy for
13 an expert report than for a peer-reviewed article?

14 MR. FRAMPTON: Objection; form and scope.

15 THE WITNESS: They both need to be accurate 12:05:45
16 and correct. The writing style is so phenomenally
17 different.

18 BY MR. BLOCK:

19 Q All right. But they -- but the accuracy needs
20 to be the same; correct? 12:05:58

21 MR. FRAMPTON: Same objection.

22 THE WITNESS: Yes, they need to be accurate
23 and correct.

24 BY MR. BLOCK:

25 Q Okay. Is it fair to say that you did not 12:06:03

1 approach the task of writing this report with the same
2 analytical rigor that you would have approached the
3 task of writing a peer-reviewed article?

4 MR. FRAMPTON: Objection; form and scope.

5 THE WITNESS: That would not be a correct 12:06:16
6 statement.

7 BY MR. BLOCK:

8 Q Okay. Would you be comfortable submitting the
9 opinions that you expressed in this report in a
10 peer-reviewed article? 12:06:26

11 A Yes, I would be comfortable submitting them in
12 a peer-reviewed article.

13 Q Okay. If we could go back to your report, to
14 paragraph 111. So your report is Exhibit 64.

15 A So paragraph 111 starts "Tack et al." 12:06:50

16 Q Yes, it does.

17 It says (as read):

18 "Tack et al. (2018) observed that in
19 21 transgender-identifying biological
20 males, administration of antiandrogens 12:07:02
21 for 5-31 months (commencing at 16.3 ±
22 1.21 years of age)" --

23 And then I think it says "age" again in
24 parentheses. Or -- or is that just in my copy? I'm
25 sorry. I -- this is the second time I've -- I've 12:07:17

1 introduced an error into your words, so I will start
2 that over again.

3 (As read):

4 "111. Tack et al. (2018) observed
5 that in 21 transgender-identifying 12:07:31
6 biological males, administration of
7 antiandrogens for 5-31 months
8 (commencing at 16.3 ± 1.21 years of
9 age) resulted in nearly, but not
10 completely, halting of normal 12:07:45
11 age-related increases in muscle
12 strength."

13 Okay. Did I read that correctly?

14 A Yes, you did.

15 MR. BLOCK: All right. Sorry for the error 12:07:54
16 the first time around.

17 So I'm going to introduce an exhibit now.

18 Okay. And so this exhibit, when it -- when it
19 pops up in your folder, will be marked Exhibit 71.

20 (Exhibit 71 was marked for identification 12:08:26
21 by the court reporter and is attached hereto.)

22 BY MR. BLOCK:

23 Q Can you please let me know when you see it.

24 A All right. Exhibit 71.

25 Q All right. Is that -- is this the Tack 12:08:41

1 article that you are referring to?

2 A Yes, it is.

3 Q Okay. Great.

4 So do you think this article is relevant to
5 the discussion about whether transgender girls who 12:08:53
6 receive puberty blockers have an athletic advantage
7 over cisgender girls?

8 A Yes, I think it is relevant.

9 Q Okay. Now, if you remember the conversation
10 we had a few minutes ago, we agreed that puberty 12:09:06
11 blockers referred to -- refers to GnRHa's; correct?

12 A That is correct.

13 Q Okay. Did any of the transgender girls in the
14 study receive GnRHa's?

15 A Not as I recall. 12:09:22

16 Q In fact, the transgender girls in the study
17 actually received a different type of hormone
18 medication called progestins; isn't that right?

19 A That is correct.

20 Q So this isn't actually a study about puberty 12:09:43
21 blockers, is it?

22 MR. FRAMPTON: Objection; form.

23 THE WITNESS: I never said this was a study
24 about puberty blockers.

25 ///

1 BY MR. BLOCK:

2 Q Why did you include this paragraph in a
3 discussion about the effects of puberty blockers?

4 A Well, I clarified, in this paragraph, that
5 they were using antiandrogens. Because as the authors 12:10:05
6 have stated on page 2148 (as read):

7 This will contribute to determining
8 the place of GnRHa and progestins,
9 respectively, in the pharmacological
10 treatment of trans youth and to 12:10:20
11 improving our knowledge on the
12 long-term effects of these
13 interventions, as has been suggested
14 recently.

15 And then they cite a source. 12:10:27

16 Q So in paragraph 110 of your report, you begin
17 a discussion about the effects of puberty blockers on
18 athletic performance; correct?

19 A Let me refer back to -- just to make sure
20 we've got the right paragraph number there. 12:10:47

21 Paragraph 110. Yes, that paragraph does bring
22 up the idea of puberty suppression and puberty
23 blockers.

24 Q Okay. And then in paragraph 111, you discuss
25 this article by Tack; correct? 12:11:22

1 A That is correct.

2 Q And then in paragraph 112, you say (as read):

3 "Klaver et al. (2018 at 256)

4 demonstrated that the use of puberty

5 blockers did not eliminate the

12:11:37

6 differences in lean body mass between

7 biological male and female teenagers."

8 Correct?

9 A That is correct.

10 Q And then paragraph 113, again, begins with the

12:11:44

11 words "the effects of puberty blockers"; isn't that

12 right?

13 A That is correct.

14 Q Okay. So paragraph 110, 112 and 113 are all

15 discussing the effects of puberty blockers; correct?

12:11:55

16 A Yes.

17 Q And -- but paragraph 111, which is in between

18 110 and 112, is describing a study that does not

19 involve puberty blockers; correct?

20 MR. FRAMPTON: Objection; form.

12:12:15

21 THE WITNESS: That's correct.

22 BY MR. BLOCK:

23 Q Do you think that someone reading your report

24 could form the false impression that this article in

25 fact discusses puberty blockers when in reality it

12:12:24

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1 doesn't?

2 MR. FRAMPTON: Objection; form.

3 THE WITNESS: If someone is reading it and
4 pays attention to the statement of antiandrogens, they
5 would know that those are not puberty blockers. 12:12:35

6 BY MR. BLOCK:

7 Q Do you -- I thought you said recently that
8 this report is not meant for an audience of experts in
9 the field; right?

10 MR. FRAMPTON: Objection; form. 12:12:46

11 THE WITNESS: That is correct.

12 BY MR. BLOCK:

13 Q Okay. So do you think a lay audience, not of
14 experts in the field, would immediately understand that
15 antiandrogens are different from puberty blockers in 12:12:58
16 the context of this discussion?

17 MR. FRAMPTON: Objection; form.

18 THE WITNESS: So that's a difficult question
19 for me to answer because as I read through it, I notice
20 paragraph 110, puberty blockers, 112, -13, -14, all 12:13:13
21 specifically state puberty blockers, 111 states
22 antiandrogens. As I read that, as a critical thinker,
23 I would then say, well, why does this say antiandrogens
24 rather than puberty blockers and what -- learn the
25 difference. 12:13:32

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1 BY MR. BLOCK:

2 Q So why does a paragraph in your report, in the
3 middle of discussing puberty blockers, talk about
4 antiandrogens at all?

5 A Because, to the best of my knowledge, that is 12:13:43
6 the only research that is out there on the effects of
7 transgender hormone treatment in teenagers on muscle
8 strength.

9 Q I see. But wouldn't it be better to include
10 that article in the subsequent sections of your report 12:14:01
11 that discuss the effect of suppressing testosterone?

12 MR. FRAMPTON: Objection; form.

13 THE WITNESS: I think this is a matter of
14 opinion. I think it fits well because this is focusing
15 on transgender youth. 12:14:17

16 BY MR. BLOCK:

17 Q Oh, okay. So your -- your testimony is this
18 section of the article is supposed to address the topic
19 of transgender youth in general and not the topic of
20 puberty suppression. Is that your testimony? 12:14:32

21 A No. My testimony is this is about transgender
22 youth, including puberty suppression, and what we know
23 on the topic of transgender youth and how it would
24 affect athletic performance.

25 Q I see. Let's go to the beginning of this 12:14:49

1 section, which is several pages up. It's a long
2 section. But the section begins on page 28 of your
3 report. 23 on the bottom pagination, 28 of the PDF.
4 And paragraph 68.

5 A All right. 12:15:28

6 Q Okay. So beginning with paragraph 68, you are
7 discussing -- oh, sorry. I -- can we just go a little
8 further down, to subsection A? I skipped over it
9 myself. So this is actually paragraph 71.

10 A Okay. 12:15:55

11 Q Thank you.

12 So subsection A (as read):

13 "Boys exhibit advantages in athletic
14 performance even before puberty."

15 Did I correctly read that that's the 12:16:04
16 subsection?

17 A Yes, that is correct.

18 Q Okay. And then, you know, if you -- if you
19 continue scrolling, you can take your time, it's a
20 bunch of paragraphs on, you know, physiological 12:16:14
21 characteristics before puberty, athletic performance
22 before puberty; correct?

23 A Yes.

24 Q All right. And if you keep -- keep scrolling,
25 I think all the way until we get to -- I -- I believe 12:16:31

1 it's paragraph 110.

2 A Yes.

3 Q All right. So for all these paragraphs until
4 110, you've been discussing characteristics of boys
5 before puberty; correct? 12:16:53

6 A Yes. The athletic differences and
7 physiological differences between biolo- -- between
8 boys and girls before puberty.

9 Q Okay. And then in paragraph 110, you say (as
10 read): 12:17:03

11 "For the most part, the data I review
12 above relate to pre-pubertal children.

13 Today, we also face the question of
14 inclusion in female athletics of males
15 who have undergone 'puberty
16 suppression.'" 12:17:13

17 Isn't that right?

18 A Yes.

19 Q Okay. So what connects paragraph 110 to
20 everything that came before it, as I understand it, is 12:17:22
21 that it's supposed to provide information on athletic
22 performance and advantages of what you call biological
23 males who have not experienced endogenous, typically
24 male, puberty yet; correct?

25 MR. FRAMPTON: Objection; form. 12:17:49

1 THE WITNESS: Yes, so if I understand what
2 you're referring to there, there's a lot of paragraphs
3 there about the differences between males and females
4 before puberty.

5 BY MR. BLOCK: 12:18:02

6 Q Right. Okay.

7 And so -- and what thematically connects that
8 to puberty blockers is that -- the argument is that
9 girls who are transgender and on puberty blockers never
10 experience, typically, male puberty; correct? 12:18:15

11 MR. FRAMPTON: Same objection. Objection to
12 form.

13 THE WITNESS: Can you state that again,
14 please?

15 BY MR. BLOCK: 12:18:25

16 Q Yeah. So transgender girls on hormone
17 blockers never experience, typically, male puberty if
18 they begin the blockers at stage Tanner II; is that
19 right?

20 MR. FRAMPTON: Objection; form, scope. 12:18:39

21 THE WITNESS: That is my understanding.

22 BY MR. BLOCK:

23 Q Okay. And so that's thematically what
24 connects the discussion of prepubertal kids to the
25 discussion of trans girls on puberty blockers; correct? 12:18:52

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1 MR. FRAMPTON: Objection; form.

2 THE WITNESS: So what you're saying is there's
3 kind of a rough transition there?

4 BY MR. BLOCK:

5 Q Well, I -- I'm saying that -- I'm just asking 12:19:04
6 why are they in the same subsection that discusses
7 biological males before puberty?

8 A Well, because the puberty blockers would halt
9 puberty. That is the purpose of them.

10 Q Exactly. So this then leads to my question of 12:19:24
11 why do you then have a paragraph discussing
12 antiandrogens administered, you know, near the end of
13 puberty?

14 MR. FRAMPTON: Objection; form.

15 THE WITNESS: Because that is the only 12:19:42
16 information we have on teenagers and how their gender
17 treatment of hormones would be influenced.

18 If you look at some of those previous tables
19 and the tables in the appendix that go along with that,
20 they go up to 17-year-old children. 12:19:57

21 BY MR. BLOCK:

22 Q Right. But the -- the subsection is talking
23 ability prepubertal children; right?

24 MR. FRAMPTON: Objection; form.

25 THE WITNESS: That is the primary focus of 12:20:06

1 that subjection, yes.

2 BY MR. BLOCK:

3 Q Okay. And the -- the teenagers discussed in
4 the Tack study are not prepubertal teenagers; correct?

5 A That's correct. They are mid-prepubertal. 12:20:26

6 Q All right. Well, now let's look at
7 paragraph 112 of your report which discusses a 2018
8 study by Klaver.

9 Is that your understanding of how to pronounce
10 the name Klaver? 12:20:41

11 A Yes, that is my understanding of how to
12 pronounce the name. Thanks for asking.

13 MR. BLOCK: Okay. Great. And please feel
14 free to correct me if I pronounce anyone else's name
15 incorrectly. 12:20:54

16 All right. I'm going to introduce an exhibit.
17 This exhibit, when it appears on your screen, is going
18 to be marked as Exhibit 72.

19 (Exhibit 72 was marked for identification
20 by the court reporter and is attached hereto.) 12:21:14

21 BY MR. BLOCK:

22 Q Please let me know when it's visible.

23 A Exhibit 072 - Klaver - Early Hormonal
24 Treatment...

25 Q Right. And is this the article that you're 12:21:28

1 referring -- that you are referring to in
2 paragraph 112?

3 A I think so. Without double-checking between
4 my references cited, I -- I think this is the same
5 article. 12:21:46

6 Q Okay. Is it your understanding that the
7 people in this study received puberty blockers at the
8 beginning of Tanner II?

9 A As I recall, they received puberty blockers,
10 and I cannot recall the Tanner stage. I remember it 12:22:06
11 giving the ages.

12 Q Okay. What -- what age?

13 A Average age of fourteen and a half, if I
14 remember correctly.

15 Q Okay. And is fourteen and a half typically 12:22:15
16 the beginning of Tanner stage II?

17 A Not typically.

18 Q Okay. So if you go to page 254 of the Klaver
19 study --

20 A 2-5-4, yes. 12:22:37

21 Q All right. 2-5-4.

22 And if you look at the column that says
23 "Transwomen," it says (as read):

24 "Age at start of GnRH α , 14.5 \pm 1.8."

25 Is that right? 12:22:59

1 A Yes.

2 Q Okay. And so accord- -- so with those

3 figures, that means that the earliest that any of the

4 trans girls in the study received puberty blockers was

5 at age 12.7; correct?

12:23:14

6 A Do you want me to take the time to do the math

7 on that?

8 Q Well, 14.5 minus 1.8 is 12.7, but --

9 A So that's only one standard deviation. That

10 only accounts for, basically, a third of the

12:23:37

11 individuals below and above that age. So take out

12 another 1.8 to get two standard deviations away.

13 Q Got it.

14 A And you take they way that 1.8 again to

15 encompass the whole 99.99 percent.

12:23:50

16 Q Oh, okay. So what's your understanding of the

17 youngest age at which someone -- the girls in the study

18 receive puberty blockers, just -- if you can do it

19 or -- without --

20 A Just eyeball it. I'll say 10.7.

12:24:04

21 Q Okay. Thank you.

22 But the average age is 14.5; right?

23 A That is the average age, yes.

24 Q Okay. Great.

25 Now, you see in paragraph 112 of your report,

12:24:14

1 which -- let me pull it up directly so I don't misread
2 it again.

3 Paragraph 112 of your report, the first
4 sentence you say (as read):

5 "Klaver et al. (2018 at 256) 12:24:29
6 demonstrated that the use of puberty
7 blockers did not eliminate the
8 differences in lean body mass between
9 biological male and female teenagers."

10 Did I read that right? 12:24:40

11 A I'm still getting to 112, sorry.

12 That -- that -- that sounds correct, but I'm
13 not --

14 Q Right.

15 A -- there to verify. 12:24:49

16 All right. Now I'm at 112.

17 Q Okay. I'll read it again. (As read):

18 "Klaver et al. (2018 at 256)
19 demonstrated that the use of puberty
20 blockers did not eliminate the 12:25:03
21 differences in lean body mass between
22 biological male and female teenagers."

23 Did I read that sentence right?

24 A Yes.

25 Q Okay. And then it says (as read): 12:25:09

1 "Subsequent use of puberty blockers
2 combined with cross-sex hormone use
3 (in the same subjects) still did not
4 eliminate the differences in lean body
5 mass between biological male and 12:25:19
6 female teenagers."

7 Is that right?

8 A Yes.

9 Q Okay. Great.

10 Did Klaver report any findings on percentage 12:25:26
11 of body fat?

12 A Let me look.

13 Yes.

14 Q And -- and what were the findings on -- on
15 body fat? 12:25:45

16 A Just looking at it to make sure I'm reading
17 these correctly.

18 So it gives -- this is table -- or, sorry,
19 figure 2. At the top of figure 2, there is percent
20 body fat presented. 12:26:08

21 Q Yep. And the first part of that graph,
22 page 256, table 2, shows the percent body fat of the
23 trans women being virtually the same as the body fat of
24 the cis women; correct?

25 A Sorry, how do you zoom on this Exhibit Share? 12:26:26

1 It's a tiny graph on my screen.

2 MS. DUPHILY: If you take your mouse on to the
3 bottom and push, you should be able to see a plus and a
4 minus to make it look bigger.

5 THE WITNESS: Okay. Ah, there we are. 12:26:47

6 All right. Sorry, it's taking me a minute to
7 zoom in on that.

8 MR. BLOCK: Sure thing.

9 THE WITNESS: Okay. So to make sure we're
10 looking at the same figure, the trans women are shown 12:27:05
11 in the solid line, the trans men are shown in the light
12 gray line, the cis men are shown in the dotted line,
13 and the cis women are shown in the hash line; correct?

14 BY MR. BLOCK:

15 Q Correct. 12:27:19

16 A Okay. So the percent body fat in the trans
17 women and the percent body fat in the cis women, the
18 lines overlap at the part indicated as "Start CHT."

19 Q Okay. So that indicates that by the time the
20 trans women in the study had begun CHT, their 12:27:42
21 percentages of body fat overlapped with the percentages
22 of body fat for cis women; right?

23 A That is correct.

24 Q Okay. And is body fat -- percentage of body
25 fat a factor in athletic advantage? 12:28:01

1 A Yes, it is. Having excess body fat is
2 considered a disadvantage.

3 Q Okay. So why didn't you mention this finding
4 in your summary of the Klaver study?

5 A Because I mentioned the next part of the 12:28:16
6 figure demonstrating that there was not elimination of
7 the difference in lean body mass.

8 Q No, I understand that, but why did you just
9 report on the lean body mass and not the body fat
10 finding? 12:28:31

11 MR. FRAMPTON: Objection; form.

12 THE WITNESS: Because lean body mass is a more
13 important determinant of athletic performance.

14 BY MR. BLOCK:

15 Q I see. Does your report ever say that lean 12:28:45
16 body mass is a more important determinant?

17 MR. FRAMPTON: Objection; form.

18 THE WITNESS: I have stated multiple times in
19 there that lean body mass is a determinant of athletic
20 performance, and I've stated that -- and I have stated 12:29:02
21 that excess body fat is a disadvantage.

22 BY MR. BLOCK:

23 Q Okay. But my question is, do you state that
24 lean body mass is a more important determinant?

25 MR. FRAMPTON: Objection; form. 12:29:19

1 THE WITNESS: I don't recall where I specified
2 which is more or least important in --

3 MR. BLOCK: Okay.

4 THE WITNESS: -- in regards to body
5 composition. 12:29:23

6 BY MR. BLOCK:

7 Q Okay. You have a whole section in your report
8 on the subject of body fat percentage; correct?

9 A Again, I would have to look to see if it's a
10 whole section, if we're talking about a couple 12:29:38
11 paragraphs, a couple of pages or whatnot, but, yes, I
12 talk about body composition.

13 Q Okay. And you don't cite this study when you
14 discuss body composition related to fat; correct?

15 A So I'm -- you're saying that I'm not citing 12:29:51
16 Klaver in my previous discussions of body composition
17 as a determinant of athletic performance?

18 Q In your discussion of the role of body fat in
19 the -- as a determinant of athletic performance, you
20 never cite to the findings of this Klaver article; 12:30:09
21 correct?

22 A I -- I don't think so. I think these are the
23 only paragraphs where I cite the Klaver articles, and
24 we're talking specifically about with the puberty
25 blockers. 12:30:23

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1 Q I see. So -- but you -- you cite a finding of
2 the Klaver article that you think is -- supports your
3 view, but you don't cite a finding of the Klaver
4 article that cuts against your view. Is that a fair
5 statement? 12:30:41

6 MR. FRAMPTON: Objection; form.

7 THE WITNESS: Yes, I would say that it's fair
8 to say that I don't cite Klaver on the differences in
9 percent body fat.

10 BY MR. BLOCK: 12:30:55

11 Q Okay. So you testified earlier that you think
12 that an expert report needs to be held to the same
13 standards of accuracy as a peer-reviewed article;
14 right?

15 A Yes, that is correct. 12:31:06

16 MR. FRAMPTON: Objection --

17 THE WITNESS: Oh, sorry.

18 BY MR. BLOCK:

19 Q So do -- do you think your -- your paragraph
20 about Klaver is an accurate summary of the article in 12:31:14
21 its entirety?

22 MR. FRAMPTON: Objection; form.

23 THE WITNESS: The paragraph is not intended to
24 be a summary of the article in its entirety.

25 ///

1 BY MR. BLOCK:

2 Q Okay. The paragraph is -- is just intended to
3 pick out the portions of the article that support your
4 argument; is that right?

5 MR. FRAMPTON: Objection; form. 12:31:33

6 THE WITNESS: The paragraph is intended to
7 demonstrate that biological males retain athletic
8 advantages.

9 BY MR. BLOCK:

10 Q Well, the -- the article doesn't say anything 12:31:44
11 about athletic advantages; correct?

12 A I do not recall that the article uses the word
13 "athletic advantages."

14 Q All right. If you go to -- if you look at
15 page 255 of the Klaver article. So I think that's, 12:32:02
16 like, one page before the -- the -- where we were
17 looking.

18 A You're looking at table 2?

19 Q No. I'm -- I am just looking at the -- the --
20 the text of it. 12:32:25

21 A Okay.

22 Q If you look at the first full sentence in the
23 text that begins with "As a result."

24 A Okay.

25 Q Do you see that? 12:32:45

1 A Yes, I do.

2 Q All right. It says (as read):

3 "As a result of these changes, in
4 young adult transwomen at age 22" --

5 Excuse me. (As read): 12:32:56

6 "As a result of these changes, in
7 young adult transwomen at 22 years of
8 age, SDS for WHR, body fat, and LBM
9 showed greater similarity to ciswomen
10 than to cismen." 12:33:08

11 Did I read that correctly?

12 A Yes, you read that correctly.

13 Q Okay. And do you mention that finding in your
14 report?

15 A I do not think I quote that in my report. 12:33:17

16 Q Okay. All right.

17 MR. BLOCK: It's 1:30 -- can we go off the
18 record?

19 THE WITNESS: Is that okay with you going off
20 the record? 12:33:41

21 MS. DUPHILY: Kimberlee, are you there?

22 THE WITNESS: Nope.

23 MS. DUPHILY: We're going off the record at
24 approximately 1:32 p.m. [Sic]

25 (Recess.) 12:38:29

1 THE VIDEOGRAPHER: We are on the record at

2 12:38 p.m.

3 MR. BLOCK: Okay. Great.

4 BY MR. BLOCK:

5 Q I'd like to move on from the topic of puberty 12:38:43

6 blockers and ask a few questions about trans women who

7 suppress circulating levels of testosterone after

8 puberty.

9 Can we turn to page 56 of your report?

10 A Come on. Waiting for it to load. 12:39:04

11 All right. So page 56 by the page numbers;

12 correct?

13 Q Correct.

14 A All right. I'm there.

15 Q Great. So if you go to the third bullet 12:39:27

16 point, you say (as read):

17 "The administration of androgen

18 inhibitors and cross-sex hormones to

19 men or adolescent boys after the onset

20 of male puberty does not eliminate the 12:39:40

21 performance advantage that men and

22 adolescent boys have over women and

23 adolescent girls in almost all

24 athletic events."

25 Did I read that right? 12:39:50

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1 A Yes, you did.

2 Q Okay. Great.

3 Have you read the expert reports that -- the
4 expert reports that Dr. Safer submitted in this case?

5 A Yes, I read the reports by Dr. Safer. 12:40:00

6 Q All right. You read both the initial and the
7 rebuttal reports?

8 A Yes.

9 Q Okay. Isn't it fair to say that the effects
10 of male to female hormone treatment on important 12:40:10
11 determinants of athletic performance still remain
12 largely unknown?

13 MR. FRAMPTON: Object to form.

14 THE WITNESS: Sorry, I blanked out there for a
15 second after the objection. 12:40:28

16 There are still a lot of questions. There are
17 still a lot of questions.

18 MR. BLOCK: Okay. So I'd like to show you
19 another exhibit. And we have to mark it as such.

20 All right. This is going to hopefully appear 12:41:08
21 on your screen as Exhibit 73.

22 (Exhibit 73 was marked for identification
23 by the court reporter and is attached hereto.)

24 BY MR. BLOCK:

25 Q Can you let me know when -- when you see it? 12:41:18

1 A All right. Exhibit 073 - Brown Blog Post.

2 Q Yes. Do you recognize what this document is?

3 A Yes.

4 Q What is it?

5 A That is my blog post for the Physiology 12:41:38

6 Educators Community of Practice about The Olympics,

7 sex, and gender in the physiology classroom.

8 Q Okay. What -- what is the Physi- --

9 Physiology Educators Community of Practice blog?

10 A So this is a blog sponsored by the American 12:41:58

11 Physiological Society and their -- specifically their

12 educators' interest group -- it probably has a

13 different name than that, but that's what it is -- just

14 sharing information for other teachers in physiology,

15 typically geared towards college-level educators. 12:42:16

16 Q And is there a submission process?

17 A Yes, there is.

18 Q What -- what is that submission process?

19 A Well, you have to contact the person that runs

20 the blog post and say you are interested. They connect 12:42:33

21 you, then, to the editor for Advances in Physiology

22 Education who then asks what you would like to blog on

23 and lets you know of available times, and then once you

24 agree on that, you'll submit it. And then, once again,

25 the editor reviews it, someone else associated also 12:42:55

1 reviews it prior to being put up on the web.

2 Q Okay. And so did you reach out with your
3 interest in -- in submitting something?

4 A Yes, I did.

5 Q You weren't invited to submit something; 12:43:13
6 correct?

7 A I did receive an in- -- an e-mail inviting to
8 submit to the Peacock blog, and I e-mailed back and
9 said, yes, I'm interested.

10 Q And did -- were you invited to submit 12:43:27
11 something on the topic of transgender women
12 participating in sports?

13 A The invitation was not specific on what I
14 was -- would be blogging on.

15 Q And was it an invitation to you individually, 12:43:43
16 or was it an invitation to a larger group?

17 A I think both, honestly. There is an
18 invitation that goes out, periodically, to the larger
19 group of published a paper in Advances in Physiology
20 Education and received an invitation to me. 12:44:03

21 Q Okay. And so did this blog go through a
22 revision process after you first submitted it?

23 A There was one round of revisions, if I
24 remember correctly.

25 Q Okay. And do you remember what feedback you 12:44:23

1 got during the revision process?

2 A The feedback was very positive, and I was told
3 that this is an extremely important topic that needs to
4 be presented. And I really think the feedback was
5 relevant to the -- the -- the graph that I had in there 12:44:41
6 to ensure that I had appropriate copyright permission
7 or whatever permission to have that reproduced.

8 Q Okay. Great.

9 This blog post doesn't discuss prepubertal
10 children; right? 12:44:57

11 A Sorry, I'm just reviewing it to see.

12 I don't recall that it discusses prepubertal
13 children.

14 Q And the blog also doesn't discuss trans girls
15 and women who received puberty blockers and never went 12:45:25
16 through endogenous puberty; right?

17 MR. FRAMPTON: Objection to the form.

18 THE WITNESS: I don't recall discussing that
19 in there, and I'm not seeing it, as I look at the blog
20 post. 12:45:43

21 BY MR. BLOCK:

22 Q Okay. So if you can just go to page 2, and if
23 you go to the first full paragraph on page 2, beginning
24 with the -- the second sentence, do you --

25 A Yes. 12:46:04

1 Q -- see that?

2 A Yes, I do.

3 Q Okay. So the second sentence there says (as
4 read):

5 "It is also important to note that the 12:46:18
6 effects of male-to-female hormone
7 treatment on the important
8 determinants of athletic performance
9 remain largely unknown."

10 Did I read that right? 12:46:26

11 A Yes, you did.

12 Q Okay. Do you still agree with that statement?

13 A Yes, I still agree with that statement.

14 Q And so you think it's important to note that
15 the effects remain largely unknown; correct? 12:46:36

16 MR. FRAMPTON: Objection; form.

17 THE WITNESS: Yes. Prior to allowing
18 biological males to compete in female sports, we should
19 have a better understanding of how that process would
20 influence competition. 12:46:52

21 BY MR. BLOCK:

22 Q Okay. So in your expert report, do you ever
23 note that the effects of male to female hormone
24 treatment on important determinants of athletic
25 performance advantage remain largely unknown? 12:47:05

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1 A I could look and see, but I think I say --
2 state something in my conclusion where there are still
3 a lot of variables that have not been measured.

4 BY MR. BLOCK:

5 Q Okay. In this paragraph that I was reading 12:47:20
6 from, I'm just going to go into the next one. It says
7 (as read):

8 "Measurements of VO2max in transwomen
9 using direct or indirect calorimetry
10 are not available." 12:47:35

11 Did I read that right, even if I didn't
12 pronounce it correctly?

13 A Yes.

14 Q Okay.

15 A "Calorimetry" is how I say it because it kind 12:47:41
16 of flows when you say it fast.

17 Q Okay. That makes sense.

18 Do you ever note in your expert report that
19 measurements of VO2 max in trans women using direct or
20 indirect calorimetry are not available? 12:47:59

21 A Once again, I would need to refer back to my
22 report in the conclusions to see if I had included that
23 in there.

24 Q Do you think it would make sense to have
25 included that in there? 12:48:16

1 MR. FRAMPTON: Objection; form.

2 THE WITNESS: Yes, I think it would make sense
3 to include that in there, but it also -- like I said, I
4 cannot recall if I did or did not.

5 BY MR. BLOCK: 12:48:33

6 Q Okay. Well, let's -- well, let's look at your
7 report on -- so if you begin on page 39 of your report.

8 A All right.

9 Q All right. So this is -- Roman numeral V says
10 (as read): 12:49:04

11 "The available evidence shows that
12 suppression of testosterone in a male
13 after puberty has occurred does not
14 substantially eliminate the male
15 athletic advantage." 12:49:14

16 Right? That -- that's what section Roman
17 numeral V says; correct?

18 A That is correct.

19 Q Okay. And then subsection A on that page
20 talks about (as read): 12:49:25

21 "Empirical studies find that males
22 retain a strong performance advantage
23 even after lengthy testosterone
24 suppression."

25 Correct? 12:49:31

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1 A Correct.

2 Q All right. Then on 40, there's a subsection
3 that says, "Hand Grip Strength."

4 A Okay.

5 Q Okay. And if you -- apologies. You know, 12:49:38
6 I -- I should have directed you to page 46,
7 subsection B of that. So if you can just skip ahead to
8 46.

9 A Okay. Page 46.

10 Q Great. Thank you. 12:50:00

11 So subsection B says (as read):

12 "Testosterone suppression does not
13 reverse important male physiological
14 advantages."

15 Right? 12:50:09

16 A Yes.

17 Q Okay. And then if you turn the page, on 47,
18 at the -- page 47, at the bottom, there's a little
19 discussion on cardiovascular advantages; right?

20 A Yes. 12:50:20

21 Q All right. And where would VO2 -- where would
22 the discussion of VO2 max go? Would that be in the
23 "Cardiovascular Advantage" section or in a different
24 subsection of this discussion?

25 MR. FRAMPTON: Object to the form. 12:50:40

1 THE WITNESS: It would probably belong in the
2 cardiovascular advantages.

3 BY MR. BLOCK:

4 Q Okay. So do you see, just in this subsection,
5 a discussion of the fact that measurements of VO2 max in 12:50:51
6 trans women using direct or indirect calorimetry are
7 not available?

8 A I have not directly made that statement.

9 Q Okay. And if -- toggling back over to -- to
10 Exhibit 73, your blog post, after that statement I just 12:51:17
11 read, you say (as read):

12 "Measurements of muscle strength in
13 standard lifts (e.g. bench press, leg
14 press, squat, deadlift, etc.) in
15 transwomen are not available." 12:51:29

16 Is that correct?

17 A That is correct.

18 Q All right. Do you disclose that information
19 in your expert report?

20 MR. FRAMPTON: Objection to the form. 12:51:39

21 THE WITNESS: In my expert report, I talk
22 about the measurements of strength that have been
23 conducted.

24 BY MR. BLOCK:

25 Q But you do not discuss the measurements of 12:51:52

1 strength that have not been conducted; correct?

2 MR. FRAMPTON: Objection to the form.

3 THE WITNESS: I'm scrolling up to see if I
4 have some statement in there about, you know, specific
5 measurements. 12:52:13

6 Here again, no, I do not specifically state
7 that those measurements have not been conducted.

8 BY MR. BLOCK:

9 Q Okay. And then in the next sentence of the
10 blog post, you say (as read): 12:52:27

11 "Nor have there been evaluations of
12 the effects of male-to-female hormone
13 therapy on agility, flexibility, or
14 reaction time."

15 Is that right? 12:52:37

16 A That is correct.

17 Q Okay. And you do not, in your report, say
18 anything about whether -- about the effects of hormone
19 therapy on agility, flexibility or reaction time, do
20 you? 12:52:55

21 MR. FRAMPTON: Objection to the form.

22 THE WITNESS: On page 39, I state that only a
23 limited number of studies have directly measured the
24 effect of testosterone suppression and the
25 administration of female hormones on the athletic 12:53:05

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1 performance of males. And so then I go through those
2 studies which, you know, by default, then says those
3 other things have not been studied.

4 BY MR. BLOCK:

5 Q Okay. But you do discuss agility, flexibility 12:53:18
6 and reaction time when you're discussing the advantages
7 of cisgender men over cisgender women; right?

8 A Yes.

9 Q Okay. But then you don't have -- well, let me
10 just read the next part of the -- the blog post. (As 12:53:39
11 read):

12 "There has been no controlled research
13 evaluating how male-to-female hormone
14 treatment influences the adaptations
15 to aerobic or resistance training." 12:53:50

16 Is that correct?

17 A That is correct.

18 Q And again, that's not something you mention in
19 your report; correct?

20 MR. FRAMPTON: Objection to the form. 12:54:01

21 THE WITNESS: It is indirectly stated with my
22 statement about limited number of studies.

23 BY MR. BLOCK:

24 Q Okay. And then the final sentence in that
25 paragraph is (as read): 12:54:10

1 "And there are only anecdotal reports
2 of the competitive athletic
3 performance of transwomen before and
4 after using male-to-female hormone
5 treatment." 12:54:20

6 Is that right?

7 A That is correct.

8 Q Okay. So it's fair to say that when you
9 discuss Cecé Telfer in your report, that's an example
10 of one of the anecdotal reports you refer to in this 12:54:31
11 sentence; correct?

12 A That's correct.

13 Q Okay. So the discussion of Cecé Telfer and
14 Lia Thomas and Andraya Yearwood and Terry Miller, those
15 are, to use your words from the blog post, quote, only 12:54:56
16 anecdotal reports; correct?

17 MR. FRAMPTON: Objection to the form.

18 Go ahead.

19 THE WITNESS: If I may state, in my
20 declaration, I do cite a prepublished study by 12:55:12
21 Michael Joyner that is evaluating -- or, sorry,
22 Senefeld and Joyner that is evaluating Lia Thomas.

23 But yes, those -- those would primarily be
24 anecdotal reports.

25 ///

1 BY MR. BLOCK:

2 Q Okay. If you go to the second sentence in the
3 final paragraph, you say, (as read):

4 In the end, whether it is safe and
5 fair to include transgender athletes 12:55:46
6 and athletes with DSD in women's
7 sports comes down to a -- to a few
8 facts that can be extrapolated, lots
9 of opinions, and an interesting but
10 complicated discussion. 12:55:57

11 Did I read that right?

12 A I'm sorry, where were you reading that from?

13 Q Yeah, it's the -- it's the second sentence in
14 the last paragraph of your blog post.

15 A Okay. There. 12:56:12

16 Q Okay. I'll read it again. (As read):

17 In the end, whether it is safe and
18 fair to include transgender athletes
19 and athletes with DSD in women's
20 sports comes down to a few facts that 12:56:21
21 can be extrapolated, lots of opinions,
22 and an interesting but complicated
23 discussion.

24 Is that right?

25 A That is correct. 12:56:31

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1 Q And you still agree with that statement?

2 A Yes.

3 Q Okay. What do you -- what do you mean by
4 "interesting but complicated discussion"?

5 A Well, as I was writing this for fellow 12:56:43
6 educators, this could be a very complicated discussion
7 because of -- this could be a very heated topic.

8 Q Okay. So when you say that there -- "a few
9 facts that can be extrapolated, lots of opinions, and
10 an interesting but complicated discussion," were you 12:57:09
11 referring at all to the underlying substance being
12 interesting but complicated?

13 MR. FRAMPTON: Objection to the form.

14 THE WITNESS: Yeah, I'm not sure what you mean
15 by "underlying substance." 12:57:25

16 BY MR. BLOCK:

17 Q Yeah, is the discussion of whether -- aside
18 from something being heated, is -- is the -- this topic
19 complicated?

20 MR. FRAMPTON: Objection to the form. 12:57:40

21 THE WITNESS: Yes, this is a complicated
22 topic.

23 BY MR. BLOCK:

24 Q Okay. So if we go to your report again --
25 let's see -- on page 57 of your report. 12:57:57

1 A All right. Page 57.

2 Q So if you look just at the paragraph beginning
3 with the word "but."

4 A Okay. All right.

5 Q All right. You say -- you know, actually, 12:58:32
6 instead, let's go a few sentences above that, so in the
7 middle of the previous paragraph beginning with -- the
8 sentence beginning with "instead."

9 Do you see that?

10 A I'm sorry, which -- 12:58:49

11 Q So this is about five -- five lines from the
12 top.

13 A Okay. Yes. It says, "Instead, the IOC"?

14 Q Yeah. So this says --

15 A Okay. 12:58:58

16 Q -- (as read):

17 Instead, the IOC calls on other
18 sporting bodies to define criteria for
19 transgender inclusion, while demanding
20 that such criteria simultaneously 12:59:05

21 ensure fairness, safety, and inclusion

22 for all. The recent -- recently

23 updated NCAA policy on transgender

24 participation also relies on other

25 sporting bodies to establish criteria 12:59:19

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1 for transgender inclusion while
2 calling for fair competition and
3 safety.

4 But what we currently know tells us
5 that these policy goals—fairness, 12:59:28
6 safety, and full transgender
7 inclusion—are irreconcilable for many
8 or most sports.

9 Did I read those sentences correctly?

10 A Yes, you did. 12:59:40

11 Q Okay. How come -- why, in your blog post, did
12 you not say that the goals of fairness, safety and full
13 transgender inclusion are irreconcilable?

14 MR. FRAMPTON: Objection to the form.

15 THE WITNESS: The purpose of the blog post was 12:59:58
16 to stimulate discussions in classroom while providing a
17 little bit of guidance, but not advocate for a specific
18 position within a classroom.

19 BY MR. BLOCK:

20 Q Why didn't you say in your expert report that 01:00:13
21 whether it is safe and fair to include transgender
22 athletes and athletes with DSD in women's sports comes
23 down to a few facts that can be extrapolated, lots of
24 opinions, in an interesting but complicated discuss?

25 MR. FRAMPTON: Objection to the form. 01:00:28

1 THE WITNESS: I think that a reasonable person
2 would come to those conclusions after reading all --
3 how many pages of my report?

4 BY MR. BLOCK:

5 Q Okay. So it's your expert testimony that 01:00:39
6 whether it is safe and fair to include trans girls and
7 women on girls and women's sports teams comes down to a
8 few facts that can be extrapolated, lots of opinions
9 and an interesting but complicated discussion?

10 MR. FRAMPTON: Object to the form. 01:01:01

11 THE WITNESS: Yes, I will stand by that
12 statement in my blog post.

13 MR. BLOCK: Okay. Great.

14 So I'm going to now ask a few questions about
15 your other, you know -- your other publication or 01:01:17
16 submission on this topic. Let me just move it into the
17 actual exhibits.

18 Let's see. So I -- this is a PowerPoint
19 document. It's going to be marked as Exhibit 74, although
20 I am not sure that it is actually going to work, 01:02:07
21 showing up, so please let me know if it actually shows
22 up for you.

23 (Exhibit 74 was marked for identification
24 by the court reporter and is attached hereto.)

25 THE WITNESS: All right. I see Exhibit 074. 01:02:21

1 MR. BLOCK: Okay. And I think we're going to
2 need some assistance in how -- how do we zoom in again,
3 Concierge?

4 MS. DUPHILY: You just hold your mouse over
5 the bottom of the image, and you'll see the positive 01:02:37
6 and negative-looking glasses at the bottom, and you
7 can -- there's a menu.

8 Do you see that?

9 MR. BLOCK: Mouse over the image?

10 MS. DUPHILY: You want to click on it when 01:02:54
11 you're --

12 MR. BLOCK: All right.

13 MS. DUPHILY: Did you do it?

14 MR. FRAMPTON: With the witness, we're not
15 getting that. 01:03:03

16 MS. DUPHILY: Hold on a minute. Let me see.

17 MR. TRYON: Yeah, this is Dave Tryon. I've
18 seen that on other exhibits, but this one, it's not
19 showing up for me.

20 MR. BLOCK: If you're able to download a 01:03:19
21 copy --

22 MS. DUPHILY: Yeah, you're probably better off
23 downloading this because it's a PowerPoint.

24 BY MR. BLOCK:

25 Q Have you been able to download it, Dr. Brown? 01:04:02

1 A It appears that my computer is trying to
2 update PowerPoint at this very moment.

3 Q Okay.

4 MR. BLOCK: So why don't we -- can we go off
5 the record, please? 01:04:12

6 MR. FRAMPTON: It looks like it's nearly --

7 THE VIDEOGRAPHER: We are off the record at
8 1:04 p.m.

9 (Recess.)

10 THE VIDEOGRAPHER: We are on the record at 01:05:37
11 1:05 p.m.

12 MR. BLOCK: Thanks.

13 BY MR. BLOCK:

14 Q So is this a presentation that you authored,
15 Dr. Brown? 01:05:51

16 A Yes, it is.

17 Q And the title of this presentation is
18 "Transwomen Competing in Women's Sports: What We Know,
19 and What We Don't"; is that right?

20 A That is correct. 01:06:01

21 Q Okay. And what conference did you submit this
22 presentation to?

23 A This was the American Physiological Society
24 Sex and Gender conference, if I remember the title
25 correctly. 01:06:18

1 Q Yeah. If I -- if I said it was called "The
2 New Trends in Sex and Gender Medicine" conference, does
3 that sound accurate to you?

4 A Yes.

5 Q Okay. And am I right that the conference took 01:06:28
6 place from October 19th to October 22nd?

7 A That sounds correct.

8 Q Okay. Did you attend any meetings or panel
9 discussions as part of this conference?

10 A So this was a virtual conference for everyone. 01:06:42

11 Q Uh-huh.

12 A And so, yes, I sat in on discussions and panel
13 discussions and presentations and such.

14 Q Okay. Did you sit in on the panel discussion
15 at this conference titled "New Trends in Transgender 01:07:05
16 Medicine"?

17 A I honestly can't remember if I sat in and
18 attended that or not.

19 Q Okay. You have no recollection one way or the
20 other? 01:07:18

21 A Yeah, I -- there was a lot of meetings, a lot
22 of presentations and a lot of discussions, so I can't
23 say exactly which ones I was in and which ones I was
24 not.

25 Q Do you think it would have been informative to 01:07:32

1 attend that presentation?

2 A Yes.

3 MR. FRAMPTON: Objection to the form.

4 THE WITNESS: Sorry.

5 MR. FRAMPTON: Go ahead. 01:07:39

6 BY MR. BLOCK:

7 Q You can answer.

8 A Yes, it -- it would have been informative.

9 Q Okay. And do you think it would have been at
10 least as relevant to your research as Ben Shapiro? 01:07:49

11 MR. FRAMPTON: Object to the form.

12 THE WITNESS: It's possible that I had a
13 conflicting obligation that made it so I'm not able to
14 attend. Again, I know that I did with all of them, I
15 wasn't able to attend every single session I wanted 01:08:04
16 because of other obligations.

17 BY MR. BLOCK:

18 Q I see. But -- but my question is, would -- it
19 would be a more reliable source of information than
20 Ben Shapiro, was my question. 01:08:19

21 MR. FRAMPTON: Object to the form.

22 THE WITNESS: I guess that would depend on
23 what we're asking, Ben Shapiro is -- is speaking about
24 and where he is citing his sources versus what is being
25 discussed in that discussion. 01:08:37

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1 BY MR. BLOCK:

2 Q Okay. Now, would -- would this
3 presentation quali- -- would -- could this be
4 prescribed as a poster presentation?

5 A Yes. 01:08:51

6 Q Okay. Does your CV identify it as a poster
7 presentation?

8 A I don't think my CV discriminates on my
9 various academic presentations, as to what format they
10 were presented in. 01:09:06

11 Q Okay. So it's not your regular practice to
12 denote whether a presentation is specifically a poster
13 presentation?

14 A That is correct.

15 Q Okay. All right. What was the review process 01:09:13
16 for submitting this?

17 A So I -- I was encouraged by an editor from the
18 American Journal of Physiology to submit to this, after
19 having read my blog post. I submitted it, paid the
20 abstract submission fee, like any other professional 01:09:34
21 conference, and awaited for acceptance of the abstract.

22 Q And what -- were there edits to the abstract
23 sent back to you?

24 A No. They don't edit the abstracts.

25 Q Okay. All right. 01:09:47

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1 If you go to the bottom right-hand corner of
2 this presentation, there's a box titled "What we don't
3 know"; right?

4 A Correct.

5 Q Okay. And then -- and this box says, "What We 01:10:09
6 Don't Know," and then the first bullet is "No
7 controlled training studies with male-to-female hormone
8 use"; correct?

9 A Correct.

10 Q Okay. And -- and again, as we discussed 01:10:20
11 before, that -- that statement is not in your expert
12 report; right?

13 MR. FRAMPTON: Object to the form.

14 THE WITNESS: That statement is not verbatim
15 in my expert report. 01:10:36

16 BY MR. BLOCK:

17 Q And then the second bullet point is "No
18 measurements of changes in VO2max, running economy,
19 lactate threshold, anaerobic power (e.g. Wingate test),
20 vertical jump, 1-Repetition Maximum (e.g. bench press, 01:10:47
21 leg press, squat, deadlift), or many other common
22 determinants of athletic performance"; correct?

23 A That is correct.

24 Q And that information in that bullet point is
25 not included in your expert report; correct? 01:11:05

1 MR. FRAMPTON: Object to the form.

2 THE WITNESS: Again, in my expert report, I
3 state that there is limited evaluation. I don't make
4 that statement exactly.

5 BY MR. BLOCK: 01:11:17

6 Q Okay. How come this poster presentation
7 doesn't say that the policy goals of fairness, safety
8 and full transgender inclusion are irreconcilable for
9 many or most sports?

10 MR. FRAMPTON: Object to the form. 01:11:28

11 THE WITNESS: This poster was put together and
12 presented before the recent IOC or NCAA adjustments,
13 stating that that was a requirement. And again, the
14 poster is summarizing the science of what we know and
15 what we do not know. 01:11:48

16 BY MR. BLOCK:

17 Q So would you feel comfortable making the
18 statement to a -- a peer-reviewed publication that the
19 policy goals of fairness, safety and full transgender
20 inclusion are irreconcilable? 01:12:05

21 A Yes, I would feel very comfortable saying that
22 in a peer-reviewed pol- -- publication or presentation.

23 Q Can you tell me your understanding of what
24 this case is about?

25 MR. FRAMPTON: Object to the form. 01:12:31

1 Go ahead.

2 THE WITNESS: So the State of West Virginia,
3 like about currently 11 other states, if I recall,
4 passed a law to limit participation in women's sports
5 to biological women. 01:12:43

6 In this case, a young trans girl has retained
7 some lawyers and filed a lawsuit asking to be able to
8 participate in girls sports.

9 The judge has given an injunction specifically
10 for the plaintiff, but not halting the law overall. 01:13:05

11 BY MR. BLOCK:

12 Q And do you -- so the -- the plaintiff's name
13 is -- is Becky.

14 Do you oppo- -- do you think Becky should not
15 be allowed to participate on her middle school 01:13:23
16 cross-country team?

17 MR. FRAMPTON: Object to the form and scope.

18 THE WITNESS: So my understanding is the
19 plaintiff is biologically male, so a trans girl, who
20 wants to compete on girls sports. 01:13:39

21 BY MR. BLOCK:

22 Q Yes. And -- and so what's the answer to my
23 question?

24 A So --

25 MR. FRAMPTON: Same objections. 01:13:54

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1 THE WITNESS: So if we were to follow the law,
2 then the plaintiff should not be participating in
3 girls' sports.

4 BY MR. BLOCK:

5 Q Yeah, but it's your -- is it your expert 01:14:01
6 opinions that Becky should not be participating in the
7 girls' cross-country team at her middle school?

8 MR. FRAMPTON: Objection; form and scope.

9 THE WITNESS: So my expert statement, expert
10 declaration, is not meant to make judgments on an 01:14:17
11 individual basis, but overall policy and law.

12 BY MR. BLOCK:

13 Q Okay. Well, so you -- you made a distinction
14 between the fact that the injunction is -- applies only
15 to Becky and not to the -- the statute on its face, and 01:14:31
16 so I'm just trying to figure out whether your expert
17 opinion is only about other applications of the statute
18 to people beyond Becky or whether you are also offering
19 expert testimony with respect to the specific issue of
20 Becky's as-applied challenge. 01:14:51

21 MR. FRAMPTON: Objection; form and scope.

22 THE WITNESS: I've not made any statements
23 that I'm aware of specific to an individual plaintiff
24 in this case or -- I don't think in any of the cases.

25 ///

1 BY MR. BLOCK:

2 Q Okay. So you're not offering an expert
3 opinions in this case with regard to whether Becky, as
4 an individual, should be allowed to participate on her
5 girl's cross-country team in middle school? 01:15:22

6 MR. FRAMPTON: Objection; form and scope.

7 THE WITNESS: I'm offering an expert opinion
8 based on what the science says and what we know overall
9 regarding differences between males and females and how
10 those differences are affected by transgender hormone 01:15:37
11 use.

12 BY MR. BLOCK:

13 Q Okay. And are you offering any opinion on
14 whether Becky, as an individual, has any athletic
15 advantages compared to cisgender girls? 01:15:52

16 MR. FRAMPTON: Objection; form and scope.

17 THE WITNESS: I'm not making statements
18 specific to Becky. I am talking about boys and girls
19 overall.

20 BY MR. BLOCK: 01:16:07

21 Q Okay. And it's possible that Becky, as an
22 individual, as opposed to people with a male sex
23 assigned at birth overall -- let me just rephrase that.

24 It's possible that Becky, as an individual,
25 may not have any athletic advantages compared with 01:16:21

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1 cisgender girls; right?

2 MR. FRAMPTON: Object to the form and scope.

3 THE WITNESS: Based on the information I have
4 read, the information cited in my expert report, if we
5 are comparing the plaintiff to a similarly aged trained 01:16:34
6 and gifted girl, the plaintiff, as a biological male,
7 will have athletic advantages.

8 BY MR. BLOCK:

9 Q Well, that -- that raises questions for me.

10 I -- I -- I guess my understanding of your 01:16:49
11 report was that you were discussing average group-based
12 differences between males and females; right?

13 A If you look at my --

14 MR. FRAMPTON: Objection; form.

15 Go ahead. 01:17:01

16 THE WITNESS: If you look at my report, I -- I
17 provide information on individuals in the 10th
18 percentile, individuals in the 50th percentile,
19 individuals in the 90th percentile, and state multiple
20 times if we compare equally trained, gifted and 01:17:14
21 talented same-age individuals, the males have an
22 advantage.

23 BY MR. BLOCK:

24 Q Well, what do you mean by "gifted"?

25 A There are many gifts that could help a person 01:17:25

1 be a better athlete than others, whether --

2 Q So --

3 A -- whether it is something biological, whether
4 that is something with family support.

5 Q Okay. But -- so when -- when you're 01:17:43

6 discussing the physiological characteristics that, on
7 average, make cisgender boys have better outcomes in
8 athletic performance than cisgender girls, you're not
9 saying that every single cisgender boy has

10 physiological characteristics that make -- that give 01:18:03

11 them an advantage over the average cisgender girl of
12 the same age and training, are you?

13 MR. FRAMPTON: Object to the form.

14 THE WITNESS: When we look at the data, if you
15 compare comparably gifted aged and trained males and 01:18:24
16 females, the males have an advantage.

17 BY MR. BLOCK:

18 Q Yeah, but you're -- you're smuggling in the
19 word "gifted" here, and you're including these
20 physiological characteristics as meaning gifted, it 01:18:34
21 sounds like.

22 I'm trying to isolate your testimony about
23 physiological advantages, okay?

24 And so it's possible there's -- there's plenty
25 of boys that are shorter than girls; right? 01:18:46

1 A Yes, there are some boys that are shorter than
2 some girls.

3 Q Yes. So not -- not every -- and there are
4 some boys that are shorter than the average girl of the
5 same age; correct? 01:19:04

6 A Yes, there are some boys that are shorter than
7 the average girl.

8 Q Okay. So not -- not every -- so even if
9 males, on average, are taller than females, on average,
10 not every male is gifted with greater height than the 01:19:18
11 average girl of the same age; right?

12 A 50 percent of men are taller than 90 percent
13 of women.

14 Q Yeah. And I know you're -- you're -- you're
15 making a statement, though, that that doesn't answer my 01:19:38
16 question. And so I'm taking that as -- is the answer
17 to my question "correct"?

18 A Could you restate the question, please?

19 Q Yes. Not every boy is taller than the average
20 cisgender woman; right? 01:19:54

21 Let me switch from boys to gir- -- to a woman.

22 Not every cisgender boy is taller than the
23 average cisgender girl of the same age; correct?

24 A If I can -- I'm -- I'm just a little confused
25 here because you are comparing an absolute of every boy 01:20:13

1 with average.

2 Q Yes, I -- I -- I am. I -- I'm saying that it
3 is entirely possible that there's an individual that is
4 not taller than the -- an individual who is a boy that
5 is not taller than the average girl, the mean -- or the 01:20:31
6 mean height of girls of the same age; right?

7 A Yes. So if you look at the distribution
8 curves for body height, boys on the shorter end of the
9 distribution curve may be shorter than girls in the
10 average of the distribution curve. 01:20:47

11 Q And -- and the same is true for speed; right?

12 A If I may, I would actually like to refer back
13 to the graphs by Gabe Higgard so we could look and see
14 where the slowest boys are relative to the
15 50th percentile for the girls in those competitions. 01:21:09

16 Q Okay. We can -- so we -- I appreciate that.
17 We can refer back to that later.

18 Are -- are you familiar at all with Becky's
19 athletic performance?

20 A No. I know nothing of Becky's athletic 01:21:26
21 performance.

22 Q Okay. And you -- as we said before, you are
23 not providing expert testimony about her as an
24 individual; correct?

25 A Right. I'm providing testimony on overall 01:21:41

1 what we would see if we compare equal, as much as
2 possible, males to females.

3 Q And is it your understanding of -- of this law
4 that it prevents girls who are transgender from
5 participating on the same sports teams as cisgender 01:22:06
6 girls?

7 MR. FRAMPTON: Object to the form and scope.

8 THE WITNESS: My understanding is, yes, this
9 states that people should participate in sports
10 based -- based on their biological sex. 01:22:21

11 BY MR. BLOCK:

12 Q Right. And, therefore, transgender girls
13 should not be allowed to participate on the same sports
14 team as cisgender girls; correct?

15 MR. FRAMPTON: Same objection. 01:22:32

16 THE WITNESS: Just going to rephrase that.

17 So trans girls should not be competing with
18 cis girls, yes.

19 BY MR. BLOCK:

20 Q Okay. Thank you. 01:22:40

21 And you think H.B. 3293 -- well, let me say,
22 do you know what I'm talking about when I refer to
23 H.B. 3293?

24 A I know we're talking about H.B. I don't
25 remember the number. I will assume that it is the law 01:22:57

1 in West Virginia.

2 Q Okay. Great.

3 You think H.B. 3293 is justified by science;
4 right?

5 MR. FRAMPTON: Object to the form and scope. 01:23:06

6 THE WITNESS: Yes, I do.

7 BY MR. BLOCK:

8 Q Okay. And you think it's justified by science
9 even though it applies to trans girls who, as a result
10 of puberty blockers and gender-affirming hormones, 01:23:23
11 never go through endogenous puberty; right?

12 MR. FRAMPTON: Same objections.

13 THE WITNESS: Yes.

14 BY MR. BLOCK:

15 Q And you think H.B. 3293 is justified by 01:23:29
16 science even though it applies to trans girls and women
17 who go through endogenous puberty and then take
18 medication to lower their levels of circulating
19 testosterone; right?

20 MR. FRAMPTON: Same objections. 01:23:43

21 THE WITNESS: Yes.

22 BY MR. BLOCK:

23 Q Okay. And you think H.B. 3293 is justified by
24 science even though it applies the same categorical
25 rule to all sex-separated sports instead of creating 01:23:50

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1 different standards for different sports; is that
2 right?

3 MR. FRAMPTON: Same objections.

4 THE WITNESS: Yes.

5 BY MR. BLOCK: 01:24:01

6 Q Okay. I would like to direct your attention
7 to paragraph 8 of your report. Let me know when you're
8 there.

9 A It is on page 7, under item II, "Biological
10 men"? 01:24:29

11 Q Yes.

12 A Okay.

13 Q Okay. Make sure I'm there myself.

14 Okay. So I'm just going to read this to you,
15 beginning with the second sentence. (As read): 01:24:44

16 "I cited many" --

17 Actually, I'll begin with the first sentence.

18 Sorry.

19 You say (as read):

20 "Nevertheless, these differences have 01:24:52

21 been extensively studied and measured.

22 I cited many of these studies in the

23 first paper on this topic that I

24 prepared, which was submitted in

25 litigation in January 2020. 01:25:03

1 Since then, in light of current
2 controversies, several authors have
3 compiled valuable collections or
4 reviews of data extensively
5 documenting this objective fact about 01:25:11
6 the human species, as manifest in
7 almost all sports, each of which I
8 have reviewed and found informative.
9 Did I read that correctly so far?

10 A Yes, you did. 01:25:23

11 Q Okay. Thanks.

12 And you say (as read):

13 "These include Coleman (2020), Hilton
14 & Lundberg (2021), World Rugby (2020),
15 Harper (2021), Hamilton (2021), and a 01:25:36
16 'Briefing Book' prepared by the
17 Women's Sports Policy Working Group
18 (2021).

19 Did I read that right?

20 A Yes. 01:25:46

21 Q Okay. And if you -- if you could look at
22 the -- that list that you gave, and I'd like you to --
23 to tell me -- and I -- and I will write it down --
24 which of those sources support excluding transgender
25 girls and women from sports if they have had puberty 01:26:08

1 blockers and gender-affirming hormones and, as a
2 result, have not gone through endogenous puberty.

3 MR. FRAMPTON: Object to the form.

4 THE WITNESS: Can you please rephrase that
5 question? It was just kind of long. 01:26:21

6 BY MR. BLOCK:

7 Q Yeah, sure.

8 So I -- I'm talking about trans girls who have
9 been on puberty blockers and, as a result, not
10 experienced endogenous puberty. 01:26:33

11 Which of the sources identified in paragraph 8
12 support excluding those trans girls who are on puberty
13 blockers from participating in girls and women's
14 sports?

15 MR. FRAMPTON: Object to the form. 01:26:47

16 THE WITNESS: I cannot recall right now which
17 or if any of those papers discuss specifically puberty
18 blockers.

19 BY MR. BLOCK:

20 Q Okay. So -- so you can't recall whether any 01:26:58
21 of those papers discuss puberty blockers at all. Is
22 that what you're saying?

23 A I'm saying I cannot recall if they advocate
24 for preventing people who have used puberty blockers
25 from participating in girls' sports. 01:27:15

1 Q Okay. Can you recall if any of them advocate
2 in favor of allowing girls who use puberty blockers to
3 participate in girls and women's sports?

4 A Well, as we discussed earlier, the Women's
5 Sports Policy Working Group has a statement about that, 01:27:37
6 and I think World Rugby has a statement about that.

7 Q Okay. Any others?

8 A I can't recall from the others.

9 Q Okay. So just in terms of what you can
10 recall, at least two of them advocate in favor of 01:27:52
11 allowing trans girls on puberty blockers to participate
12 and you can't recall if any of the others support
13 excluding girls who are transgender?

14 MR. TRYON: Objection.

15 MR. FRAMPTON: Same objection. Form. 01:28:17

16 THE WITNESS: So I can't recall specifically.
17 I think Hilton and Lundberg have some mention on that
18 topic, but again, I can't recall without referring back
19 to the paper to look.

20 BY MR. BLOCK: 01:28:28

21 Q Okay. And so which of the sources cited in
22 this paragraph advocate in favor of excluding trans
23 girls and women who go through puberty and then
24 suppress testosterone?

25 MR. FRAMPTON: Objection; form. 01:28:46

1 Go ahead.

2 THE WITNESS: I think that is Hilton and
3 Lundberg and World Rugby and Harper and Hamilton and
4 the Women's Sports Policy Working Group.

5 BY MR. BLOCK: 01:28:55

6 Q Okay. So it's Hilton and Lundberg and Harper
7 and World Rugby and Women's Sports Policy Working
8 Group?

9 A And, I think, Hamilton.

10 Q Okay. You think that those five sources 01:29:12
11 advocate in favor of excluding transgender girls and
12 women from participating on girls and women's sports
13 team if they have gone through endogenous puberty and
14 then lowered their levels of circulating testosterone?

15 MR. FRAMPTON: Object to the form. 01:29:36

16 THE WITNESS: Yes, I think those all indicate
17 that women deserve to compete in a protected category.

18 BY MR. BLOCK:

19 Q Okay. And then which of the sources cited in
20 paragraph 8 advocate in favor of having a categorical 01:29:49
21 rule that apply to all sports instead of
22 differentiating based on what sport is at issue?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: So World Rugby is speaking
25 specifically about rugby; and, therefore, I would not 01:30:14

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1 expect it to talk too much about other sports.

2 If I recall correctly, Hamilton states
3 specifically that women deserve to compete in a
4 protected category, which implies all sports.

5 Hilton and Lundberg advocate for sex 01:30:31
6 segregation of sports, and, as far as I know, it's for
7 all sports.

8 And Harper indicates that trans women have a
9 retained athletic advantage compared to cisgender
10 women. 01:30:45

11 BY MR. BLOCK:

12 Q And so just to clarify, my question isn't
13 whether or not there should be separation in those --
14 in all sports; the question is whether or not there
15 should be the same rules for excluding transgender 01:30:58
16 girls and women in all sports.

17 MR. FRAMPTON: Objection; form.

18 THE WITNESS: I guess you'll need to rephrase
19 the question because I thought I answered it.

20 BY MR. BLOCK: 01:31:17

21 Q Yeah. So IOC used to have a single standard
22 that applied to all sports. They then changed their
23 policy so that individual standards could be crafted
24 for different sports.

25 H.B. 3293 has a single standard that applies 01:31:30

1 to all sports.

2 My question is which of the sources support
3 having a single standard that applies to all sports
4 instead of having individual standards crafted to
5 different sports. 01:31:46

6 MR. FRAMPTON: Objection to the form.

7 THE WITNESS: I would need to review each of
8 them to be specific and certain. So going off of
9 memory, Hilton and Lundberg, Hamilton, Women's
10 Sport (sic) Policy Working Group, again, as I recall, 01:32:05
11 without looking at them specifically, state that it
12 should be categorical women's sports and men's sports.

13 MR. BLOCK: Okay. Can we go off the record
14 for a second?

15 MR. FRAMPTON: Sure. 01:32:19

16 THE VIDEOGRAPHER: We are off the record at
17 1:32 p.m.

18 (Recess.)

19 THE VIDEOGRAPHER: We are on the record at
20 2:08 p.m. 02:08:00

21 BY MR. BLOCK:

22 Q Good afternoon, Dr. Brown.

23 A Mr. Block, how are you doing?

24 Q I -- I'm good.

25 Okay. So, you know, we -- just before the 02:08:12

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1 break, we had just a series of questions about some of
2 the sources quoted in your report, and I'm trying to
3 just pull back, again, the -- the paragraph where this
4 was discussed.

5 This is paragraph 8, page 7, from your expert 02:08:32
6 report, you know, marked Exhibit 64.

7 A Yes.

8 Q And, you know, we -- we had a series of
9 questions about them. And if you recall, my questions
10 focused on three features of H.B. 3293. One is the 02:08:46
11 fact that it excludes trans girls and women even if
12 they've had blockers. Two is that it includes trans
13 girls and women if they've gone through puberty and
14 suppressed their testosterone. And three is that it
15 has an across-the-board rule. And I asked you a series 02:09:09
16 of questions about those elements of it, and now I'm
17 going to turn to looking at the sources cited in
18 paragraph 8, with an eye towards those elements. So
19 that's not a question for you; that's just to orient
20 you for the next couple of questions. 02:09:27

21 MR. BLOCK: So if you could look in your
22 exhibit file, Exhibit 75, that should be a PDF of
23 Coleman -- of the first Coleman article. Coleman 2020.

24 (Exhibit 75 was marked for identification
25 by the court reporter and is attached hereto.) 02:09:46

1 THE WITNESS: Yes. By Doriane Coleman and
2 Michael Joyner and Donna L.

3 BY MR. BLOCK:

4 Q Yes. All right. So if we look at that
5 article -- if you could turn to page 130 of her 02:10:12
6 article. Let me know when you're there. It's near the
7 end.

8 A Still scrolling. Almost there.

9 All right. Page 130. Duke Journal of Gender
10 and Law Policy, Volume 27:69, 2020. 02:10:49

11 Q Yep. Okay.

12 Now, just to preface this, you know, this
13 article uses the phrase "category affirming" and
14 "category defeating."

15 Are you familiar with those terms? 02:11:01

16 A If I remember correctly, category affirming
17 applies to male and female. Is that correct?

18 Q So my understanding, which I'll represent to
19 you, is that category affirming means that the
20 participation is consistent with the purposes of having 02:11:20
21 a female category, and category defeating means
22 allowing someone to participate would sort of defeat
23 the purpose of having a female category.

24 So if -- does that ring a bell at all for you?

25 A Yes, it does. It does. 02:11:37

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1 Q Okay. So if you look at the -- the paragraph
2 beginning "In high school" --

3 A Uh-huh.

4 Q -- "In high school intramural."

5 Do you see that? 02:11:48

6 A Yes, I do.

7 Q Okay. So it says (as read):

8 "In high school intramural, junior

9 varsity, and regular season play,

10 where institutional goals are 02:11:57

11 primarily related to health and

12 fitness and to the development of

13 social skills, unconditional inclusion

14 of gender diverse students according

15 to their gender identity rather than 02:12:06

16 their sex will usually be category

17 affirming."

18 Do you see that?

19 A I do.

20 Q Okay. So that sentence indicates that it 02:12:12

21 would be consistent with the female category according

22 to Coleman 2020 to have -- to allow trans girls to

23 participate in intramural, junior varsity and regular

24 season play without any medical interventions

25 whatsoever. Do you agree? 02:12:39

1 MR. FRAMPTON: Object to the form.

2 THE WITNESS: I'm looking at the sentence

3 after that, however, which has some exceptions, which

4 would include invitational and postseason

5 opportunities.

02:12:53

6 BY MR. BLOCK:

7 Q Yes. Is it your understanding that H.B. 3293

8 is limited to excluding trans girls from invitational

9 and postseason opportunities?

10 MR. FRAMPTON: Object to the form.

02:13:04

11 THE WITNESS: Yes, it is my understanding that

12 the law in West Virginia states that biological females

13 only compete in female sports.

14 BY MR. BLOCK:

15 Q Right. But not just -- not just the

02:13:22

16 invitational and postseason opportunities of female

17 sports; right?

18 MR. FRAMPTON: Same objection.

19 THE WITNESS: Yes, it is my understanding that

20 it is all parts of the sports.

02:13:31

21 BY MR. BLOCK:

22 Q Right. So the H.B. 3293 does not allow trans

23 girls to participate on girls' teams in the regular

24 season play of sports; correct?

25 MR. FRAMPTON: Object to the form.

02:13:46

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1 THE WITNESS: I will trust your interpretation
2 on that.

3 BY MR. BLOCK:

4 Q Would you support a policy of allowing trans
5 girls to participate in regular season play? 02:14:01

6 MR. FRAMPTON: Object to the form and scope.

7 THE WITNESS: Inasmuch as biological males
8 have inherent athletic advantages over biological
9 females, I think the category should be retained.

10 BY MR. BLOCK: 02:14:19

11 Q Yeah, I know. I'm -- I'm sorry, I really just
12 need like a clear answer to my questions.

13 This article draws a distinction between
14 allowing trans girls to play in regular season play
15 versus in postseason opportunities. I'm just trying to 02:14:30
16 get an answer from you about whether you agree with
17 that distinction or not. So --

18 MR. FRAMPTON: Objection to the form that
19 misstates the article.

20 MR. BLOCK: Okay. 02:14:44

21 BY MR. BLOCK:

22 Q So --

23 MR. FRAMPTON: You can go ahead and answer.

24 BY MR. BLOCK:

25 Q So do you think that trans girls should not be 02:14:45

1 allowed to play on girls' teams for regular season
2 play?

3 MR. FRAMPTON: Object to the form.

4 Go ahead.

5 THE WITNESS: I think that whether it's 02:14:58
6 regular season, preseason, postseason, males have
7 inherent athletic advantages; therefore, we should
8 protect women's sports and men's sports.

9 BY MR. BLOCK:

10 Q So -- so that's a yes? 02:15:13

11 MR. FRAMPTON: Same objection.

12 THE WITNESS: I think you could take that as a
13 yes.

14 BY MR. BLOCK:

15 Q Thank you. 02:15:17

16 All right. Then if you go down, continuing in
17 the article, the paragraph that says -- let me find
18 this. All right. The paragraph above that begins with
19 "where combined." (As read):

20 Where combined teams or practices 02:15:44
21 coupled with sex segregated
22 competition cannot be -- cannot
23 accomplish institutional goals, the
24 accommodations approach detailed in
25 Part IIIC4 should be adopted." 02:15:55

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1 And that cross references a section that I
2 don't think we need to turn to for purposes of this
3 question, but let me know if you disagree.

4 Then the -- then the paragraph continues,
5 so -- (as read):

02:16:08

6 "This will be the case" --

7 Meaning the accommodations approach should be
8 adopted.

9 (As read):

10 -- "in circumstances where sex

02:16:14

11 segregated teams and events remain

12 necessary to secure parity of

13 opportunity for females. Where the

14 accommodations approach is adopted,

15 trans students will train and compete

02:16:24

16 consistent with their gender identity

17 so long as their inclusion can be

18 relevantly conditioned. The NCAA

19 transgender policy is illustrative of

20 a hormonal condition in this category;

02:16:38

21 others that do not require

22 medicalization-- such as handicaps,

23 offsets, and quotas-- exist as more

24 appropriate models for the high school

25 sports space.

02:16:45

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1 Do you see that?

2 A Yes, I see that.

3 Q Okay. So am I correct in saying that this
4 article points to the NCAA transgender policy as
5 illustrative of a model of allowing trans girls to 02:16:58
6 participate so long as their inclusion can be
7 relatively -- relevantly conditioned?

8 MR. FRAMPTON: Object to the form.

9 THE WITNESS: And I'm unclear what they mean
10 by "relevantly conditioned," so I don't know how I can 02:17:21
11 answer that.

12 BY MR. BLOCK:

13 Q Okay. Why do you think they're citing the
14 NCAA transgender policy?

15 A This is the old NCAA policy, not the current 02:17:35
16 NCAA policy, and the old NCAA policy did have a
17 statement about testosterone suppression.

18 Q So -- and so they are citing testosterone
19 suppression as an example of an accommodations approach
20 that should be used in circumstances for sex-segregated 02:18:00
21 teams and events remain necessary to secure parity of
22 opportunity for females; right?

23 MR. TRYON: Objection.

24 MR. FRAMPTON: Object to the form.

25 THE WITNESS: And again, what -- I'm still not 02:18:19

1 sure what you're asking me here.

2 BY MR. BLOCK:

3 Q Sure. I'm -- I'm asking, does this article
4 support a policy of -- of excluding trans girls and
5 women from all female athletic events, even if they 02:18:28
6 suppress testosterone after puberty?

7 MR. FRAMPTON: Same objection.

8 THE WITNESS: As I read it, this article is
9 kind of confusing on that.

10 MR. BLOCK: Okay. All right. I'll -- I'll 02:18:50
11 leave that article at that.

12 Let's next look at the Hilton and Lundberg
13 article, which I will cue up for you. For some reason,
14 Exhibit Share is being slow.

15 (Exhibit 76 was marked for identification 02:19:43
16 by the court reporter and is attached hereto.)

17 BY MR. BLOCK:

18 Q Okay. This should pop up on your exhibit list
19 as Exhibit 76.

20 A All right. Exhibit 076 - Hilton - Transgender 02:20:00
21 Women...?

22 Q Yes.

23 A Okay.

24 Q So, you know, we discussed this, you know,
25 as -- you -- you cited this as an exam- -- as, 02:20:12

1 potentially, an example of an article supporting a
2 categorical rule across sports; correct?

3 A That is correct.

4 Q Okay. And you cited this, potentially, as an
5 example of an article supporting an exclusion of trans 02:20:29
6 girls and women even if they've suppressed
7 testosterone; right?

8 MR. FRAMPTON: Same -- object to the form.

9 THE WITNESS: Yes.

10 BY MR. BLOCK: 02:20:40

11 Q Okay. Great.

12 So let's look on page 211 of this article.

13 Let me know when you're there.

14 A All right. Yep, page 211.

15 Q Great. All right. Sorry. One second. 02:21:08

16 All right. If you look on the right-hand
17 column, the second -- the third sentence there, where
18 it begins, "It is also," do you see that?

19 A So page 211, right-hand column?

20 Q Second full paragraph, third sentence. 02:21:44

21 A Yes. "It is also important to recognize..."

22 Q Yeah. So that says (as read):

23 "It is also important to recognize the

24 performance in most sports may be

25 influenced by factors outside muscle 02:21:58

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1 mass and strength, and the balance

2 between inclusion, safety and fairness

3 therefore differs between sports."

4 Do you see that?

5 A Yes. 02:22:06

6 Q Okay. Does that refresh your recollection at
7 all about whether or not this article advocates for a
8 single across-the-board rule?

9 MR. FRAMPTON: Object to the form.

10 THE WITNESS: It doesn't make a clear 02:22:21
11 statement one way or the other, necessarily.

12 BY MR. BLOCK:

13 Q Okay. So let's continue reading.

14 If you go to the final full paragraph.

15 A Okay. 02:22:47

16 Q The second sentence beginning with
17 "regardless."

18 A Okay.

19 Q Okay. It says (as read):

20 "Regardless of what the future will 02:22:54

21 bring in terms of revised transgender

22 policies, it is clear that different

23 sports differ vastly in terms of

24 physiological determinants of success,

25 which may create safety considerations 02:23:05

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1 and may alter the importance of
2 retained performance advantages.
3 Thus, we argue against universal
4 guidelines for transgender athletes in
5 sport and instead propose that each 02:23:17
6 individual sports federation evaluate
7 their own conditions for inclusivity,
8 fairness and safety."

9 Do you see that?

10 A Yes, I do. 02:23:26

11 Q Okay. So is it fair to say that this article,
12 they state that they argue against universal guidelines
13 for transgender athletes in sport?

14 MR. FRAMPTON: Object to form.

15 THE WITNESS: Yes, that would be a correct 02:23:42
16 statement based on what is written right there.

17 BY MR. BLOCK:

18 Q Okay. So based on what is written right
19 there, they do not support a single categorical rule
20 that applies equally to all sporting events; correct? 02:23:52

21 MR. FRAMPTON: Same objection.

22 THE WITNESS: Based on that sentence, that is
23 correct.

24 BY MR. BLOCK:

25 Q Okay. Let's go to page 209 of this. 02:23:59

Page 212

1 At the top of the page, on the left-hand
2 column.

3 A Okay.

4 Q Okay. The paragraph beginning -- I mean, not
5 the paragraph. The sentence beginning with the word 02:24:28
6 "however."

7 Do you see that --

8 A Yes.

9 Q -- right in the middle of that first
10 paragraph? 02:24:35

11 All right. It says (as read):

12 "However, given the plausible
13 disadvantages with testosterone
14 suppression mentioned in this section,
15 together with the more marginal male 02:24:43
16 advantage in endurance-based sports,
17 the balance between inclusion and
18 fairness is likely closer to
19 equilibrium in weight-bearing
20 endurance-based sports compared with 02:24:55
21 strength-based sports where the male
22 advantage is still substantial.

23 Do you see that?

24 A Yes, I do.

25 Q All right. So -- and feel free to read more 02:25:03

1 of that paragraph of which this is an excerpt, but is
2 it fair to say that the authors of this article are
3 saying there is a substantial advantage for
4 strength-based sports for transgender women who
5 suppress testosterone, but when it comes to -- when it 02:25:25
6 comes to weightbearing endurance-based sports, the
7 balance between inclusion and fairness is likely closer
8 to equilibrium?

9 MR. FRAMPTON: Object to the form.

10 MR. TRYON: Objection. 02:25:45

11 THE WITNESS: I think you need to take that
12 particular statement in context of the other
13 information presented in this article in which the
14 authors clearly demonstrate a 10 to 13 percent
15 advantage in endurance performance for males compared 02:25:57
16 to females relative to the 30 to 60 percent -- I guess
17 I could look up at the table and tell you exactly the
18 percent -- that they're showing for advantage in
19 strength-based sports.

20 And then if you look at the para- -- the 02:26:10
21 sentence right above what you've quoted, they mention
22 about unknown effects on vari- -- a number of the
23 determinants of endurance performance.

24 And so I really can't say too much beyond that
25 that is kind of a speculative statement. 02:26:26

1 BY MR. BLOCK:

2 Q I see. So if you look on page 208, there's a
3 discussion about -- on the right-hand column, there's a
4 discussion about hemoglob- -- hemoglobin levels being
5 reduced with once testosterone is suppressed; correct? 02:26:48

6 A Yes. Second paragraph down, page 208, starts
7 "Circulating hemoglobin."

8 Q Right. And if you -- and then if you look at
9 the next paragraph, it also says (as read):

10 "The typical increase in body fat 02:27:07
11 noted in transgender women may also be
12 a disadvantage for sporting activities
13 (e.g. running) where body weight (or
14 fat distribution) presents a marginal
15 disadvantage." 02:27:21

16 Right?

17 A Correct.

18 Q Okay. All right. I'll leave it at that
19 article.

20 We already -- you mentioned the World Rugby 02:27:36
21 policies, and you already noted that World Rugby allows
22 girls and women -- trans girls and women to -- I guess
23 I'll start over.

24 You already mentioned that World Rugby allows
25 trans women to participate in women's rugby if they've 02:27:55

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1 had puberty blockers and, therefore, not experienced
2 endogenous puberty; right?

3 MR. FRAMPTON: Object to form.

4 Go ahead.

5 I'm sorry. I couldn't tell if you finished 02:28:11
6 the question.

7 Go --

8 MR. FRAMPTON: But objection.

9 Go ahead and answer.

10 THE WITNESS: All right. That is my 02:28:14
11 understanding of what World Rugby has stated.

12 BY MR. BLOCK:

13 Q Okay. So you don't need me to put on the
14 screen a -- a copy of the World Rugby policy to -- to
15 point out that provision, do you? 02:28:27

16 A I would ask you to put it on the screen so we
17 can evaluate if they cite any sources to make that
18 statement.

19 Q Sure. Let's put that -- let's put it on the
20 screen. One second. 02:28:40

21 MS. DUPHILY: Did you say you wanted to put
22 something on the screen or --

23 MR. BLOCK: No, I'll take -- I'll take care of
24 it. I'm just looking up which specific one I want to
25 put up. 02:29:03

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1 MS. DUPHILY: Okay.

2 (Exhibit 77 was marked for identification

3 by the court reporter and is attached hereto.)

4 BY MR. BLOCK:

5 Q All right. So this is going to pop up as 02:29:22

6 marked as Exhibit 77. Let me know when you see it.

7 A All right. Exhibit 077 - World Rugby

8 Transgender...?

9 Q Yes. All right. And you see it says, "Can
10 transgender women play rugby?" right? 02:29:58

11 A Yes.

12 Q Okay. And the first bullet point says (as
13 read):

14 "Transgender women who transitioned
15 pre-puberty and have not experienced 02:30:08

16 the biological effects of testosterone

17 during puberty and adolescence can

18 play women's rugby (subject to

19 confirmation of medical treatment and

20 the timing thereof). 02:30:18

21 Right?

22 A Yes, I see that.

23 Q Okay. The third bullet point also says (as
24 read):

25 "Transgender women can play 02:30:22

1 mixed-gender non-contact rugby."

2 Right?

3 A Yes.

4 Q Okay. And if we -- scroll down.

5 Do you know -- do you know if World Rugby at 02:31:00
6 all talks about any advantages for -- between boys and
7 girls before puberty?

8 A I don't recall this document from World Rugby
9 evaluating differences between boys and girls
10 prepuberty. 02:31:25

11 Q Can you recall any document from World Rugby
12 evaluating that?

13 A Sitting here right now, I cannot recall that
14 World Rugby has evaluated and cited sources on
15 differences before puberty or the effect of puberty 02:31:45
16 blockers on those differences.

17 Q Okay. All right.

18 So that's -- that's World Rugby. So we can
19 put that down as not supporting a policy of excluding
20 trans girls and women from participating in girls and 02:32:04
21 women's sports if they've had puberty blockers;
22 correct?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: I think it's important that
25 that's specific to rugby. 02:32:18

1 BY MR. BLOCK:

2 Q I -- I understand. But the -- the answer to
3 my question is correct; right?

4 MR. FRAMPTON: Object to the form.

5 THE WITNESS: Isn't that what I said? 02:32:26

6 BY MR. BLOCK:

7 Q No. You -- you've made a different statement,
8 so I -- I just -- I need you to answer my question
9 before you make a different statement.

10 So it's fair to say that -- that 02:32:35

11 World Rugby -- this World Rugby policy does not support
12 excluding trans girls and women from girls and women's
13 teams in rugby if they have been on hormone blockers
14 and not experien- -- puberty blockers and not
15 experienced endogenous puberty; correct? 02:32:58

16 MR. FRAMPTON: Object to the form.

17 THE WITNESS: Yes, that is correct, as you
18 stated, the World Rugby statement is about rugby.

19 (Exhibit 78 was marked for identification
20 by the court reporter and is attached hereto.) 02:33:10

21 BY MR. BLOCK:

22 Q Okay. All right. Now let's look at the
23 Harper 2021 article.

24 All right. This is going to appear on your
25 screen as Exhibit 78. Please let me know once you have 02:33:36

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1 it.

2 A All right. Exhibit 078 - Harper.

3 Q All right. See if I can grab -- all right.

4 So if you go to page 7. Let me know when you're there.

5 A All right. Page 7 of 9. 02:34:17

6 Q Yeah. So if you look at the first full
7 paragraph, beginning with "in contrast," do you see
8 that?

9 A Yes.

10 Q Okay. It says (as read): 02:34:35

11 "In contrast to strength-related data,
12 blood cell findings revealed a
13 different time course of change.

14 After 3-4 months on GAHT" -- which is
15 gender-affirming hormone therapy -- 02:34:48

16 "the HCT or Hgb levels of transwomen
17 matched those of cisgender women, with
18 levels remaining stable within the

19 'normal' female range for studies
20 lasting up to 36 months." 02:35:02

21 Do you see that?

22 A Yes, I do.

23 Q Okay. And then if you look at the bottom of
24 the paragraph, so that's the top of the second column,
25 it says (as read): 02:35:19

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1 "Given this, and that the changes in
2 Hgb/HCT follow a different time course
3 than strength changes, sport-specific
4 regulations for transwomen in
5 endurance versus strength sports may 02:35:30
6 be needed."

7 Do you see that?

8 A Yes, I see that.

9 Q Okay. So is this Harper article advocating
10 for a single categorical rule that doesn't distinguish 02:35:41
11 between endurance sports and strength sports?

12 MR. FRAMPTON: Object to the form.

13 THE WITNESS: That would appear to be correct.

14 BY MR. BLOCK:

15 Q Okay. Now, if you look at the bottom right, 02:35:53
16 so the last paragraph, bottom right of page 7, it says
17 (as read):

18 "Although the data we present are
19 meaningful, the effects of GAHT on
20 these parameters, or indeed athletic 02:36:15
21 performance in transgender people who
22 engage in training and competition,
23 remain unknown."

24 Do you see that?

25 A Yes. 02:36:23

1 Q Okay. Great.

2 And then if we move down -- actually, never

3 mind. I'll come -- I'll come back to this article.

4 I -- I have one more to quote for you, and then I'll

5 come back to this article.

02:36:44

6 If you go to page 8, at the very end, the

7 second to last sentence.

8 A Is that the one that starts "Whether

9 transgender"?

10 Q Yes. It says (as read):

02:36:57

11 Whether --

12 A Okay.

13 Q (As read):

14 "Whether transgender and cisgender

15 women can engage in meaningful sport,

02:37:02

16 even after gender-affirming hormone

17 therapy, is a highly debated question.

18 However, before this question can be

19 answered with any certainty, the

20 intricacies and complexity of factors

02:37:12

21 that feed into the development of

22 high-performance athletes warrant

23 further investigation of attributes

24 beyond those assessed herein."

25 Do you see that?

02:37:23

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1 A I see that.

2 Q Okay. So do the authors of this article
3 believe that the information they present here allows a
4 policy maker to determine with any certainty whether
5 transgender and cisgender women can engage in 02:37:38
6 meaningful sport after GAHT?

7 MR. FRAMPTON: Object to the form.

8 MR. TRYON: Objection.

9 THE WITNESS: The authors state that that
10 question cannot be answered. 02:37:52

11 BY MR. BLOCK:

12 Q Okay. And you -- do you think the question
13 can be answered?

14 MR. FRAMPTON: Object to the form.

15 Go ahead. 02:38:05

16 THE WITNESS: I think that the question can be
17 answered sufficiently that we should not do away with
18 existing policies until further information
19 demonstrating the removal of biological male advantage
20 has been obtained. 02:38:18

21 BY MR. BLOCK:

22 Q Okay. Let me ask that again.

23 So the -- the -- the -- because I'm just not
24 sure it came out clearly.

25 So the authors of this article say -- I'm just 02:38:32

1 going to read it again for the record. (As read):

2 "Whether transgender and cisgender

3 women can engage in meaningful sport,

4 even after gender-affirming hormone

5 therapy, is a highly debated question.

02:38:47

6 However, before this question can be

7 answered with any certainty, the

8 intricacies and complexity of factors

9 that feed into the development of

10 high-performance athletes warrant

02:38:56

11 further investigation of attributes

12 beyond those assessed herein."

13 Do you agree or disagree with that statement?

14 MR. FRAMPTON: Object to the form.

15 Go ahead.

02:39:08

16 THE WITNESS: So what is the question I'm

17 agreeing with or not agreeing with?

18 BY MR. BLOCK:

19 Q I -- I believe the question is that until --

20 until the intricacies and complexity of factors that

02:39:24

21 feed into the development of high-performance

22 athletes -- let me ask the question again in a -- in a

23 clearer way.

24 Do you -- the -- the question is, do you -- is

25 the information presented in this article sufficient

02:39:37

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1 for a policy maker to answer with any certainty whether
2 transgender and cisgender women can engage in
3 meaningful sport after gender-affirming hormone
4 therapy?

5 MR. FRAMPTON: Same objection. 02:39:55

6 Go ahead.

7 THE WITNESS: What is meant by "meaningful
8 sport"?

9 BY MR. BLOCK:

10 Q What -- what do you think is meant by 02:39:59
11 "meaningful sport"?

12 A I asked first.

13 Q So you can't answer the question without
14 knowing more what they mean by "meaningful sport"?

15 A Yes, I would like know what they mean more by 02:40:19
16 "meaningful sport."

17 Q Okay. Do you think that -- all right. We can
18 come back to this article later too.

19 So a question about the Hamilton article. You
20 have several times, if I'm right, referenced a 02:40:45
21 statement in the Hamilton article about how women have
22 a right to compete in a protected category; is that
23 right?

24 A Yes, I have stated that.

25 Q Okay. Is there any other portion of the 02:41:02

1 Hamilton article that you remember?

2 MR. FRAMPTON: Object to the form.

3 THE WITNESS: I remember there was a lot of
4 statements in the Hamilton article that seemed
5 confusing and contradictory. 02:41:18

6 BY MR. BLOCK:

7 Q What do you mean by "confusing and
8 contradictory"?

9 A Again, if I'm remembering the article
10 correctly, it seemed like they would make a statement 02:41:30
11 in one place about how trans women retain significant
12 advantages and then in another statement state
13 something about how those advantages wouldn't influence
14 sport performance and then come back and state that
15 those are advantages that influence sport performance. 02:41:48

16 I'm -- I'm grossly generalizing here, but that
17 was my impression because I read a lot of the article.

18 Q Okay. Which portions of the article did you
19 decide to cite in your report?

20 MR. FRAMPTON: Object to the form. 02:42:06

21 THE WITNESS: The -- if I'm remembering
22 correctly, that is a direct quote from Hamilton, that
23 cisgender women deserve to compete in a protected
24 category, and I thought that was a very clear statement
25 from that article. 02:42:22

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1 BY MR. BLOCK:

2 Q Okay. But -- but you had said before that
3 several statements in the article are contradictory;
4 right?

5 A Yes. 02:42:30

6 Q Okay. And in your report, you quoted the
7 statements that you believe support excluding trans
8 girls and women from female sports; is that right?

9 MR. FRAMPTON: Object to the form.

10 THE WITNESS: Yes, I quoted from Hamilton 02:42:56
11 those parts that -- yeah, as you said.

12 BY MR. BLOCK:

13 Q Okay. But you didn't quote any of the
14 portions of the Hamilton article that are contradictory
15 with that; right? 02:43:19

16 MR. FRAMPTON: Object to the form.

17 THE WITNESS: I didn't put quotations in there
18 that were confusing and contradictory to other
19 quotations in the article.

20 BY MR. BLOCK: 02:43:28

21 Q Well, so if there's two quotations in the
22 article, one of them supports allowing trans women to
23 participate and the other one opposes allowing
24 transgender women to participate, you decided to cite
25 to the quote that opposes allowing trans women to 02:43:42

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1 participate; right?

2 MR. FRAMPTON: Object to the form.

3 THE WITNESS: Yes, that is what I quoted.

4 BY MR. BLOCK:

5 Q Okay. And why did you choose to cite the 02:43:55
6 portions that you believe support opposing -- I'll ask
7 again.

8 Why did you choose to cite to the portions
9 that would support excluding transgender women instead
10 of the portions of the article that you think support 02:44:08
11 including them?

12 MR. FRAMPTON: Object to the form.

13 THE WITNESS: Because as I read the article
14 and evaluated the information, I thought it was a clear
15 statement opposing the inclusion of trans women in 02:44:22
16 women's sports.

17 (Exhibit 79 was marked for identification
18 by the court reporter and is attached hereto.)

19 BY MR. BLOCK:

20 Q Okay. So let's look at the -- let's look at 02:44:28
21 the article.

22 So this will appear on your screen in a second
23 as Exhibit 79. Let me know when it appears.

24 A All right. Exhibit 079 - Hamilton.

25 Q Okay. Is this article that you were 02:45:19

1 referencing when you cited to the 2021 Hamilton
2 article?

3 A Yes. I think I also refer to it in my
4 declaration as the FIMS 2021 statement.

5 Q Yeah. What -- what is FIMS? 02:45:33

6 A It's the International Sports Medicine
7 Federation. I think it's French, is why it's like
8 Federation International Medicine Sport. That's why it
9 becomes FIMS.

10 Q Uh-huh. 02:45:46

11 A Beyond that, it's just a -- it's a
12 professional organization of people interested in
13 sports medicine.

14 Q Is -- in your -- your report, you say that the
15 statement is "signed by more than 60 sports medicine 02:46:01
16 experts from prestigious institutions around the
17 world"; is that right?

18 A What page is that on my declaration so I make
19 sure I'm agreeing to a number that --

20 Q Sure. It's paragraph 167, which is page 56 of 02:46:16
21 the PDF. And it's page 51 of the bottom pagination.

22 A All right. Yes, that is what I stated in my
23 declaration.

24 Q Okay. So the views expressed by this body,
25 you think, are entitled to significant weight; right? 02:46:36

1 MR. FRAMPTON: Object to the form.

2 THE WITNESS: It is an -- it is a statement
3 from an organization that is, you know, a respected
4 organization.

5 BY MR. BLOCK: 02:46:58

6 Q Okay. If you turn to page 2 of this, so
7 page 1402, at the top left, there's a little box that
8 says "Key Points."

9 Do you see that?

10 A Yes. 02:47:08

11 Q Okay. Key Points. And the first point there
12 is (as read):

13 "The use of testosterone concentration
14 limits of 5 nmol/L in transwomen and
15 DSD women athletes is a justifiable 02:47:19
16 threshold based on the best available
17 scientific evidence."

18 Did I read that right?

19 A You read that correctly.

20 Q And so of the points in this article 02:47:29
21 highlighted as the key points, this is the first one;
22 right?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: Yes, that appears to be the
25 first highlighted key point. 02:47:39

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1 BY MR. BLOCK:

2 Q Okay. But you didn't choose to mention this
3 first key point in your report; right?

4 A That is correct.

5 Q Okay. Why not? 02:47:49

6 A I disagree with that key point.

7 Q Okay. So you only highlighted -- you only
8 cited to the portions of this article that you agreed
9 with; right?

10 MR. FRAMPTON: Object to the form. 02:47:58

11 THE WITNESS: I cited the information that I
12 agree with after evaluating the other scientific
13 information.

14 BY MR. BLOCK:

15 Q Let's go to 1409. 02:48:22

16 Do you see that?

17 A Yes.

18 Q Okay. So the third bullet point here, when we
19 get to -- this is -- I'm sorry, under -- this whole
20 section of bullet points is under the subsection 5.7 02:48:41

21 "FIMS Consensus Statements for the Integration of DSD
22 Women and Transwomen Athletes into Elite Female Sport";
23 right?

24 A That is correct.

25 Q All right. So based on the foregoing 02:48:53

1 information discussed in the article, these are the
2 consensus statements that FIMS agreed upon; right?

3 A That's a reasonable conclusion, yes.

4 Q Okay. So the third bullet point on the
5 right-hand column is (as read):

02:49:13

6 "Transwomen have a (sic) right to
7 compete in sports. However, cisgender
8 women have the right to compete in a
9 protected category."

10 Is that right?

02:49:26

11 A That's correct.

12 Q Okay. And this bullet point is a bullet point
13 that you included in your report; right?

14 A Correct.

15 Q Okay. Do you know if you included any of the
16 other bullet points in your report?

02:49:33

17 A I don't think I included any of the other
18 bullet points.

19 Q Okay. So let's look at some of those other
20 bullet points.

02:49:46

21 If you go two bullet points down from the --
22 the one we just looked at, it says (as read):

23 "As each sport can vary greatly in
24 terms of physiological demands, we
25 support the view held also by others

02:49:58

1 stating that individual
2 sport-governing bodies should develop
3 their own individual policies based on
4 broader guidelines developed on the
5 best available scientific evidence, 02:50:09
6 determined experimentally from a
7 variety of sources with a particular
8 preference for studies on transwomen
9 and DSD women athletes."

10 Did I read that right? 02:50:19

11 A Yes.

12 Q Okay. So this bullet point supports having
13 different policies developed by different sport's
14 governing bodies; right?

15 MR. FRAMPTON: Object to the form. 02:50:32

16 THE WITNESS: That is a great example of a
17 bullet point that seems contradictory to a previous
18 statement.

19 BY MR. BLOCK:

20 Q Okay. But this statement here does not 02:50:39
21 support an across-the-board policy that applies to all
22 difference types of sports; is that right?

23 MR. FRAMPTON: Same objection.

24 Go ahead.

25 THE WITNESS: That is correct. 02:50:54

1 BY MR. BLOCK:

2 Q And then two more bullet points down, it says

3 (as read):

4 "The use of serum testosterone

5 concentrations as the primary 02:51:17

6 biomarker to regulate the inclusion of

7 athletes into male and female

8 categories is currently the most

9 justified solution as it is supported

10 by the available scientific literature 02:51:27

11 and should be implemented at the elite

12 level, where there is an emphasis on

13 performance enhancement."

14 Did I read that right?

15 A Yes, you read that correctly. 02:51:38

16 Q Okay. And that's -- that's similar to the key

17 point that we talked about before, on the second page;

18 right?

19 A That is similar to that previous key point.

20 Q Okay. And then if you turn the page, the 02:51:46

21 first full -- fir- -- excuse me -- the first full

22 bullet point at the top, you know, again, is --

23 essentially restates the -- the key point that we

24 discussed before; is that right?

25 MR. FRAMPTON: Same objection. 02:52:04

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1 Go ahead.

2 THE WITNESS: Yes. That reiterates the

3 5 nmol/L threshold for testosterone.

4 BY MR. BLOCK:

5 Q Okay. And then the sentence also says that 02:52:14

6 that threshold may be modified as new evidence arises

7 for an event or sport-specific concentrations; is that

8 right?

9 A Yes, that is what it says.

10 Q Okay. And so -- so that -- that bullet point 02:52:28

11 and the other bullet point we looked at about the use

12 of serum testosterone and the other bullet point about

13 having individual policies for individual sports are

14 bullet points that you disagreed with; right?

15 A That is correct. 02:52:49

16 Q Okay. And because you disagreed with them,

17 you did not include them in your report?

18 MR. FRAMPTON: Object to the form.

19 Go ahead.

20 THE WITNESS: That is correct. 02:53:01

21 BY MR. BLOCK:

22 Q Okay. But at least according to this

23 document, the -- all the authors of this statement had

24 agreed on those bullet points as consensus statements;

25 right? 02:53:19

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1 MR. FRAMPTON: Object to the form.

2 THE WITNESS: Assuming that the authors, you
3 know, agreed to it with their signature, that is a
4 reasonable assumption.

5 BY MR. BLOCK: 02:53:31

6 Q Okay. Great.

7 And actually -- in fact -- one second.

8 All right. If you look at page 1403, it
9 says -- at the bottom of that first paragraph, do you
10 see where it says "all statements"? 02:54:16

11 A The bottom of which paragraph?

12 Q Sorry. On the right-hand column, on
13 page 1403, under the "Methods" section, do you see
14 that? The paragraph begins with -- with "here."
15 "Here, we present." 02:54:37

16 A Yes.

17 Q Okay. So the last sentence -- the last two
18 sentences say (as read):

19 "All statements received unanimous
20 approval by all named authors except 02:54:48
21 for the statement on the testosterone
22 limit of 5 nmol/L, which received
23 majority approval and the voting
24 result is included in this (sic)
25 article." 02:54:59

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1 Do you see that?

2 A Yes, I see that.

3 Q All right. So let's go down to what the
4 voting results were for that.

5 Okay. It's actually on the bullet points that 02:55:20
6 we looked at before, on 1410.

7 A On page 1410?

8 Q Uh-huh.

9 A All right.

10 Q Okay. So beginning with -- so the first -- 02:55:38
11 the second full bullet point, it says (as read):

12 "The statement on the testosterone
13 concentration threshold for transwomen
14 and DSD women athletes was the only
15 point of contention for the FIMS 02:55:48
16 Panel. All 70 authors voted, of whom
17 87% were in favour of the 5 nmol/L
18 threshold, 2% of the authors were in
19 favour of a threshold of 8 nmol/L, 2%
20 were in favour of a threshold around 02:56:04
21 the upper testosterone concentration
22 of normal healthy females of
23 0.2-1.7 nmol/L, and 8% of authors were
24 in favour of no change to the limit
25 until further evidence was acquired." 02:56:18

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1 Do you see that?

2 A Yes, I see that.

3 Q Okay. So -- so based on this paragraph, it
4 appears that none of the 70 authors supported a policy
5 of prohibiting trans women from participating, you 02:56:35
6 know, regardless of how low they suppressed their
7 circulating testosterone levels; right?

8 MR. FRAMPTON: Object to the form.

9 THE WITNESS: Can you restate the question?

10 BY MR. BLOCK: 02:56:58

11 Q Sure. Did any of the 70 au- -- 70 authors
12 vote in favor of prohibiting trans women completely
13 from prohibiting -- from -- from participating in
14 women's sports regardless of how low they -- they
15 lowered their levels of circulating testosterone? 02:57:15

16 MR. FRAMPTON: Same objection.

17 THE WITNESS: I would really like to read the
18 article more and not just look at this particular
19 statement on their decision on what they thought were
20 acceptable testosterone levels. 02:57:27

21 BY MR. BLOCK:

22 Q Okay. But based on this paragraph, it appears
23 that none of the 70 authors supported a policy
24 analogous to H.B. 3293; right?

25 MR. FRAMPTON: Same objection. 02:57:46

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1 THE WITNESS: And this is another example of
2 something that is confusing and contradictory to me, is
3 when they say that cisgender women deserve a protected
4 category and then have this kind of a statement.

5 BY MR. BLOCK: 02:57:57

6 Q Well, isn't one way to reconcile it that it's
7 possible to have a protected category for cisgender
8 women if appropriate conditions are placed on the
9 participation of trans women?

10 MR. FRAMPTON: Object to the form. 02:58:17

11 THE WITNESS: My understanding of the
12 intention of the authors is then it would no longer be
13 a protected category.

14 BY MR. BLOCK:

15 Q Well, it would be protected from participation 02:58:24
16 by cisgender men or anyone else with circulating levels
17 of testosterone over the threshold limit; right?

18 MR. FRAMPTON: Same objection.

19 THE WITNESS: Within the -- the field, a
20 protected category of women typically means biological 02:58:38
21 women.

22 BY MR. BLOCK:

23 Q Okay. Let's look at the next document.

24 All right. And, actually, we already marked
25 this one as an exhibit. This is the women's policy 02:58:57

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1 briefing book. So this is Exhibit 69, if you could
2 pull it up again.

3 A All right. Women's Sports Policy Working
4 Group, Briefing Book?

5 Q Yes. 02:59:21

6 All right. If you look at page 15.

7 A All right. Page 15.

8 Q So at the -- the top, you can see this is
9 their Proposed Amendment to the Title IX Regulations.

10 Do you see that? 03:00:04

11 A Yes.

12 Q Okay. So if we scroll down to subsection C,
13 Treatment of Transgender Athletes, do you see that?

14 A Yes.

15 Q Okay. So -- so subsection (c)(1) says (as
16 read): 03:00:12

17 Because trans girls/women who have not

18 begun male puberty do not have

19 significant male linked -- male

20 sex-linked advantages, they shall be 03:00:24

21 included in girls' and women's sports

22 without conditions or limitations.

23 Do you see that?

24 A I see that.

25 Q All right. So to the extent that H.B. 3293 03:00:33

1 prohibits trans girls and women from participating in
2 women's sports, even if they have not experienced
3 endogenous male puberty, the authors of this briefing
4 book would disagree with H.B. 3293, to that extent?

5 MR. FRAMPTON: Object to the form. 03:00:56

6 THE WITNESS: I don't think that I can speak
7 on behalf of these authors for what they agree or
8 disagree with regarding H.B. 323 (sic) -- whatever it
9 is. Sorry.

10 BY MR. BLOCK: 03:01:12

11 Q Okay. So do you think that subsection (c)(1)
12 is consistent with H.B. 3293?

13 MR. FRAMPTON: Object to the form.

14 THE WITNESS: Well, (c)(1) says they shall be
15 included in girls and women's sports. 03:01:28

16 BY MR. BLOCK:

17 Q So the answer to my question is yes?

18 MR. FRAMPTON: Object to the form.

19 BY MR. BLOCK:

20 Q I mean -- no, I'll just ask that again. 03:01:40

21 Can you just give me a "yes" or "no" answer so
22 I don't have to worry about getting a clean transcript?

23 So just -- my question is, is section (c)(1)
24 consistent with H.B. 3293?

25 MR. FRAMPTON: Same objection. 03:01:52

1 Go ahead.

2 THE WITNESS: I think there is an
3 inconsistency there.

4 BY MR. BLOCK:

5 Q Okay. Thank you. 03:02:02

6 If you look at section (c)(3), it says (as
7 read):

8 "Trans girls/women who have
9 experienced all or part of male
10 puberty and who have sufficiently 03:02:14
11 mitigated their male sex-linked
12 advantages – through surgery and/or
13 gender affirming hormones consistent
14 with the rules of their international
15 federations – may participate in 03:02:25
16 girls'/women's sport without
17 additional conditions or limitations."

18 Do you see that?

19 A I see that.

20 Q Okay. And so section (c)(3) is also 03:02:32
21 inconsistent with H.B. 3293; correct?

22 MR. FRAMPTON: Same objection.

23 Go ahead.

24 THE WITNESS: I would say that it may or may
25 not, apparently depending on the rules of the 03:02:44

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1 international federations.

2 BY MR. BLOCK:

3 Q Okay. So are there any international
4 federations, aside from rugby, that categorically
5 exclude girls and women who are transgender from 03:02:58
6 participating in the female category?

7 A There have been a lot of changes in those
8 lately and a lot of organizations debating that, and so
9 I can't say for certain whether there is or is not an
10 organization or no organizations that specifically 03:03:16
11 state that.

12 Q But you consider yourself an expert on this
13 issue, don't you?

14 A Yes. And there's a lot of organizations that
15 are in process of making decisions, and so I can't say 03:03:29
16 what their decisions are when they have not released
17 their decisions.

18 Q All right. Well, has any organization
19 released a decision excluding trans girls and women
20 from participating in the female category, even if they 03:03:43
21 have lowered their circulating testosterone, besides
22 rugby?

23 A I know swimming had a recent change, and I
24 can't remember the exact wording on that, and -- again,
25 that's what I can remember right now at this moment. 03:04:10

1 Q All right. Does -- did the recent change from
2 swimming categorically exclude trans girls and women
3 from participating in women's swimming events?

4 MR. FRAMPTON: Objection to the form.

5 THE WITNESS: I would need to look at the 03:04:28
6 document to be sure.

7 BY MR. BLOCK:

8 Q Isn't it true that the new swimming policy
9 extended the period of hormone suppression to three
10 years? Does that sound familiar to you? 03:04:46

11 A As you say it, it sounds familiar, but I can't
12 be sure if I'm remembering it because you told me I
13 should remember it.

14 Q Okay. Well, we'll -- we'll get you a -- a
15 copy of that. 03:05:05

16 And then subsection (4) says (as read):

17 "Trans girls/women who have
18 experienced all or part of male
19 puberty and who have not, or only
20 insufficiently, mitigated their male 03:05:19

21 sex-linked advantages according to the
22 international federation standards in
23 their sport may be accommodated within
24 girls'/women's sports but not in
25 head-to-head competition with female 03:05:31

1 athletes."

2 Do you see that?

3 A I see that.

4 Q Okay. And so that also is inconsistent with

5 H.B. 3293; correct? 03:05:39

6 MR. FRAMPTON: Object to the form.

7 THE WITNESS: This is somewhat of a confusing

8 statement because how is somehow included in women's

9 sports if they're not competing head-to-head with

10 women. 03:05:50

11 BY MR. BLOCK:

12 Q Well, there's scrimmages and, you know, team

13 practices and other events that are not for trophies.

14 Those are some examples; right?

15 A And I would ask, are they really included, 03:06:07

16 then, if they can only participate in limited aspects

17 of the sport.

18 Q Okay. But my question is whether or not this

19 is consistent with H.B. 3293.

20 And so section (c)(4) is inconsistent with 03:06:22

21 H.B. 3293; correct?

22 MR. FRAMPTON: Object to the form.

23 THE WITNESS: I would need to refer back to

24 the bill to be certain, but I think that your statement

25 is, yes, this is an inconsistency. 03:06:39

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1 BY MR. BLOCK:

2 Q Okay. Let's go back to your report. So
3 that's Exhibit -- oh, I'm sorry, I just want to make
4 sure we got through all of the sources cited in that
5 paragraph of your report. So let me -- let's turn to 03:07:09
6 your report and just make sure we've -- we've looked at
7 all of them because I don't want to leave any out.

8 I believe -- is this on page 8? Or
9 paragraph 8? It's paragraph 8, I believe. On page 7,
10 paragraph 8. 03:07:30

11 Let me know when you're there.

12 A I'm there.

13 Q Okay. So we looked at Coleman 2020; correct?

14 A Yes.

15 Q And Hilton and Lundberg 2021; correct? 03:07:42

16 A Yes.

17 Q And World Rugby?

18 A Yes.

19 Q And Harper 2021?

20 A Yes. 03:07:53

21 Q And Hamilton 2021?

22 A Yes.

23 Q And a briefing book prepared by the Women's
24 Sports Policy Working Group 2021; right?

25 A Yes. 03:08:00

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1 Q Okay. So now that we've looked at all of
2 those, do any of them advocate in favor of excluding
3 girls and women who are trans from participating in
4 women's sports if they have had puberty blockers and
5 not gone through endogenous puberty? 03:08:17

6 MR. FRAMPTON: Object to the form.

7 Go ahead.

8 THE WITNESS: I still think that that
9 statement from Hamilton, where they say women deserve a
10 protected category, with the understanding that 03:08:24
11 protected category, as it is used in the field, means
12 biological women only.

13 BY MR. BLOCK:

14 Q Okay. But other portions of the -- the
15 Hamilton statement don't support that; correct? 03:08:39

16 A Correct.

17 Q Okay. So after reviewing all these sources,
18 let's see, how -- how many of them do we think support
19 excluding girls and women who are transgender if
20 they've experienced puberty and then suppressed their 03:09:04
21 testosterone?

22 MR. FRAMPTON: Object to the form.

23 THE WITNESS: So as we've reviewed these
24 sitting here, I would say Hamilton supports it, with
25 the caveat that it is, at times, contradictory. 03:09:20

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1 BY MR. BLOCK:

2 Q Okay. And did any of these sources support
3 having a single across-the-board rule that applied to
4 all sporting events?

5 MR. FRAMPTON: Object to the form. 03:09:37

6 THE WITNESS: Again, the same statement with
7 Hamilton seems to state that, with the caveat that, I
8 guess, you and I can agree there is some contradiction
9 or confusion there.

10 BY MR. BLOCK: 03:09:51

11 Q Okay. Let's look at page 4 of your report.

12 A All right. Page 4, Overview.

13 Q Yes. If you look at the second bullet point.

14 A Okay.

15 Q It says (as read): 03:10:13

16 "Biological male physiology is the
17 basis for the performance advantage
18 that men, adolescent boys, or male
19 children have over women, adolescent
20 girls, or female children in almost
21 all athletic events."

22 Did I read that right? 03:10:25

23 A Yes, you read that correctly.

24 Q Okay. And so your expert opinions about
25 transgender women are based on the premise that 03:10:34

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1 transgender women who have not had any gender-affirming
2 medical interventions will have the same physiology as
3 cisgender men; right?

4 MR. FRAMPTON: Object to the form.

5 THE WITNESS: Yes, they are still biological 03:10:51
6 males.

7 BY MR. BLOCK:

8 Q And will have the same physiological
9 characteristics that are the basis for the performance
10 advantage; correct? 03:10:59

11 MR. FRAMPTON: Same objection.

12 THE WITNESS: That is correct. Male
13 physiology is the basis of the performance advantage.

14 BY MR. BLOCK:

15 Q So let's go back to that Hamilton article we 03:11:09
16 were discussing. So that is, I believe, Exhibit 79.

17 A All right.

18 Q Okay. Can you go to page 1402, please.

19 A All right. 1402.

20 Q Okay. Pull that up. 03:11:39

21 If you look on the right-hand column, on this
22 little table 1 --

23 A Yes.

24 Q -- do you see that?

25 And then you go -- one, two, three, four -- 03:11:54

1 five items down there, there's a line that begins with
2 "the assumption."

3 Do you see that?

4 A I do see that.

5 Q Okay. And that sentence says (as read): 03:12:04

6 "The assumption that the physiology of
7 elite DSD women and transwomen
8 athletes is the same as elite male
9 athletes is an oversimplified view."

10 Do you see that? 03:12:15

11 A I see that statement.

12 Q Okay. And you didn't cite to that statement
13 in your report; right?

14 A I disagree with that statement.

15 Q And, therefore, because you disagreed with it, 03:12:23
16 you chose not to cite it in your report?

17 MR. FRAMPTON: Object to the form.

18 THE WITNESS: I don't think it's appropriate
19 to cite a statement that I don't think I can defend.

20 BY MR. BLOCK: 03:12:36

21 Q Okay. Do you think it's appropriate to cite
22 an article who -- that contains many statements that --
23 that you don't think you can defend?

24 MR. FRAMPTON: Object to the form.

25 THE WITNESS: Yes. Trying to cite that there 03:12:53

1 is a lot of information out there.

2 BY MR. BLOCK:

3 Q I see.

4 If we go to page 1406 -- well, actually,
5 before going there, were you aware of this statement in 03:13:07
6 the Hamilton article at the time that you wrote your
7 report?

8 A Yes. I cited the Hamilton article. I had
9 read it.

10 Q All right. You -- okay. So you read the 03:13:22
11 whole thing, and then you picked out certain statements
12 to cite?

13 A Correct.

14 Q Okay. So if you go to page 1406.

15 Do you -- do you see your role in this case as 03:13:45
16 an advocate for one side or the other?

17 MR. FRAMPTON: Object to the form.

18 THE WITNESS: I have been retained to give my
19 expert opinion, my expert analysis of the data.

20 BY MR. BLOCK: 03:14:01

21 Q All right. And to -- but do -- do you see
22 your role in this case as presenting the portions of
23 the data that support one side?

24 MR. FRAMPTON: Object to the form.

25 THE WITNESS: I think my role is to present 03:14:19

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1 the data and the information with which I agree with as
2 an expert.

3 BY MR. BLOCK:

4 Q Okay. So you -- you don't see your role in
5 this case as prevent- -- presenting an overview of the 03:14:32
6 data for and against H.B. 3293; right?

7 MR. TRYON: Objection.

8 MR. FRAMPTON: Object to form.

9 THE WITNESS: I think I'm suppo- -- my role is
10 presenting the information from the best of my 03:14:52
11 expertise and analysis of it, which -- what I think is
12 the correct information.

13 BY MR. BLOCK:

14 Q Okay. Not -- so -- so you don't think -- if
15 the Court wanted just an overview of the information 03:15:07
16 out there for and against H.B. 3293, your expert report
17 wouldn't be the source of getting that; right?

18 MR. FRAMPTON: Object to the form.

19 MR. TRYON: Objection.

20 THE WITNESS: I would think that would be a 03:15:27
21 specific request made by the Court to get information.

22 BY MR. BLOCK:

23 Q So -- but you saw -- but you said, when you
24 wrote your blog post, that, you know, the purpose of
25 that blog post was to provide information for educators 03:15:46

1 to use on their own, to teach the subject; right?

2 A That is correct.

3 Q Okay. And so you wrote that blog post with a
4 different purpose in mind than you wrote this document;
5 right?

03:16:03

6 A Yes. The blog post was intended for
7 educators.

8 Q And do you think that it's important for
9 educators to have accurate information?

10 MR. FRAMPTON: Object to the form.

03:16:20

11 THE WITNESS: Yes, educators need accurate
12 information.

13 BY MR. BLOCK:

14 Q Okay. So do -- do you think educators need
15 information different from what the court needs?

03:16:26

16 MR. FRAMPTON: Object to the form.

17 THE WITNESS: Truthful information is truthful
18 information, and I've done my best to present truthful
19 information.

20 BY MR. BLOCK:

03:16:40

21 Q Okay. So let's go to 1406 of -- of Hamilton.

22 MR. TRYON: Before you go on.

23 Mr. Frampton, I can't hear you when you're
24 objecting. If you could speak a little louder, please.

25 MR. FRAMPTON: Sure.

03:17:08

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1 BY MR. BLOCK:

2 Q So in -- in 1406, in the paragraph beginning
3 with the words "despite the lack," do you see that?

4 A Page 1406?

5 Q Left -- left-hand column -- 03:17:23

6 A Okay. Yeah. That's three down?

7 Q Yes.

8 A Okay.

9 Q Okay. If you look at, I think, the third
10 sentence, after it says "Table 1," in parentheses, it 03:17:39
11 says (as read):

12 "Data showing lower baseline isometric
13 torque and muscle volume in transwomen
14 compared to cisgender males highlight
15 the problematic nature of inferring 03:17:50
16 that transwomen and cisgender males
17 are the same, as this ignores the
18 impact of gender-affirming treatments
19 such as HRT and GAS and the
20 psychological effects of gender 03:18:00
21 dysphoria such as low self-esteem,
22 anxiety and/or depression, and
23 becoming socially isolated."

24 Do you see that?

25 A I see that. 03:18:09

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1 Q Okay. Do you disagree that there is data
2 showing lower baseline isometric torque and muscle
3 volume for trans women compared to cisgender women?

4 A So if I'm remembering correctly, reference 51
5 here is probably to the -- the article by Wiik and 03:18:26
6 Lundberg and others. That is the only paper I'm aware
7 of that evaluated isometric torque and muscle volume in
8 transgender individuals.

9 Can I refer to that paper to verify?

10 Q Yeah. If you look at 51, it -- it does go 03:18:40
11 back to the -- the Wiik article.

12 You're saying you want to look directly at the
13 Wiik article?

14 A I would like to.

15 Q All right. Well, we can try to make time for 03:18:51
16 that later.

17 So -- but sitting here, you're saying you're
18 not sure that that sentence accurately reports the --
19 the findings of the Wiik article?

20 A Yeah, I can't remember for -- right now what 03:19:08
21 the baseline data were in the Wiik article, whether
22 they were statistically significant or just numerically
23 different or what.

24 Q Okay.

25 A I can see the graph in my mind, but not in 03:19:22

1 enough detail to completely answer that.

2 Q Okay. Hold on one second. All right.

3 Let's go to the Harper article again. So that
4 is Exhibit 78.

5 A All right. 03:20:13

6 Q So if you go to page 7 of the Harper.

7 A All right.

8 Q All right. There's a paragraph that begins
9 with "of interest."

10 Do you see that? 03:20:42

11 A Right-hand side, first full paragraph, under
12 the table?

13 Q Yes.

14 A Okay.

15 Q All right. Where it says (as read): 03:20:48

16 "Of interest, compared with cisgender
17 men, hormone-naive transwomen

18 demonstrate 6.4%-8.0% lower lean body

19 mass, 6.0%-11.4% lower muscle CSA and

20 approximately 10%-14% lower handgrip 03:21:05

21 strength."

22 Do you see that?

23 A Yes.

24 Q And then it says (as read):

25 "This disparity is noteworthy given 03:21:14

1 that hormone-naive transwomen and
2 cisgender men have similar
3 testosterone levels."

4 Do you see that?

5 A Yes. 03:21:20

6 Q Okay. So do you have any reason to disagree
7 with those reported findings?

8 A I would like to include the next sentence,
9 where it says "explanations for this strength
10 difference are unclear," and continuing on with that, 03:21:37
11 indicating that the trans women may actively refrain
12 from building muscle and/or engaging in disordered
13 eating.

14 So there's a whole statement of speculative
15 explanations for that. 03:21:51

16 Q So do you -- do you have any explanations for
17 those differences?

18 A Well, we have no known biological markers in
19 which we can draw blood or a sample of something to say
20 that a person is transgender. And so it would 03:22:10
21 apparently be a social explanation for why the
22 transgender individuals have lower handgrip strength
23 and smaller muscles.

24 Q Okay. And so does that -- does that affect
25 whether or not having lower handgrip strength and 03:22:31

1 stronger (sic) muscles gives an advantage in athletic
2 performance?

3 MR. FRAMPTON: Object to the form.

4 Go ahead.

5 THE WITNESS: In those cited studies, the 03:22:43
6 handgrip strength of the trans women was in the 90 to
7 95th percentile for cisgender women.

8 So while they may be slightly less strong than
9 a typical male, they are considerably stronger than the
10 typical female. 03:22:57

11 Q Okay. Right. But my -- but my question is,
12 in terms of comparing the strength of trans women to
13 the strength of cis men, don't those studies show that,
14 with respect to those indicators of athletic
15 performance, the trans women are not the same as the 03:23:19
16 cis men?

17 MR. FRAMPTON: Object to the form.

18 THE WITNESS: So, Mr. Block, are you trying to
19 say that smaller, weaker men are trans women?

20 BY MR. BLOCK: 03:23:37

21 Q I'm -- I'm asking my question.

22 Can you answer my question, please?

23 A Could you please clarify the question?

24 Q Yes.

25 Don't those -- doesn't that data show that -- 03:23:47

1 to use the words of Harper -- hormone-naive trans women
2 may not, on average, have the same athletic attributes
3 as cisgender men?

4 MR. FRAMPTON: Object to the form.

5 Go ahead. 03:24:05

6 THE WITNESS: I think there are a whole lot of
7 qualifying statements that need to be included in that.

8 BY MR. BLOCK:

9 Q Okay. And so putting aside the cause of these
10 differences, putting aside whether those causes are, 03:24:22
11 you know, physiological or as a result of social
12 factors, all right, at the end of the day, regardless
13 of the cause, doesn't this data reflect that on a
14 population level, hormone-naive trans women may not, on
15 average, have the same athletic attributes as cisgender 03:24:46
16 men?

17 MR. FRAMPTON: Same objection.

18 Go ahead.

19 THE WITNESS: Those studies were not
20 attempting to evaluate baseline population-wide 03:24:57
21 strength for trans women, and so I don't think that we
22 can accurately extrapolate them to the population of
23 trans women.

24 BY MR. BLOCK:

25 Q Okay. If the participa- -- in the 03:25:08

1 participants on -- in those studies had performed
2 physical fitness tests alongside cisgender men, would
3 it be reasonable to assume that the participants in
4 these studies would not have performed as well on those
5 physical fitness tests? 03:25:26

6 MR. FRAMPTON: Object to form.

7 THE WITNESS: So if we are stating these
8 participants, yes, these participants were not as
9 strong as their comparison group.

10 But I do again want to caveat that neither of 03:25:40
11 these groups really were designed to represent
12 population-wide strength or body mass distributions.

13 BY MR. BLOCK:

14 Q Now, you've discussed in your article -- or
15 your article -- you've discussed in your report, you 03:25:57
16 know, your view that once you have acquired muscle
17 mass, that lowering your circulating testosterone does
18 not sufficiently reduce that muscle mass to eliminate a
19 performance advantage; is that right?

20 A I think you've appropriately characterized 03:26:20
21 what I've stated.

22 Q Thank you.

23 And so in your article, do -- or in your
24 report, do you discuss at all whether if someone lowers
25 their circulating testosterone before acquiring a lot 03:26:37

1 of muscle mass or doing exercises or training, whether
2 having a lower level of testosterone would restrict
3 their ability to add new muscle mass?

4 MR. FRAMPTON: Object to the form.

5 THE WITNESS: I don't think I addressed that 03:27:04
6 topic specifically, as far as how much reducing
7 testosterone and then engaging in training can
8 compensate for reduced testosterone.

9 BY MR. BLOCK:

10 Q Okay. So let's say the -- the trans women in 03:27:16
11 this study and the cis men in the study both engage in
12 the same types of exercise regimens, but the trans
13 women, given their lower baselines and -- have these
14 lower baselines and have lowered their testosterone
15 before engaging in these exercise regimens, is it -- do 03:27:49
16 you have an expert opinion on whether you would expect
17 that these trans women, having lowered their
18 testosterone levels, would be able to acquire new
19 muscle mass at the same degree as the cis men who had
20 not lowered their testosterone levels? 03:28:05

21 MR. FRAMPTON: Object to the form.

22 THE WITNESS: Based on research not cited in
23 my article, because I didn't think it was worth going
24 into in that particular publication -- or that expert
25 declaration, there is information that in middle-aged 03:28:20

1 men who suppress their testosterone and such as a
2 treatment for prostate health problems, they're able to
3 engage in strength training to overcome the lost
4 testosterone. And so that is the closest to a
5 speculative statement we can make regarding of how 03:28:43
6 transgender women, or trans women, would respond to
7 training.

8 BY MR. BLOCK:

9 Q Okay. If we go back to the Hamilton article
10 for a second. I apologize. If you go to 1407 of the 03:29:05
11 Hamilton article.

12 Let me know when you're there, okay?

13 A All right. 1407. I'm there.

14 Q Uh-huh. It says -- halfway through the -- the
15 first paragraph there, there's a sentence that begins 03:30:11
16 "in contrast."

17 Do you see that?

18 A Page 1407. Are we on the left-hand side?

19 Q I'm sorry, on the right-hand side.

20 A Ah, okay. I wondered. 03:30:26

21 There we go. Right-hand side, just after
22 citation to 61, it says, "In contrast."

23 Q Right. It says (as read):

24 "In contrast, when bioavailable

25 testosterone was reduced to castrate 03:30:34

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1 levels in young men, isometric

2 strength did not increase after

3 resistance exercise training."

4 Are you familiar with that study that --

5 that's being referred to?

03:30:48

6 A I am not familiar with that study.

7 Q Okay. If you look at footnote 62 of the

8 article, it says it's a study by Kvorning,

9 K-V-O-R-N-I-N-G, from 2006.

10 Just sitting here today, does -- are you

03:31:09

11 familiar with the Kvorning study from 2006?

12 A That -- that study is not ringing a bell.

13 Q Okay.

14 Okay. The -- the name of the study is

15 "Suppression of endogenous testosterone production

03:31:27

16 attenuates the response to strength training: a

17 randomized, placebo-controlled, and blinded

18 intervention study."

19 Still doesn't ring a bell?

20 A Still not ringing a bell.

03:31:40

21 Q Okay. So if -- if -- from the title of that

22 study, does the study seem to be in tension with the

23 study you just cited to me about how people, the

24 cisgender men, who are on therapies that lower their

25 tosterone -- testosterone being able to have strength

03:32:01

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1 training to overcome the deficit?

2 MR. FRAMPTON: Object to the form.

3 THE WITNESS: Looking at that study and the
4 study I was referring to, it appears that the two are
5 somewhat contradictory, but it's also hard to say with 03:32:21
6 this saying young men and the older -- the other one
7 was dealing with older men.

8 Without looking at both studies side by side,
9 it's really hard to make a comparison.

10 BY MR. BLOCK: 03:32:32

11 Q Okay. So in the -- in the Hamilton article,
12 after the sentence I read, it says (as read):

13 "Assuming these findings are
14 replicated and if extrapolated to
15 elite DSD women athletes and 03:32:46
16 transwomen athletes, they would imply
17 that decreasing bioavailable
18 testosterone concentrations would
19 mitigate to some extent any previous
20 sporting advantage due to the 03:32:57
21 previously high testosterone
22 concentrations."

23 Do you agree with that sentence?

24 MR. FRAMPTON: Object to the form.

25 THE WITNESS: Would mitigate to some extent, 03:33:12

1 yes.

2 BY MR. BLOCK:

3 Q Okay.

4 MR. BLOCK: Can we take a break and go off the

5 record? 03:33:19

6 THE VIDEOGRAPHER: We are off -- off the

7 record at 3:33 p.m.

8 (Recess.)

9 THE VIDEOGRAPHER: We are on the record at

10 3:43 p.m. 03:43:29

11 BY MR. BLOCK:

12 Q Hi, Dr. Brown. I -- I won't keep you too much

13 longer, but -- but I do have some -- I'm going to keep

14 you a little bit longer, though.

15 If -- 03:43:39

16 A No worries.

17 Q If we could go to the Hilton article again,

18 which is marked as Exhibit -- I can't see it on my

19 computer. One sec. The Hilton article is Exhibit 76.

20 A All right. 03:44:05

21 Q All right. Thanks.

22 If you look at page 208, under 4.3.

23 A Yes.

24 Q All right. Just the second sentence there, it

25 says (as read): 03:44:35

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1 "Sex differences in endurance
2 performance are generally smaller than
3 for events relying more on muscle mass
4 and explosive strength."

5 Do you see that? 03:44:43

6 A Yes, I see that.

7 Q Okay. Do you -- do you agree with that
8 statement?

9 A Typically, the differences between males and
10 females for endurance running events or swimming events 03:44:52
11 are somewhere in the range of 10 to 13 percent compared
12 to the 25 percent or more in strength sports.

13 Q So -- so that means you agree with that
14 statement?

15 A Yes. 03:45:08

16 Q Okay. Thanks.

17 All right. If you look at, again, 208, it
18 says -- the paragraph before 4.3.

19 A That big long one?

20 Q Yep. 03:45:49

21 And near -- like two-thirds down, there's a
22 sentence that begins with "furthermore."

23 Do you see that?

24 A Okay. Furthermore, given the (sic) cohorts?

25 Q Yeah. So I -- I just want to direct your 03:46:01

1 attention to the first half of the sentence. This is
2 the Hilton article. And it says (as read):

3 "Furthermore, given that cohorts of
4 transgender women often have slightly
5 lower baseline measurements of muscle 03:46:15
6 and strength than control males."

7 Do you see that?

8 A Yes.

9 Q Okay. And then if you follow that footnote,
10 it goes to footnote 53, and there's an article by 03:46:25
11 someone whose name I can't pronounce. It's Van
12 C-A-E-N-E-G-E-M.

13 Are you able to click through to footnote 53?

14 A Can we agree to call that Van C?

15 Q Oh, good -- good call. Yes. 03:46:46

16 A Yeah, I don't know how to say the last name
17 either.

18 Q Okay. All right.

19 And so could you -- you see the footnote?

20 A Yes. 03:46:52

21 Q Okay. And the footnote is to an article that
22 says, "Preservation of volumetric bone density and
23 geometry in trans women during cross-sex hormonal
24 therapy: a prospective observational study"; right?

25 A Yes. 03:47:06

1 Q Okay. And so Hilton cites this article for
2 the proposition that -- I have to get -- I don't want
3 to misquote her. Hold on -- it says -- cites for the
4 proposition that cohorts of transgender women often
5 have slightly lower baseline measurements of muscle and 03:47:36
6 strength than control males; right?

7 A Yes, that is what it says.

8 Q Okay. And so that's a sim- -- that's similar
9 to the statement in the Hamilton article; right?

10 MR. FRAMPTON: Object to the form. 03:47:47

11 THE WITNESS: I'm sorry, can we go back to
12 what the Hamilton article says, or could you --

13 BY MR. BLOCK:

14 Q Sorry, I'm -- I just want to -- you know, we
15 looked at two sources that talk about how the baseline 03:47:54
16 measurements of trans women are not always the same as
17 the baseline measurements of control cis men. And we
18 looked at two studies saying that, one was the Hamilton
19 study and one was the Harper study. And all I want to
20 do is add this study as -- this article as a third 03:48:13
21 article making that observation.

22 Would you agree that this article is another
23 article that at least makes the observation that the
24 baseline measurements for trans women appear to often
25 be lower than the baseline measurements for cisgender 03:48:36

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1 men who are used as controls?

2 MR. FRAMPTON: Object to the form.

3 THE WITNESS: I -- I think in this article by
4 Hilton, a couple of key points here is where it says
5 "cohorts of transgender women," not saying population 03:48:53
6 representative sampling or anything like that. And
7 then there's a lot of further qualifications that you
8 go on in that sentence emphasizing caution with
9 interpreting these data.

10 BY MR. BLOCK: 03:49:10

11 Q Yeah. Well, so, actually, I have a question
12 for you.

13 So you talk about how these are just cohorts
14 of trans women, not population samples, but you cite to
15 these same articles in support of your argument that -- 03:49:20
16 about the effects of gender-affirming hormones, don't
17 you?

18 A Yes, I cite these articles.

19 Q Okay. So how come -- can't the same caveat be
20 made that whatever conclusions you're drawing about 03:49:39
21 trans women from these articles don't necessarily apply
22 to trans women at a population level?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: These are the best sources of
25 information that we have, and the studies looking at 03:49:54

1 changes over time or changes in strength, muscle mass
2 and such that I've cited, that was the purpose of the
3 study, was to evaluate those changes and then
4 statistically apply it to a population whereas those
5 studies were not designed to get a population baseline 03:50:13
6 sampling for normative data.

7 BY MR. BLOCK:

8 Q Okay. Well, that -- I'm glad you made that
9 point because -- let's go to -- to your expert report
10 where -- on page -- on page -- let me make sure I have 03:50:28
11 the right page.

12 So page 2 -- actually, go to page 1, so I'm
13 not missing anything.

14 Let me know when you're at page 1.

15 A So is page 1 Personal Qualifications and 03:51:02
16 Disclosure?

17 Q It is.

18 A Okay.

19 Q So right before the bullet points, you say (as
20 read): 03:51:08

21 "Articles that I have published that
22 are closely related to topics that I
23 discuss in this white paper
24 include..."

25 And then there's a list. Right? 03:51:14

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1 A Yes.

2 Q And -- and then if you go to the -- the second
3 to last bullet point.

4 A Yes.

5 Q Do you see that? 03:51:26

6 That says (as read):

7 "A study finding (among other things)

8 that height, body mass, and maximal

9 oxygen consumption were higher in a

10 group of male NCAA Division 2 distance 03:51:36

11 runners, while women NCAA Division 2

12 distance runners had higher percent

13 body fat."

14 Do you see that?

15 A Yes. 03:51:48

16 Q Okay. And we discussed this study during our
17 previous deposition. Do you remember that?

18 A Yeah. It's a fun paper.

19 Q Yeah. But we discussed how this data about
20 height, body mass and oxygen consumption was base- -- 03:52:00

21 was data -- baseline data that you took of -- of these

22 athletes, but the purpose of the study was not to do a

23 population-wide, you know, sampling of -- of height,

24 body mass and oxygen consumption; right?

25 A Yes, that is correct. 03:52:22

1 Q Okay. So -- so what you just said before,
2 when we were talking about the -- the cohorts of trans
3 women, you had said, well, the purpose of those studies
4 was not to provide population sampling on, you know,
5 the physiological characteristics of -- of the trans 03:52:43
6 women in the study; therefore, you couldn't extrapolate
7 that as a general matter, all trans women were likely
8 to have similar characteristics.

9 Is that -- is that a fair summary of what you
10 had just said? 03:52:59

11 MR. FRAMPTON: Object to the form.

12 THE WITNESS: Yes, that is a fair summary.

13 BY MR. BLOCK:

14 Q But in your description of your study here, do
15 you think a reader, reading that sentence, would think 03:53:10
16 that you are making the statement that as a general
17 matter, on a population-wide basis, you found in your
18 study that height, body mass and mox -- maximal oxygen
19 consumption were higher for the male NCAA competitors
20 compared to female NCAA competitors? 03:53:32

21 MR. FRAMPTON: Object to the form.

22 THE WITNESS: I'm kind of unclear with what
23 you're trying to ask.

24 BY MR. BLOCK:

25 Q Yeah, so I'm saying that this happened to be 03:53:45

1 the data for a particular cohort that you're doing a
2 different study on; correct?

3 MR. FRAMPTON: Object to the form.

4 THE WITNESS: So, yes, as I've stated, this is
5 a group of male and female Division II distance 03:53:57
6 runners.

7 BY MR. BLOCK:

8 Q Okay. And so that study wouldn't allow you to
9 draw any conclusions generalizable to other males and
10 females about, you know, what their comparative height, 03:54:10
11 body mass and oxygen consumption would be; right?

12 MR. FRAMPTON: Same objection.

13 THE WITNESS: I don't think I've ever
14 purported that that was the purpose of this study.

15 BY MR. BLOCK: 03:54:24

16 Q You don't think that someone reading that
17 sentence, where it says the study -- a study finding
18 these things, you don't think someone reading that
19 sentence would have the impression that that was the
20 purpose of the study? 03:54:40

21 MR. FRAMPTON: Object to the form.

22 THE WITNESS: Those were findings of the
23 study. That's what I have states, is those are
24 findings of the study.

25 ///

1 BY MR. BLOCK:

2 Q Was the rest of the -- is the rest of the
3 study relevant to the topic of this case?

4 A You mean is that the male athletes were faster
5 than the female athletes? 03:55:10

6 Q I mean -- what -- what I mean is you -- you --
7 you select this finding from the study, but were any
8 other findings from that study relevant to this case?

9 A Yes, we could say that. For the same heart
10 rate, the men were faster than the women. 03:55:32

11 Q Okay. Okay. Let's go to -- to page 4.

12 A On my declaration?

13 Q Yeah. Or your report.

14 A Yeah, just make sure we're on the same -- so
15 this is the overview? 03:55:54

16 Q Yes. And I just want to direct your attention
17 to the three bullet points that you've listed there.

18 Do you see them?

19 A Yes, I do.

20 Q Okay. Are you offering any expert opinions in 03:56:11
21 this case other than the opinions contained in those
22 three bullet points?

23 MR. FRAMPTON: Object to the form.

24 THE WITNESS: Well, I -- I mean, those are the
25 basis for everything else, those three bullet points, 03:56:35

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1 and most of the other information is trying to support
2 and substantiate why I drew those conclusions.

3 BY MR. BLOCK:

4 Q Okay. So -- but there are no -- I appreciate
5 that. 03:56:48

6 There's -- you're not offering an opinions on
7 any other issue, are you?

8 MR. FRAMPTON: Object to the form.

9 THE WITNESS: Kind of unclear what you're
10 asking. 03:57:07

11 I think it states there fairly clearly what
12 I'm -- the -- the statements I'm trying to make.

13 BY MR. BLOCK:

14 Q Yeah, I'm just trying to nail down the full
15 scope of the expert opinions you're offering here. And 03:57:24
16 so you're not offering any expert opinions on the
17 appropriateness of particular modes of healthcare for
18 trans people; is that right?

19 A That is correct, I'm not offering an opinion
20 on healthcare for transgender individuals. 03:57:45

21 Q Okay. And you are not -- you discuss these
22 bullet points, what you say are advantages, but you are
23 not offering an opinions on whether particular policies
24 are fair or unfair in light of the data that you
25 present here, are you? 03:58:08

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1 MR. FRAMPTON: Object to the form and scope.

2 Go ahead.

3 THE WITNESS: So I think this comes back to
4 our previous discussion where we discuss the
5 irreconcilable differences between inclusion and 03:58:21
6 fairness.

7 BY MR. BLOCK:

8 Q Yes, it does, which is why I'm coming back to
9 it.

10 So I -- I -- you know, I understand that, you 03:58:37
11 know, you have laid out your criteria, your -- excuse
12 me -- your credentials for proving -- for providing an
13 expert opinion on whether an advantage exists, and so
14 I -- I -- I just want to find out whether or not, you
15 know, the -- in light of that information you present 03:58:58
16 regarding the existence or nonexistence of an
17 advantage, whether a particular policy maker will then
18 decide that something is fair or unfair, is not -- is
19 not something that you are providing an expert opinion
20 on; right? 03:59:18

21 MR. FRAMPTON: Same objection.

22 Go ahead.

23 THE WITNESS: So I'm trying to detail the
24 advantages, the differences between males and females
25 biologically, documenting the advantages in athletic 03:59:30

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1 performance the males have over female, documenting
2 what we know regarding transgender individuals and
3 their -- the treatments that they might receive and how
4 that would affect athletic advantages, and then
5 bringing up the point that there is, apparently, some 03:59:47
6 irreconcilable differences -- I'm not sure if that's
7 the best way to state it, but I state it in the
8 document -- between goals of inclusion and fairness.

9 BY MR. BLOCK:

10 Q Yeah, I guess -- someone reading your 04:00:00
11 report -- you know, let's say someone reads all the
12 information in the report, absorbs all the facts, you
13 know, and then, you know, is asked, based on all the
14 facts presented in your report, is it fair to include
15 trans girls and women or not to include them, would you 04:00:21
16 have any greater expertise in answering that ultimate
17 question than anyone else who has absorbed the facts
18 you presented in your report?

19 MR. FRAMPTON: Object to the form.

20 THE WITNESS: Are you saying does every piece 04:00:46
21 of knowledge I've ever written put on -- on this
22 document and someone would know everything that I know?

23 BY MR. BLOCK:

24 Q No. I'm saying that based on these facts, you
25 know, someone needs to draw a conclusion about what's 04:01:02

1 fair, okay? And so my question is -- you know, I
2 understand that you're providing an expert -- you know,
3 opinions on the -- the -- the -- the facts you say in
4 your report. All my question is that, you know, the
5 second step of drawing a conclusion about what's fair 04:01:18
6 or unfair is not something that you are an expert on;
7 right?

8 MR. FRAMPTON: Object to the form.

9 Go ahead.

10 THE WITNESS: I would hope that someone would 04:01:33
11 read my document, and they're also going to read the
12 document from the other experts, weigh the evidence and
13 make a decision on what is -- what is fair.

14 BY MR. BLOCK:

15 Q And -- and you are not offering, you know, 04:01:52
16 that decision, that ultimate decision, as part of your
17 expert report; right? That's for someone else to
18 decide?

19 MR. FRAMPTON: Object to the form.

20 THE WITNESS: Yes, that is my intention, is 04:02:16
21 that someone else will weigh the information, weigh the
22 data and make their decision.

23 MR. BLOCK: All right. Thank you, Dr. Brown.

24 I have no further questions.

25 MR. FRAMPTON: Anyone else? 04:02:37

1 MS. GREEN: This is Roberta Green on behalf of
2 WVSSAC. No questions.

3 THE VIDEOGRAPHER: Can we go off the record,
4 Attorney Block?

5 MR. BLOCK: Sure. Unless anyone else wants to 04:02:52
6 say on the record that they don't have any other
7 questions.

8 MR. CROPP: This is Jeffrey Cropp with
9 Harrison County Board of Education and Dora Stutler. I
10 have no question. 04:02:57

11 MR TAYLOR: Michael Taylor on behalf of the
12 State BOE and Superintendent Burch. No questions.

13 MR. TRYON: Dave Tryon. No questions.

14 MR. FRAMPTON: Hal Frampton for the
15 intervenor. No questions.

16 It sounds like we're done.

17 MR. BLOCK: See you in another two years,
18 Dr. Brown.

19 (Simultaneous speaking.)

20 MS. DUPHILY: Hold on. Let's take this off 04:03:24
21 the record. One second.

22 THE VIDEOGRAPHER: We are off the record at
23 4:03 p.m., and this concludes today's testimony given
24 by Gregory Brown.

25 The total number of media used was eight and 04:03:31

1 will be retained by Veritext Legal Solutions.

2 (TIME NOTED: 4:03 p.m.)

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I, GREGORY BROWN, Ph.D., do hereby declare under penalty of perjury that I have read the foregoing transcript; that I have made any corrections as appear noted, in ink, initialed by me, or attached hereto; that my testimony as contained herein, as corrected, is true and correct.

EXECUTED this _____ day of _____,
20____, at _____, _____.
(City) (State)

GREGORY BROWN, Ph.D.

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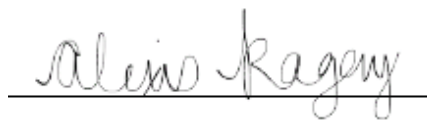
I, the undersigned, a Certified Shorthand Reporter of the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place herein set forth; that any witnesses in the foregoing proceedings, prior to testifying, were placed under oath; that a record of the proceedings was made by me using machine shorthand which was thereafter transcribed under my direction; further, that the foregoing is an accurate transcription thereof.

I further certify that I am neither financially interested in the action nor a relative or employee of any attorney of any of the parties.

IN WITNESS WHEREOF, I have this date subscribed my name.

Dated: April 5, 2022



ALEXIS KAGAY

CSR NO. 13795

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

B.P.J., by her next friend and mother, HEATHER JACKSON,

Plaintiff,

vs.

WEST VIRGINIA STATE BOARD OF EDUCATION; HARRISON COUNTY BOARD OF EDUCATION; WEST VIRGINIA SECONDARY SCHOOLS ACTIVITIES COMMISSION; W. CLAYTON BURCH, in his official capacity as State Superintendent, DORA STUTLER, in her official capacity as the Harrison County Superintendent, and the STATE OF WEST VIRGINIA,

Defendants,

and

LAINY ARMISTEAD,

Defendant-Intervenor.

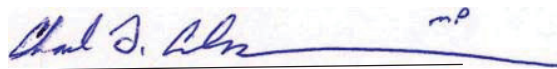
Case No. 2:21-cv-00316

Hon. Joseph R. Goodwin

DECLARATION OF DR. CHAD T. CARLSON, M.D., FACSM

I, Dr. Chad T. Carlson, pursuant to 28 U.S. Code § 1746, declare under penalty of perjury under the laws of the United States of America that the facts contained in my Expert Report of Dr. Chad T. Carlson, M.D., FACM prepared for *B.P.J. v. West Virginia*, attached hereto, are true and correct to the best of my knowledge and belief, and that the opinions expressed therein represent my own expert opinions.

Executed on February 23, 2022.



Chad T. Carlson, MD

**Expert Report of Dr. Chad Thomas Carlson, M.D., FACM
prepared for *B.P.J. v. West Virginia*
February 23, 2022**

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INTRODUCTION

Up to the present, the great majority of news, debate, and even scholarship about transgender participation in female athletics has focused on track and field events and athletes, and the debate has largely concerned questions of fairness and inclusion. However, the transgender eligibility policies of many high school athletic associations in the United States apply with equal force to all sports, including sports in which players frequently collide with each other, or can be forcefully struck by balls or equipment such as hockey or lacrosse sticks. And in fact, biologically male transgender athletes have competed in a wide range of high school, collegiate, and professional girls' or women's sports, including, at least, basketball,¹ soccer,² volleyball,³ softball,⁴ lacrosse,⁵ and even women's tackle football.⁶

¹https://www.espn.com/espnw/athletes-life/story/_/id/10170842/espnw-gabrielle-ludwig-52-year-old-transgender-women-college-basketball-player-enjoying-best-year-life (accessed 2/17/22)

²https://www.unionleader.com/news/education/nh-bill-limits-women-s-sports-to-girls-born-female/article_d1998ea1-a1b9-5ba4-a48d-51a2aa01b910.html;
<https://www.outsports.com/2020/1/17/21069390/womens-soccer-mara-gomez-transgender-player-argentina-primera-division-villa-san-marcos> (accessed 6/20/21)

³<https://news.ucsc.edu/2016/09/challenging-assumptions.html> (accessed 6/20/21);
<https://www.outsports.com/2017/3/20/14987924/trans-athlete-volleyball-tia-thompson> (accessed 6/20/21)

⁴<https://www.foxnews.com/us/californias-transgender-law-allows-male-high-schooler-to-make-girls-softball-team> (accessed 6/20/21)

⁵<https://savewomenssports.com/f/emilys-story?blogcategory=Our+Stories> (accessed 6/20/21)

⁶<https://www.outsports.com/2017/12/13/16748322/britney-stinson-trans-football-baseball> (accessed 6/20/21); <https://www.mprnews.org/story/2018/12/22/transgender-football-player-prevails-in-lawsuit> (accessed 6/20/21)

The science of sex-specific differences in physiology, intersecting with the physics of sports injury, leaves little doubt that participation by biological males in these types of girls' or women's sports, based on gender identity, creates significant additional risk of injury for the biologically female participants competing alongside these transgender athletes.

In 2020, after an extensive review of the scientific literature, consultation with experts, and modeling of expected injuries, World Rugby published revised rules governing transgender participation, along with a detailed explanation of how the new policy was supported by current evidence. World Rugby concluded that "there is currently no basis with which safety and fairness can be assured to biologically female rugby players should they encounter contact situations with players whose biological male advantages persist to a large degree," and that after puberty, "the lowering of testosterone removes only a small proportion of the documented biological differences." Hence, World Rugby concluded that biological men should not compete in women's rugby. (World Rugby Transgender Women Guidelines 2020.) World Rugby has been criticized by some for its new guidelines, but those criticisms have often avoided discussions of medical science entirely, or have asserted that modeling scenarios can overstate true risk. What cannot be denied, however, is that World Rugby's approach is evidence-based, and rooted in concern for athlete safety. As a medical doctor who has spent my career in sports medicine, it is my opinion that World Rugby's assessment of the evidence is scientifically sound, and that injury modeling

meaningfully predicts that biologically male transgender athletes do constitute a safety risk for the biologically female athlete in women's sports.

In a similar vein, in 2021, the UK Sports Councils' Equality Group released new guidance for transgender inclusion in organized sports. This guidance was formulated after extensive conversations with stakeholders, a review of scientific findings related to transgender athletes in sport through early 2021, and an assessment of the use by some sport national governing bodies of case-by-case assessment to determine eligibility. Noteworthy within these stakeholder consultations was a lack of consensus on any workable solution, as well as concerns related to athlete safety and "adherence to rules which give sport validity." The Literature Review accompanying the guidance document further noted that "[t]here are significant differences between the sexes which render direct competition between males and females . . . unsafe in sports which allow physical contact and collisions." (UK Sports Councils' Equality Group Literature Review 2021 at 1.) Their review of the science "made clear that there are retained differences in strength, stamina and physique between the average woman compared with the average transgender woman....with or without testosterone suppression." (UK Sports Councils' Equality Group Guidance at 3.) This was also reflected in their ten guiding principles, stating that physical differences between the sexes will "impact safety parameters in sports which are combat, collision or contact in nature." (UK Sports Councils' Equality Group Guidance 2021 at 7.) Ultimately, UK Sport

concluded that the full inclusion of transgender athletes in women's sports "cannot be reconciled within the current structure of sport," stating that "the inclusion of transgender people into female sport cannot be balanced regarding transgender inclusion, fairness and safety in gender-affected sport where there is meaningful competition due to retained differences in strength, stamina and physique between the average woman compared with the average transgender woman..., with or without testosterone suppression." (UK Sports Councils' Equality Group Guidance 2021 at 6.) Finally, UK Sport affirmed the use of sex categorization in sport, along with age and disability, as important for the maintenance of safety and fairness. (UK Sports Councils' Equality Group Guidance 2021 at 7-8.)

Unfortunately, apart from World Rugby's careful review and the recent release of UK Sports Councils' guidance, the public discourse is lacking any careful consideration of the question of safety. As a physician who has spent my career caring for athletes, I find this silence about safety both surprising and concerning. It is my hope through this white paper to equip and motivate sports leagues and policy makers to give adequate attention to the issue of safety for female athletes when transgender policies are being considered. I first explain the nature and causes of common sports injuries. I then review physiological differences between male and female bodies that affect the risk and severity of injuries to females when biological males compete in the female category, and

explain why testosterone suppression does not eliminate these heightened risks to females. Finally, I explain certain conclusions about those risks.

CREDENTIALS

1. I am a medical doctor practicing Sports Medicine, maintaining an active clinical practice at Stadia Sports Medicine in West Des Moines, Iowa. I received my M.D. from the University of Nebraska College of Medicine in 1994 and completed a residency in family medicine at the University of Michigan in 1997.

2. Following my time in Ann Arbor, I matched to a fellowship in Sports Medicine at Ball Memorial Hospital in Muncie, Indiana, training from 1997 to 1999, with clinical time split between Central Indiana Orthopedics, the Ball State Human Performance Laboratory, and the Ball State University training room. I received my board certification in Sports Medicine in 1999, which I continue to hold. Since residency training, my practice has focused on Sports Medicine—the treatment and prevention of injuries related to sport and physical activity.

3. Since 1997, I have served in several clinical practices and settings as a treating physician, including time as team physician for both the University of Illinois and Ball State University, where I provided care to athletes in several sports, including football, ice hockey, basketball, field hockey, softball, gymnastics, soccer, and volleyball. In the course of my career, I have provided coverage for NCAA Power Five Conference championships and NCAA National

Championship events in basketball, field hockey and gymnastics, among other sports, as well as provided coverage for national championship events for U.S.A. gymnastics, and U.S. Swimming and Diving. I have also covered professional soccer in Des Moines.

4. Since 2006, I have been the physician owner of Stadia Sports Medicine in West Des Moines, Iowa. My practice focuses on treatment of sports and activity-related injury, including concussive injury, as well as problems related to the physiology of sport.

5. I have served in and provided leadership for several professional organizations over the course of my career. In 2004, I was designated a Fellow of the American College of Sports Medicine (ACSM). I have served on ACSM's Health and Science Policy Committee since 2010, and for a time chaired their Clinical Medicine Subcommittee. From 2009 to 2013, I served two elected terms on the Board of Directors of the American Medical Society for Sports Medicine (AMSSM), and during that time served as Chair of that body's Practice and Policy Committee. I was subsequently elected to a four-year term on AMSSM's executive committee in 2017, and from 2019-20, I served as AMSSM's President. AMSSM is the largest organization of sports medicine physicians in the world. I gained fellowship status through AMSSM in 2020—my first year of eligibility. My work for ACSM and AMSSM has brought with it extensive experience in public policy as relates to Sports Medicine.

6. In 2020, I was named as AMSSM's first board delegate to the newly-constituted Physical Activity Alliance. I am a named member of an NCAA advisory group on COVID-19, through which I provided input regarding the cancellation of the basketball tournament in 2020. I also serve as a member of the Iowa Medical Society's Sports Medicine Subcommittee and have been asked to serve on the Iowa High School Athletic Association's newly-forming Sports Medicine Advisory Committee.

7. I have served as a manuscript reviewer for organizational policy pronouncements, and for several professional publications, most recently a sports medicine board review book just published in 2021. I have published several articles on topics related to musculoskeletal injuries in sports and rehabilitation, which have been published in peer-reviewed journals such as Clinical Journal of Sports Medicine, British Journal of Sports Medicine, Current Reviews in Musculoskeletal Medicine, Athletic Therapy Today, and the Journal of Athletic Training. In conjunction with my work in policy advocacy, I have helped write several pieces of legislation, including the initial draft of what became the Sports Medicine Licensure Clarity Act, signed into law by President Trump in 2018, which eases the restrictions on certain practitioners to provide health services to athletes and athletic teams outside of the practitioner's home state. A list of my publications over the past ten (10) years is included as an appendix to this report.

8. In the past four years, I have not testified as an expert witness in a deposition or at trial.

9. I am being compensated for my services as an expert witness in this case at the rates of \$650 per hour for consultation, \$800 per hour for deposition testimony, and \$3,500 per half-day of trial testimony.

I. OVERVIEW

10. In this statement, I offer information and my own professional opinion on the potential for increased injury risk to females in sports when they compete against biologically male transgender athletes.⁷ At many points in this statement, I provide citations to published, peer-reviewed articles that provide relevant and supporting information to the points I make.

11. The principal conclusions that I set out in this white paper are as follows:

- a. Government and sporting organizations have historically considered the preservation of athlete safety as one component of competitive equity.
- b. Injury in sport is somewhat predictable based on modeling assumptions that take into account relevant internal and external risk factors.

⁷ In the body of this paper, I use the terms “male” and “female” according to their ordinary medical meaning—that is to say, to refer to the two biological sexes. I also use the word “man” to refer to a biologically male human, and “woman” to refer to a biologically female human. In the context of this opinion, I include in these categories non-syndromic, biologically-normal males and females who identify as a member of the opposite sex, including those who use endogenous hormone suppression to alter their body habitus. In contexts that are not focused on questions of biology and physiology, terms of gender are sometimes used to refer to subjective identities rather than to biological categories – something I avoid for purposes of a paper focused on sports science

c. Males exhibit large average advantages in size, weight, and physical capacity over females—often falling far outside female ranges. Even before puberty, males have a performance advantage over females in most athletic events. Failure to preserve protected female-only categories in contact sports (broadly defined) will ultimately increase both the frequency and severity of injury suffered by female athletes who share playing space with these males.

d. Current research supports the conclusion that suppression of testosterone levels by males who have already begun puberty will not fully reverse the effects of testosterone on skeletal size, strength, or muscle hypertrophy, leading to persistence of sex-based differences in power, speed, and force-generating capacity.

12. In this white paper, I use the term “contact sports” to refer broadly to all sports in which collisions between players, or collisions between equipment such as a stick or ball and the body of a player, occur with some frequency (whether or not permitted by the rules of the game), and are well recognized in the field of sports medicine as causes of sport-related injuries.⁸ The 1975 Title IX implementing regulations (34 CFR § 106.41) say that “for purposes of this [regulation] contact sports include boxing, wrestling, rugby, ice hockey, football, basketball, *and other sports* the purpose or major activity of which involves bodily contact.” Certainly, all of the sports specifically named in the regulation fall within my definition of “contact sport.” Mixed martial arts, field hockey (Barboza 2018), soccer (Kuczinski 2018), rugby (Viviers 2018), lacrosse

⁸ It is common to see, within the medical literature, reference to distinctions between “contact” and “collision” sports. For purposes of clarity, I have combined these terms, since in the context of injury risk modeling, there is no practical distinction between them.

(Pierpoint 2019), volleyball,⁹ baseball, and softball also involve collisions that can and do result in injuries, and so also fall within my definition.

II. A BRIEF HISTORY OF THE RATIONALE FOR SEPARATION OF SPORT BY SEX

13. World Rugby is correct when it notes that “the women’s category exists to ensure protection, safety, and equality” for women. (World Rugby Transgender Women Guidelines 2020.) To some extent, those in charge of sport governing bodies in the modern era have always recognized the importance of grouping athletes together based on physical attributes, in order to ensure both safety and competitive balance. Weight classifications have existed in wrestling since it reappeared as an Olympic event in 1904. Women and men have participated in separate categories since the advent of intercollegiate sporting clubs early in the 20th century. When Title IX went into effect in 1975, there were just under 300,000 female high school athletes, and fewer than 10,000 female collegiate athletes. With the changes that resulted from Title IX, it was assumed that newly-available funds for women in sport would ensure the maintenance of existing, or creation of new, sex-segregated athletic teams that would foster greater participation by women. This has been borne out subsequently; by the first half of the 1980’s these numbers had risen to 1.9 million and nearly 100,000 respectively. (Hult 1989.)

⁹ See <https://www.latimes.com/sports/story/2020-12-08/stanford-volleyball-hayley-hodson-concussions-cte-lawsuit>, and <https://volleyballmag.com/corinneatchison/> (both accessed 6/20/21).

14. The rationale for ongoing “separate but equal” status when it came to sex-segregated sports was made clear within the language of the original implementing regulations of Title IX , which, acknowledging real, biologically-driven differences between the sexes, created carve-out exceptions authorizing sex-separation of sport for reasons rooted in the maintenance of competitive equity. Importantly, the effect of these innate sex-based differences on the health and safety of the athlete were acknowledged by the express authorization of sex-separated teams for sports with higher perceived injury risk—i.e., “contact sports.” (Coleman 2020.)

15. In the almost half century since those regulations were adopted, the persistent reality of sex-determined differences in athletic performance and safety has been recognized by the ongoing and nearly universal segregation of men’s and women’s teams—even those that are not classically defined as being part of a contact or collision sport.

16. Now, however, many schools and sports leagues in this country are permitting males to compete in female athletics—including in contact sports—based on gender identity. In my view, these policies have been adopted without careful analysis of safety implications. Other researchers and clinicians have addressed questions of the negative impact of such policies on fairness, or equality of athletic experiences for girls and women, in published articles, and in court submissions. One recent review of track and field performances, including sprints, distance races and field events, noted that men surpass the

top female performance in each category between 1000 and 10,000 times *each year*, with hundreds or thousands of men beating the top women in each event. (Coleman & Shreve.) Although this was not their primary focus, World Rugby well-summarized the point when it observed that in a ranking list of the top thousand performances in most sports, every year, *every one* will have been achieved by a biological male. (World Rugby Transgender Women Guidelines 2020.) Although most easily documented in athletes who have gone through puberty, these differences are not exclusively limited to post-pubescent athletes either.

17. I have reviewed the expert declaration of Gregory A. Brown, Ph.D., FACM of February 23, 2022, provided in this case, which includes evidence from a wide variety of sources, including population-based mass testing data, as well as age-stratified competition results, all of which support the idea that prepubertal males run faster, jump higher and farther, exhibit higher aerobic power output, and have greater upper body strength (evidenced by stronger hand grip and better performance with chin-ups or bent arm hang) than comparably aged females. This performance gap is well-documented in population-based physiologic testing data that exists in databases such as the Presidential Fitness Test, the Eurofit Fitness test, and additional mass testing data from the UK and Australia. Collectively, this data reveals that pre-pubertal males outperform comparably aged females in a wide array of athletic tests including but not limited to the countermovement jump test, drop jump test, change of direction

test, long jump, timed sit-up test, the 10 X 5 meter shuttle run test, the 20 meter shuttle run test, curl-ups, pull-ups, push-ups, one mile run, standing broad jump, and bent arm hang test. Dr. Brown further references studies showing a significant difference in the body composition of males and females before puberty. In sum, a large and unbridgeable performance gap between the sexes is well-studied and equally well-documented, beginning in many cases before puberty. In this white paper, I focus on some of these differences as they touch on the question of athlete safety.

III. UNDERSTANDING THE CAUSES OF SPORTS INJURIES

18. The causes for injury in sport are multifactorial. In recent decades, medical researchers have provided us an evolving understanding of how sports injuries occur, as well as the factors that make them more or less probable, and more or less severe. Broadly speaking, there are two ways of modeling injury: the epidemiological model, and the biomechanical model. These models are not mutually exclusive, but provide complementary conceptual frameworks to help us stratify risk in sport.

A. The epidemiological model of injury

19. From a practical standpoint, sports medicine researchers and clinicians often use the “epidemiological model” to explain, prevent and manage sports injuries. Broadly speaking, this model views an injury in sport as the product of internal and external risk factors, triggered by an inciting event. In other words, a given injury is “caused” by a number of different factors that are

unique to a given situation. (Meeuwise 1994.) When the interplay of these factors exceeds the injury threshold, injury occurs. One example of how this interplay might work would be a female distance runner in track who develops a tibial stress fracture, with identified risks of low estrogen state from amenorrhea (suppression of menses), an aggressive winter training program on an indoor tile surface, and shoes that have been used for too many miles, and are no longer providing proper shock absorption. Most risk factors ebb and flow, with the overall injury risk at any given time fluctuating as well. Proper attention to risk factor reduction *before* the start of the sports season (including appropriate rule-making) is the best way to reduce actual injury rates *during* the season.

20. As alluded to, the risk factors associated with injury can be broadly categorized as internal or external. Internal risk factors are internal to the athlete. These include relatively fixed variables, such as the athlete's age, biological sex, bone mineral density (which affects bone strength) and joint laxity, as well as more mutable variables such as body weight, fitness level, hydration state, current illness, prior injury, or psychosocial factors such as aggression.

21. External risk factors are, as the name suggests, external to the athlete. These include non-human risks such as the condition of the playing surface or equipment, athletic shoe wear, or environmental conditions. Other external risk factors come from opposing competitors, and include such

variables as player size, speed, aggressiveness, and overall adherence to the rules of the game. As already mentioned, these risks can be minimized through the proper creation and enforcement of rules, as well as the appropriate grouping of athletes together for purposes of competition. To the latter point, children don't play contact sports with adults and, in the great majority of cases, men and women compete in categories specific to their own biological sex. Certainly these categorical separations are motivated in part by average performance differences and considerations of fairness and opportunity. But they are also motivated by safety concerns. When properly applied, these divisions enhance safety because, when it comes to physical traits such as body size, weight, speed, muscle girth, and bone strength, although a certain amount of variability exists within each group, the averages and medians differ widely *between* the separated groups.¹⁰

22. Thus, each of these commonly utilized groupings of athletes represents a pool of individuals with predictable commonalities. Epidemiological risk assessment is somewhat predictable and translatable as long as these pools remain intact. But the introduction of outside individuals

¹⁰ In some cases, safety requires even further division or exclusion. A welterweight boxer would not compete against a heavyweight, nor a heavyweight wrestle against a smaller athlete. In the case of youth sports, when children are at an age where growth rates can vary widely, leagues will accommodate for naturally-occurring large discrepancies in body size by limiting larger athletes from playing positions where their size and strength is likely to result in injury to smaller players. Thus, in youth football, players exceeding a certain weight threshold may be temporarily restricted to playing on the line and disallowed from carrying the ball, or playing in the defensive secondary, where they could impose high-velocity hits on smaller players.

into a given pool (e.g. an adult onto a youth football team, or males into most women's sports) would change the balance of risk inside that pool. Simply put, when you introduce larger, faster, and stronger athletes from one pool into a second pool of athletes who are *categorically* smaller (whether as a result of age or sex), you have altered the characteristics of the second pool, and, based on known injury modeling, have statistically increased the injury risk for the original athletes in that pool. This, in a nutshell, is the basis for World Rugby's recommendations.

23. Most clinical studies of the epidemiology of sports injuries use a multivariate approach, identifying multiple independent risk factors and examining how these factors might interact, in order to determine their relative contribution to injury risk, and make educated inferences about causation. (Meeuwise 1994.)

24. In applying the multivariate approach, the goal is to keep as many variables as possible the same so as to isolate the potential effect of a single variable (such as age or biological sex) on injury risk, as well as to determine how the isolated variable interacts with the other analyzed variables to affect injury risk. Failure to consider relevant independent variables can lead to error. Researchers focusing on differences between male and female athletes, for example, would not compare concussion rates of a high school girls' soccer team to concussion rates of a professional men's soccer team, because differences in the concussion rate might be due to a number of factors besides sex, such as age,

body mass, relative differences in skill, speed, or power, as well as differences in training volume and intensity.

25. As indicated earlier, an injury event is usually the end product of a number of different risk factors coming together. (Bahr 2005.) A collision between two soccer players who both attempt to head the ball, for example, might be the inciting event that causes a concussion. Although the linear and angular forces that occur through sudden deceleration would be the proximate cause of this injury, the epidemiological model of injury would also factor in “upstream” risks, predicting the possibility of an injury outcome for each athlete differently depending on the sum of these risks. If the collision injury described above occurs between two disparately-sized players, the smaller athlete will tend to decelerate more abruptly than the larger athlete, increasing the smaller athlete’s risk for injury. Additional discrepancies in factors such as neck strength, running speeds, and muscle force generation capacity all result in differing risks and thus, the potential for differing injury outcomes from the same collision. As I discuss later in this white paper, there are significant statistical differences between the sexes when it comes to each of these variables, meaning that in a collision sport where skeletally mature males and females are playing against one another, there is a higher statistical likelihood that injury will result when collisions occur, and in particular there is a higher likelihood that a female will suffer injury. This again is the basis for the recent decision by World Rugby to disallow the crossover of men into women’s rugby,

regardless of gender identity. (World Rugby Transgender Women Guidelines 2020.) The decision-making represented by this policy change is rational and rooted in objective facts and objective risks of harm, because it takes real, acknowledged, and documented physical differences between the sexes (in many cases before adolescence), and models expected injury risk on the basis of the known differences that persist even after hormone manipulation.

B. The biomechanical model of injury

26. Sports medicine researchers and clinicians also consider a biomechanical approach when it comes to understanding sports injuries. In the biomechanical model of injury, injury is considered to be analogous to the failure of a machine or other structure. Every bone, muscle, or connective tissue structure in an athlete's body has a certain load tolerance. Conceptually, when an external "load" exceeds the load tolerance of a given structure in the human body, an injury occurs. (Fung 1993 at 1.) Thus, researchers focus on the mechanical load—the force exerted on a bone, ligament, joint or other body part—and the load tolerance of that impacted or stressed body part, to understand what the typical threshold for injury is, and how predictable this might be. (McIntosh 2005 at 2-3.) Biomechanical models of injury usually consider forces in isolation. The more consistent the movement pattern of an individual, and the fewer the contributions of unexpected outside forces to the athlete, the more accurate biomechanical predictions of injury will be.

27. Biomechanical modeling can be highly predictive in relatively simple settings. For example, in blunt trauma injury from falls, mortality predictably rises the greater the fall. About 50% of people who fall four stories will survive, while only 10% will survive a fall of seven stories. (Buckman 1991.) As complexity increases, predictability in turn decreases. In sport, the pitching motion is highly reproducible, and strain injury to the ulnar collateral ligament (UCL) of the elbow can be modeled. The load tolerance of the UCL of a pitcher's elbow is about 32 Newton-meters, but the failure threshold of a ligament like this in isolation is not the only determinant of whether injury will occur. During the pitching motion, the valgus force imparted to the elbow (gapping stress across the inner elbow that stretches the UCL) routinely reaches 64 Newtons, which is obviously greater than the failure threshold of the ligament. Since not all pitchers tear their UCLs, other variables innate to an athlete must mitigate force transmission to the ligament and reduce risk. The load tolerance of any particular part of an athlete's body is thus determined by other internal factors such as joint stiffness, total ligament support, muscle strength across the joint, or bone mineral density. Injury load can be self-generated, as in the case of a pitcher's elbow, or externally-generated, as in the case of a linebacker hitting a wide receiver. While load tolerance will vary by individual, as described above, and is often reliant on characteristics innate to a given athlete, external load is determined by outside factors such as the nature of the playing surface or

equipment used, in combination with the weight and speed of other players or objects (such as a batted ball) with which the player collides. (Bahr 2005.)

28. As this suggests, the two “models” of sports injuries described above are not in any sense inconsistent or in tension with each other. Instead, they are complementary ways of thinking about injuries that can provide different insights. But the important point to make regarding these models is that in either model, injury risk (or the threshold for injury) rises and falls depending on the size of an externally-applied force, and the ability of a given athlete to absorb or mitigate that force.

IV. THE PHYSICS OF SPORTS INJURY

29. Sports injuries often result from collisions between players, or between a player and a rapidly moving object (e.g. a ball or hockey puck, a lacrosse or hockey stick). In soccer, for example, most head injuries result from collisions with another player’s head or body, collision with the goal or ground, or from an unanticipated blow from a kicked ball. (Boden 1998; Mooney 2020.) In basketball, players often collide with each other during screens, while diving for a loose ball, or while driving to the basket. In lacrosse or field hockey, player-to-player, or player-to-stick contact is common.

30. But what are the results of those collisions on the human body? Basic principles of physics can cast light on this question from more than one angle. A general understanding of these principles can help us identify factors

that will predictably increase the relative risk, frequency, and severity of sports injuries, given certain assumptions.

31. First, we can consider **energy**. Every collision involves an object or objects that possess energy. The energy embodied in a moving object (whether a human body, a ball, or anything else) is called kinetic energy.

32. Importantly, the kinetic energy of a moving object is expressed as: $E_k = \frac{1}{2}mv^2$. That is, kinetic energy is a function of the mass of the object multiplied by the *square* of its velocity. (Dashnaw 2012.) To illustrate with a simple but extreme example: if athletes A and B are moving at the same speed, but athlete A is twice as heavy, athlete A carries twice as much kinetic energy as athlete B. If the two athletes weigh the same amount, but athlete A is going twice as fast, athlete A carries four times as much kinetic energy as athlete B. But as I have noted, the kinetic energy of a moving object is a function of the mass of the object multiplied by the square of its velocity. Thus, if athlete A is twice as heavy, and moving twice as fast, athlete A will carry eight times the kinetic energy of athlete B into a collision.¹¹

33. The implication of this equation means that what appear to be relatively minor discrepancies in size and speed can result in major differences in energy imparted in a collision, to the point that more frequent and more severe injuries can occur. To use figures that correspond more closely to average

¹¹ $2 \times 2^2 = 8$

differences between men and women, if Player M weighs only 20% more than Player F, and runs only 15% faster, Player M will bring *58% more kinetic energy* into a collision than Player F.¹²

34. The law of conservation of energy tells us that energy is never destroyed or “used up.” If kinetic energy is “lost” by one body in a collision, it is inevitably transferred to another body, or into a different form. In the case of collision between players, or between (e.g.) a ball and a player’s head, some of the energy “lost” by one player, or by the ball, may be transformed into (harmless) sound; some may result in an increase in the kinetic energy of the player who is struck (through acceleration, which I discuss below); but some of it may result in *deformation* of the player’s body—which, depending on its severity, may result in injury. Thus, the greater the kinetic energy brought into a collision, the greater the potential for injury, all other things being equal.

35. Alternately, we can consider force and *acceleration*, which is particularly relevant to concussion injuries.

36. Newton’s third law of motion tells us that when two players collide, their bodies experience equal and opposite forces at the point of impact.

37. Acceleration refers to the rate of change in speed (or velocity). When two athletes collide, their bodies necessarily accelerate (or decelerate) rapidly: stopping abruptly, bouncing back, or being deflected in a different

¹² $1.2 \times (1.15)^2 = 1.587$

direction. Newton's second law of motion tells us that: $F = ma$ (that is, force equals mass multiplied by acceleration). From this equation we see that when a larger and a smaller body collide, and (necessarily) experience equal and opposite forces, the smaller body (or smaller player, in sport) will experience more rapid acceleration. We observe this physical principle in action when we watch a bowling ball strike bowling pins: the heavy bowling ball only slightly changes its course and speed; the lighter pins go flying.

38. This same equation also tells us that if a given player's body or head is hit with a *larger* force (e.g., from a ball that has been thrown or hit faster), it will experience *greater* acceleration, everything else being equal.

39. Of course, sport is by definition somewhat chaotic, and forces are often not purely linear. Many collisions also involve angular velocities, with the production of rotational force, or torque. Torque can be thought of as force that causes rotation around a central point. A different but similar equation of Newtonian physics governs the principles involved.¹³ Torque is relevant to injury in several ways. When torque is applied through joints in directions those joints are not able to accommodate, injury can occur. In addition, rotational force can cause different parts of the body to accelerate at different rates—in some cases, very rapid rates, also leading to injury. For example, a collision where the

¹³ In this equation, $\tau = I\alpha$, torque equals moment of inertia multiplied by angular acceleration, where "moment of inertia" is defined as $I = mr^2$, that is, mass multiplied by the square of the distance to the rotational axis.

body is impacted at the waist can result in high torque and acceleration on the neck and head.

40. Sport-related concussion—a common sports injury and one with potentially significant effects—is attributable to linear, angular, or rotational acceleration and deceleration forces that result from impact to the head, or from an impact to the body that results in a whiplash “snap” of the head. (Rowson 2016.) In the case of a concussive head injury, it is the brain that accelerates or decelerates on impact, colliding with the inner surface of the skull. (Barth 2001 at 255.)

41. None of this is mysterious: each of us, if we had to choose between being hit either by a large, heavy athlete running at full speed, or by a small, lighter athlete, would intuitively choose collision with the small, light athlete as the lesser of the two evils. And we would be right. One author referred to the “increase in kinetic energy, and therefore imparted forces” resulting from collision with larger, faster players as “profound.” (Dashnaw 2012.)

V. GENDER DIFFERENCES RELEVANT TO INJURY

42. It is important to state up front that it is self-evident to most people familiar with sport and sport injuries that if men and women were to consistently participate together in competitive contact sports, there would be higher rates of injury in women. This is one reason that rule modifications often

exist in leagues where co-ed participation occurs.¹⁴ Understanding the physics of sports injuries helps provide a theoretical framework for why this is true, but so does common sense and experience. All of us are familiar with basic objective physiological differences between the sexes, some of which exist in childhood, and some of which become apparent after the onset of puberty, and persist throughout adulthood. And as a result of personal experience, all of us also have some intuitive sense of what types of collisions are likely to cause pain or injury. Not surprisingly, our “common sense” on these basic facts about the human condition is also consistent with the observations of medical science. Below, I provide quantifications of some of these well-known differences between the sexes that are relevant to injury risk, as well as some categorical differences that may be less well known.

A. Height and weight

43. It is an inescapable fact of the human species that males as a group are statistically larger and heavier than females. On average, men are 7% to 8% taller than women. (Handelsman 2018 at 818.) According to the most recently available Centers for Disease Control and Prevention (CDC) statistics, the weight of the average U.S. adult male is 16% greater than that of the average U.S. adult female. (CDC 2018.) This disparity persists into the athletic cohort.

¹⁴ For example, see <https://www.athleticbusiness.com/college/intramural-coed-basketball-playing-rules-vary-greatly.html> (detailing variety of rule modifications applied in co-ed basketball). Similarly, coed soccer leagues often prohibit so-called “slide tackles,” which are not prohibited in either men’s or women’s soccer. See, e.g., <http://www.premiercoedsports.com/pages/rulesandpolicies/soccer>.

Researchers find that while athletes tend on average to be lighter than non-athletes, the weight difference between the average adult male and female athlete remains within the same range—between 14% and 23%, depending on the sport analyzed. (Santos 2014; Fields 2018.) Indeed, World Rugby estimates that the typical male rugby player weighs 20% to 40% more than the typical female rugby player. (World Rugby Transgender Women Guidelines 2020.) This size advantage by itself allows men to bring more force to bear in a collision.

B. Bone and connective tissue strength

44. Men have bones in their arms, legs, feet, and hands that are both larger and stronger per unit volume than those of women, due to greater cross-sectional area, greater bone mineral content, and greater bone density. The advantage in bone size (cross-sectional area) holds true in both upper and lower extremities, even when adjusted for lean body mass. (Handelsman 2018 at 818; Nieves 2005 at 530.) Greater bone size in men is also correlated with stronger tendons that are more adaptable to training (Magnusson 2007), and an increased ability to withstand the forces produced by larger muscles (Morris 2020 at 5). Male bones are not merely larger, they are stronger per unit of volume. Studies of differences in arm and leg bone mineral density – one component of bone strength – find that male bones are denser, with measured advantages of between 5% and 14%. (Gilsanz 2011; Nieves 2005.)

45. Men also have larger ligaments than women (Lin 2019 at 5), and stiffer connective tissue (Hilton 2021 at Table 1), providing greater protection against joint injury.

C. Speed

46. When it comes to acceleration from a static position to a sprint, men are consistently faster than women. World record sprint performance gaps between the sexes remain significant at between 7% and 10.5%, with world record times in women now exhibiting a plateau (no longer rapidly improving with time) similar to the historical trends seen in men. (Cheuvront 2005.) This performance gap has to do with, among other factors, increased skeletal stiffness, greater cross-sectional muscle area, denser muscle fiber composition and greater limb length. (Handelsman 2018.) Collectively, males, on average, run about 10% faster than females. (Lombardo 2018 at 93.) This becomes important as it pertains to injury risk, because males involved in sport will often be travelling at faster speeds than their female counterparts in comparable settings, with resultant faster speed at impact, and thus greater impact force, in a given collision.

D. Strength/Power

47. In 2014, a male mixed-martial art fighter identifying as female and fighting under the name Fallon Fox fought a woman named Tamikka Brents, and caused significant facial injuries in the course of their bout. Speaking about their fight later, Brents said:

“I’ve fought a lot of women and have never felt the strength that I felt in a fight as I did that night. I can’t answer whether it’s because she was born a man or not because I’m not a doctor. I can only say, I’ve never felt so overpowered ever in my life, and I am an abnormally strong female in my own right.”¹⁵

48. So far as I am aware, mixed martial arts is not a collegiate or high school interscholastic sport. Nevertheless, what Brent experienced in an extreme setting is true and relevant to safety in all sports that involve contact. In absolute terms, males as a group are substantially stronger than women.

49. Compared to women, men have “larger and denser muscle mass, and stiffer connective tissue, with associated capacity to exert greater muscular force more rapidly and efficiently.” (Hilton 2021 at 201.) Research shows that on average, during the prime athletic years (ages 18-29) men have, on average, 54% greater total muscle mass than women (33.7 kg vs. 21.8 kg) including 64% greater muscle mass in the upper body, and 47% greater in the lower body. (Janssen 2000 at Table 1.) The cross-sectional area of muscle in women is only 50% to 60% that of men in the upper arm, and 65% to 70% of that of men in the thigh. This translates to women having only 50% to 60% of men's upper limb strength and 60% to 80% of men's lower limb strength. (Handelsman 2018 at 812.) Male weightlifters have been shown to be approximately 30% stronger than female weightlifters of equivalent stature and mass. (Hilton 2021 at 203.) But in competitive athletics, since the stature and mass of the average male

¹⁵ <https://bjj-world.com/transgender-mma-fighter-fallon-fox-breaks-skull-of-her-female-opponent/>

exceeds that of the average female, actual differences in strength between average body types will, on average, exceed this. The longer limb lengths of males augment strength as well. Statistically, in comparison with women, men also have lower total body fat, differently distributed, and greater lean muscle mass, which increases their power-to-weight ratios and upper-to-lower limb strength ratios as a group. Looking at another common metric of strength, males average 57% greater grip strength (Bohannon 2019) and 54% greater knee extension torque (Neder 1999). Research shows that sex-based discrepancies in lean muscle mass begin to be established from infancy, and persist through childhood to adolescence. (Davis 2019; Kirchengast 2001; Taylor 1997; Taylor 2010; McManus 2011.)

50. Using their legs and torso for power generation, men can apply substantially larger forces with their arms and upper body, enabling them to generate more ball velocity through overhead motions, as well as to generate more pushing or punching power. In other words, isolated sex-specific differences in muscle strength in one region (even differences that in isolation seem small) can, and do combine to generate even greater sex-specific differences in more complex sport-specific functions. One study looking at moderately-trained individuals found that males can generate 162% more punching power than females. (Morris 2020.) Thus, multiple small advantages aggregate into larger ones.

E. Throwing and kicking speed

51. One result of the combined effects of these sex-determined differences in skeletal structure is that men are, on average, able to throw objects faster than women. (Lombardo 2018; Chu 2009; Thomas 1985.) By age seventeen, the *average* male can throw a ball farther than 99% of seventeen-year-old females—which necessarily means at a faster initial speed assuming a similar angle of release— despite the fact that factors such as arm length, muscle mass, and joint stiffness individually don't come close to exhibiting this degree of sex-defined advantage. One study of elite male and female baseball pitchers showed that men throw baseballs 35% faster than women—81 miles/hour for men vs. 60 miles/hour for women. The authors of this study attribute this to a sex-specific difference in the ability to generate muscle torque and power. (Chu 2009.) A study showing greater throwing velocity in male versus female handball players attributed it to differences in body size, including height, muscle mass, and arm length. (Van Den Tillaar 2012.) Interestingly, significant sex-related difference in throwing ability has been shown to manifest even before puberty, but the difference increases rapidly during and after puberty. (Thomas 1985 at 266.) These sex-determined differences in throwing speed are not limited to sports where a ball is thrown. Males have repeatedly been shown to throw a javelin more than 30% farther than females. (Lombardo 2018 Table 2; Hilton 2021 at 203.) Even in preadolescent children, differences exist. International youth records for 5- to

12-year-olds in the javelin show 34-55% greater distance in males vs. females using a 400g javelin.¹⁶

52. Men also serve and spike volleyballs with higher velocity than women, with a performance advantage in the range of 29-34%. (Hilton 2021.) Analysis of first and second tier Belgian national elite male volleyball players shows ball spike speeds of 63 mph and 56 mph respectively. (Forthomme 2005.) NCAA Division I female volleyball players—roughly comparable to the second-tier male elite group referenced above—average a ball spike velocity of approximately 40 mph (18.1 m/s). (Ferris 1995 at Table 2.) Notably, based on the measurements of these studies, male spiking speed in *lower* elite divisions is almost 40% greater than that of NCAA Division I female collegiate players. Separate analyses of serving speed between elite men and women Spanish volleyball players showed that the average power serving speed in men was 54.6 mph (range 45.3–64.6 mph), with maximal speed of 76.4 mph. In women, average power serving speed was 49 mph (range 41–55.3 mph) with maximal speed of 59 mph. This translates to an almost 30% advantage in maximal serve velocity in men. (Palao 2014.)

53. Recall that kinetic energy is dependent on mass and the square of velocity. A volleyball (with fixed mass) struck by a male, and traveling an

¹⁶ <http://age-records.125mb.com/>.

average 35% faster than one struck by a female, will deliver 82% more energy to a head upon impact.

54. The greater leg strength and jumping ability of men confer a further large advantage in volleyball that is relevant to injury risk. In volleyball, an “attack jump” is a jump to position a player to spike the ball downward over the net against the opposing team. Research on elite national volleyball players found that on average, males exhibited a 50% greater vertical jump height during an “attack” than did females. (Sattler 2015.) Similar data looking at countermovement jumps (to block a shot) in national basketball players reveals a 35% male advantage in jump height. (Kellis 1999.) In volleyball, this dramatic difference in jump height means that male players who are competing in female divisions will more often be able to successfully perform a spike, and this will be all the more true considering that the women’s net height is seven inches lower than that used in men’s volleyball. Confirming this inference, research also shows that the successful attack percentage (that is, the frequency with which the ball is successfully hit over the net into the opponent’s court in an attempt to score) is so much higher with men than women that someone analyzing game statistics can consistently identify games played by men as opposed to women on the basis of this statistic alone. These enhanced and more consistently successful attacks by men directly correlate to their greater jumping ability and attack velocity at the net. (Kountouris 2015.)

55. The combination of the innate male-female differences cited above, along with the lower net height in women's volleyball, means that if a reasonably athletic male is permitted to compete against women, the participating female players will likely be exposed to higher ball velocities that are outside the range of what is typically seen in women's volleyball. When we recall that ball-to-head impact is a common cause of concussion among women volleyball players, this fact makes it clear that participation in girls' or women's volleyball by biologically male individuals will increase concussion injury risk for participating girls or women.

56. Male sex-based advantages in leg strength also lead to greater kick velocity. In comparison with women, men kick balls harder and faster. A study comparing kicking velocity between university-level male and female soccer players found that males kick the ball with an average 20% greater velocity than females. (Sakamoto 2014.) Applying the same principles of physics we have just used above, we see that a soccer ball kicked by a male, travelling an average 20% faster than a ball kicked by a female, will deliver 44% more energy on head impact. Greater force-generating capacity will thus increase the risk of an impact injury such as concussion.

VI. ENHANCED FEMALE VULNERABILITY TO CERTAIN INJURIES

57. Above, I have reviewed physiological differences that result in the male body bringing greater weight, speed, and force to the athletic field or court,

and how these differences can result in a greater risk of injury to females when males compete against them. It is also true that the female body is more vulnerable than the male body to certain types of injury even when subject to comparable forces. This risk appears to extend to the younger age cohorts as well. An analysis of Finnish student athletes from 1987-1991, analyzing over 600,000 person-years of activity exposures, found, in students under fifteen years of age, higher rates of injury in girls than boys in soccer, volleyball, judo and karate. (Kujala 1995.) Another epidemiological study looking specifically at injury rates in over 14,000 middle schoolers over a 20 year period showed that “in sex-matched sports, middle school girls were more likely to sustain *any* injury (RR = 1.15, 95% CI = 1.1, 1.2) or a time-loss injury (RR = 1.09, 95% CI = 1.0, 1.2) than middle school boys.” In analyzed both-sex sports (i.e., sex-separated sports that both girls and boys play, like soccer), girls sustained higher injury rates, and greater rates of time-loss injury. (Beachy 2014.) Another study of over 2000 middle school students at nine schools showed that the injury rate was higher for girls’ basketball than for football (39.4 v 30.7/1000 AEs), and injury rates for girls’ soccer were nearly double that of boys’ soccer (26.3 v. 14.7/1000 AEs). (Caswell 2017.) In this regard, I will focus on two areas of heightened female vulnerability to collision-related injury which have been extensively studied: concussions, and anterior cruciate ligament injuries.

A. Concussions

58. Females are more likely than males to suffer concussions in comparable sports, and on average suffer more severe and longer lasting disability once a concussion does occur. (Harmon 2013 at 4; Berz 2015; Blumenfeld 2016; Covassin 2003; Rowson 2016.) Females also seem to be at higher risk for post-concussion syndrome than males. (Berz 2015; Blumenfeld 2016; Broshek 2005; Colvin 2009; Covassin 2012; Dick 2009; Marar 2012; Preiss-Farzanegan 2009.)

59. The most widely-accepted definition of sport-related concussion comes from the Consensus Statement on Concussion in Sport (see below).¹⁷ (McCroory 2018.) To summarize, concussion is “a traumatically induced transient

¹⁷ “Sport related concussion is a traumatic brain injury induced by biomechanical forces. Several common features that may be utilised in clinically defining the nature of a concussive head injury include:

SRC may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an impulsive force transmitted to the head.

SRC typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, signs and symptoms evolve over a number of minutes to hours.

SRC may result in neuropathological changes, but the acute clinical signs and symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.

SRC results in a range of clinical signs and symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive features typically follows a sequential course. However, in some cases symptoms may be prolonged.

The clinical signs and symptoms cannot be explained by drug, alcohol, or medication use, other injuries (such as cervical injuries, peripheral vestibular dysfunction, etc) or other comorbidities (e.g., psychological factors or coexisting medical conditions).”

disturbance of brain function and involves a complex pathophysiological process” that can manifest in a variety of ways. (Harmon 2013 at 1.)

60. Sport-related concussions have undergone a significant increase in societal awareness and concurrent injury reporting since the initial passage of the Zachery Lystedt Concussion Law in Washington State in 2009 (Bompadre 2014), and the subsequent passage of similar legislation governing return-to-play criteria for concussed athletes in most other states in the United States. (Nat’l Cnf. of State Leg’s 2018). Concussion is now widely recognized as a common sport-related injury, occurring in both male and female athletes. (CDC 2007.) Sport-related concussions can result from player-surface contact or player-equipment contact in virtually any sport. However, sudden impact via a player-to-player collision, with rapid deceleration and the transmission of linear or rotational forces through the brain, is also a common cause of concussion injury. (Covassin 2012; Marar 2012; Barth 2001; Blumenfeld 2016; Boden 1998; Harmon 2013 at 4.)

61. A large retrospective study of U.S. high school athletes showed a higher rate of female concussions in soccer (79% higher), volleyball (0.6 concussions/10,000 exposures, with 485,000 reported exposures, vs. no concussions in the male cohort), basketball (31% higher), and softball/baseball (320% higher). (Marar 2012.) A similarly-sized, similarly-designed study comparing concussion rates between NCAA male and female collegiate athletes showed, overall, a concussion rate among females 40% higher than that of

males. Higher rates of injury were seen across individual sports as well, including ice hockey (10% higher); soccer (54% higher); basketball (40% higher); and softball/baseball (95% higher). (Covassin 2016.) The observations of these authors, my own observations from clinical practice, and the acknowledgment of our own Society's Position Statement (Harmon 2013), all validate the higher frequency and severity of sport-related concussions in women and girls.

62. Most epidemiological studies to date looking at sport-related concussion in middle schoolers show that more boys than girls are concussed. There are fewer studies estimating concussion *rate*. This is, in part, because measuring injury rate is more time and labor-intensive. Researchers at a childrens' hospital, for example, could analyze the number of children presenting to the emergency department with sport-related concussion and publish findings of absolute number. However, to study concussion incidence, athlete exposures also have to be recorded. Generally speaking, an athlete exposure is a single practice or game where an athlete is exposed to playing conditions that could reasonably supply the necessary conditions for an injury to occur. Rates of athletic injury, concussion among them, are then, by convention, expressed in terms of injury rate per 1000 athletic exposures. More recently, some studies have been published that analyze the rates of concussion in the middle school population. Looking at the evidence, the conclusion can be made that females experience increased susceptibility to concussive injuries before puberty. For example, Ewing-Cobbs, et al. (2018) found elevated post-

concussion symptoms in girls across all age ranges studied, including children between the ages of 4 and 8. Kerr's 2017 study of middle school students showed over three times the rate of female vs male concussion in students participating in sex-comparable sports [0.18 v. 0.66/1000 A.E.'s]. (Kerr 2017.) This is the first study I am aware of that mimics the trends seen in adolescent injury epidemiology showing a higher rate of concussion in girls than boys in comparable sports.

63. More recent research looking at the incidence of sport-related concussions in U.S. middle schoolers between 2015 and 2020, found that the rate of concussion was higher in middle school athletes than those in high school. In this study, girls had more than twice the rate of concussion injury (0.49/1000 athletic exposures vs 0.23/1000 AE) in analyzed sports (baseball/softball, basketball, soccer and track), as well as statistically greater time loss. (Hacherl 2021 (Journal of Athletic Training); Hacherl 2021 (Archives of Clinical Neuropsychology).) The authors hypothesized that the increasing incidence of concussion in middle school may relate to "other distinct differences associated with the middle school sport setting itself, such as, the large variations in player size and skill."¹⁸

64. In addition, females on average suffer materially greater cognitive impairment than males when they do suffer a concussion. Group differences in

¹⁸ <https://www.nata.org/press-release/062421/middle-school-sports-have-overall-higher-rate-concussion-reported-high-school>.

cognitive impairment between females and males who have suffered concussion have been extensively studied. A study of 2340 high school and collegiate athletes who suffered concussions determined that females had a 170% higher frequency of cognitive impairment following concussions, and that in comparison with males, female athletes had significantly greater declines in simple and complex reaction times relative to their preseason baseline levels. Moreover, the females experienced greater objective and subjective adverse effects from concussion even after adjusting for potentially protective effect of helmets used by some groups of male athletes. (Broshek 2005 at 856, 861; Colvin 2009; Covassin 2012.)

65. This large discrepancy in frequency and severity of concussion injury is consistent with my own observations across many years of clinical practice. The large majority of student athletes who have presented at my practice with severe and long-lasting cognitive disturbance have been adolescent girls. I have seen girls remain symptomatic for over a year, and lose ground academically and become isolated from their peer groups due to these ongoing symptoms. For patients who experience these severe effects, post-concussion syndrome can be life-altering.

66. Some of the anatomical and physiological differences that we have considered between males and females help to explain the documented differences in concussion rates and in symptoms between males and females. (Covassin 2016; La Fontaine 2019; Lin 2019; Tierney 2005; Wunderle 2014.)

Anatomically, there are significant sex-based differences in head and neck anatomy, with females exhibiting in the range of 30% to 40% less head-neck segment mass and neck girth, and 49% lower neck isometric strength. This means that when a female athlete's head is subjected to the same load as an analogous male, there will be a greater tendency for head acceleration, and resultant injury. (Tierney 2005 at 276-277.)

67. When modeling the effect of the introduction of male mass, speed, and strength into women's rugby, World Rugby gave particular attention to the resulting increases in forces and acceleration (and injury risk) experienced in the head and neck of female players. Their analysis found that "the magnitude of the known risk factors for head injury are . . . predicted by the size of the disparity in mass between players. The addition of [male] speed as a biomechanical variable further increases these disparities," and their model showed an increase of up to 50% in neck and head acceleration that would be experienced in a typical tackle scenario in women's rugby. As a result, "a number of tackles that currently lie beneath the threshold for injury would now exceed it, causing head injury." (World Rugby Transgender Women Guidelines 2020.) While rugby is notoriously contact-intensive, similar increases to risk of head and neck injury to women are predictable in any sport context in which males and females collide at significant speed, as happens from time to time in sports including soccer, softball, and basketball.

68. In addition, even when the heads of female and male athletes are subjected to identical accelerative forces, there are sex-based differences in neural anatomy and physiology, cerebrovascular organization, and cellular response to concussive stimuli that make the female more likely to suffer concussive injury, or more severe concussive injury. For instance, hypothalamic-pituitary disruption is thought to play a role in post-concussion symptomatology that differentially impacts women. (McGroarty 2020; Broshek 2005 at 861.) Another study found that elevated progesterone levels during one portion of the menstrual cycle were associated with more severe post-concussion symptomatology that differentially impacted women. (Wunderle 2014.)

69. As it stands, when females compete against each other, they already have higher rates of concussive injury than males, across most sports. The addition of biologically male athletes into women's contact sports will inevitably increase the risk of concussive injury to girls and women, for the multiple reasons I have explained above, including, but not limited to, the innate male advantage in speed and lean muscle mass. Because the effects of concussion can be severe and long-lasting, particularly for biological females, we can predict with some confidence that if participation by biological males in women's contact sports based on gender identity becomes more common, more biological females will suffer substantial concussive injury and the potential for long-term harm as a result.

B. Anterior Cruciate Ligament injuries

70. The Anterior Cruciate Ligament (“ACL”) is a key knee stabilizer that prevents anterior translation of the tibia relative to the femur and also provides rotatory and valgus knee stability.¹⁹ (Lin 2019 at 4.) Girls and women are far more vulnerable to ACL injuries than are boys and men. The physics of injury that we have reviewed above makes it inevitable that the introduction of biologically male athletes into the female category will increase still further the occurrence of ACL injuries among girls or women who encounter these players on the field.

71. Sports-related injury to the ACL is so common that it is easy to overlook the significance of it. But it is by no means a trivial injury, as it can end sports careers, require surgery, and usually results in early-onset, post-traumatic osteoarthritis, triggering long-term pain and mobility problems later in life. (Wang 2020.)

72. Even in the historic context in which girls and women limit competition to (and so only collide with) other girls and women, the rate of ACL injury is substantially higher among female than male athletes. (Flaxman 2014; Lin 2019; Agel 2005.) One meta-analysis of 58 studies reports that female athletes have a 150% relative risk for ACL injury compared with male athletes, with other estimates suggesting as much as a 300% increased risk. (Montalvo 2019; Sutton 2013.) Particularly in those sports designated as contact sports, or

¹⁹ Valgus force at the knee is a side-applied force that gaps the medial knee open.

sports with frequent cutting and sharp directional changes (basketball, field hockey, lacrosse, soccer), females are at greater risk of ACL injury. In basketball and soccer, this risk extends across all skill levels, with female athletes between two and eight times more likely to sustain an ACL injury than their male counterparts. (Lin 2019 at 5.) These observations are widely validated, and consistent with the relative frequencies of ACL injuries that I see in my own practice.

73. When the reasons underlying the difference in the incidence of ACL injury between males and females were first studied in the early 1990s, researchers speculated that the difference might be attributable to females' relative inexperience in contact sports, or to their lack of appropriate training. However, a follow-up 2005 study looking at ACL tear disparities reported that, "Despite vast attention to the discrepancy between anterior cruciate ligament injury rates between men and women, these differences continue to exist." (Agel 2005 at 524.) Inexperience and lack of training do not explain the differences. Sex seems to be an independent predictor of ACL tear risk.

74. In fact, as researchers have continued to study this discrepancy, they have determined that multiple identifiable anatomical and physiological differences between males and females play significant roles in making females more vulnerable to ACL injuries than males. (Flaxman 2014; Lin 2019; Wolf 2015.) Summarizing the findings of a number of separate studies, one researcher recently cited as anatomical risk factors for ACL injury smaller ligament size,

decreased femoral notch width, increased posterior-inferior slope of the lateral tibia plateau, increased knee and generalized laxity, and increased body mass index (BMI). With the exception of increased BMI, each of these factors is more likely to occur in female than male athletes. (Lin 2019 at 5.) In addition, female athletes often stand in more knee valgus (that is, in a “knock-kneed” posture) due to wider hips and a medially-oriented femur. Often, this is also associated with a worsening of knee valgus during jump landings. The body types and movement patterns associated with these valgus knee postures are more common in females and increase the risk for ACL tear. (Hewett 2005.)

75. As with concussion, the cyclic fluctuation of sex-specific hormones in women is also thought to be a possible risk factor for ACL injury. Estrogen acts on ligaments to make them more lax, and it is thought that during the ovulatory phase of menses (when estrogen levels peak), the risk of ACL tear is higher. (Chidi-Ogbolu 2019 at 1; Herzberg 2017.)

76. Whatever the factors that increase the injury risk for ACL tears in women, the fact that a sex-specific difference in the rate of ACL injury exists is well established and widely accepted.

77. Although non-contact mechanisms are the most common reason for ACL tears in females, tears related to contact are also common, with ranges reported across multiple studies of from 20%-36% of all ACL injuries in women. (Kobayashi 2010 at 672.) For example, when a soccer player who is kicking a ball is struck by another player in the lateral knee of the stance leg, medial and

rotational forces can tear the medial collateral ligament (MCL), the ACL, and the meniscus. Thus, as participation in the female category based on identity rather than biology becomes more common (entailing the introduction of athletes with characteristics such as greater speed and lean muscle mass), and as collision forces suffered by girls and women across the knee increase accordingly, the risk for orthopedic injury and in particular ACL tears among impacted girls and women will inevitably rise.

78. Of course there exists variation in all these factors within a given group of males or females. However, it is also true that within sex-specific pools, size differential is somewhat predictable and bounded, even considering outliers. When males are permitted to enter into the pool of female athletes based on gender identity rather than biological sex, there is an increased possibility that a statistical outlier in terms of size, weight, speed, and strength—and potentially an extreme outlier—is now entering the female pool. Although injury is not guaranteed, risks to female participants will increase. And as I discuss later, the available evidence together suggests that this will be true even with respect to males who have been on testosterone suppression for a year or more. World Rugby relied heavily upon this when they were determining their own policy, and I think it is important to reiterate that this policy, rooted in concern for athlete safety, is justifiable based upon current evidence from medical research and what we know about biology.

VII. TESTOSTERONE SUPPRESSION WILL NOT PREVENT THE HARM TO FEMALE SAFETY IN ATHLETICS

79. A recent editorial in the New England Journal of Medicine opined that policies governing transgender participation in female athletics “must safeguard the rights of all women—whether cisgender or transgender.” (Dolgin 2020.) Unfortunately, the physics and medical science reviewed above tell us that this is not practically possible. If biological males are given a “right” to participate in the female category based on gender identity, then biological women will be denied the right to reasonable expectations of safety and injury risk that have historically been guaranteed by ensuring that females compete (and collide) only with other females.

80. Advocates of unquestioning inclusion based on gender identity often contend that hormonal manipulation of a male athlete can feminize the athlete enough that he is comparable with females for purposes of competition. The NCAA’s Office of Inclusion asserts (still accessible on the NCAA website as of this writing) that “It is also important to know that any strength and endurance advantages a transgender woman arguably may have as a result of her prior testosterone levels dissipate after about one year of estrogen or testosterone suppression therapy.”²⁰ (NCAA 2011 at 8.) Whether or not this is true is a critically important question.

²⁰ <https://www.ncaa.org/sports/2016/3/2/lesbian-gay-bisexual-transgender-and-questioning-lgbtq.aspx>

81. At the outset, we should note that while advocates sometimes claim that testosterone suppression *can* eliminate physiological advantages in a biological male, none of the relevant transgender eligibility policies that I am aware of prior to 2021 requires any demonstration that it has *actually* achieved that effect in a particular male who seeks admission into the female category. The Connecticut policy that is currently at issue in ongoing litigation permits admission to the female category at the high school level without requiring any testosterone suppression at all. Prior to their new policy, just announced in January 2022, the NCAA's policy required no demonstration of any reduction of performance capability, change in weight, or regression of any other physical attribute of the biological male toward female levels. It did not require achievement of any particular testosterone level, and did not provide for any monitoring of athletes for compliance. Moving forward, through a phasing process, the NCAA will ultimately require athletes in each sport to meet requirements of their sport's national governing body (NGB). If no policy exists, the policy of that sport's international governing body applies, or, finally, if no policy exists there, the 2015 policy of the International Olympic Committee (IOC) will apply. The 2015 IOC policy requires no showing of any diminution of any performance capability or physical attribute of the biological male, and requires achievement and compliance monitoring only of a testosterone level below 10nmol/liter—a level far above levels occurring in normal biological

females (0.06 to 1.68 nmol/L).²¹ Indeed, female athletes with polycystic ovarian disorder—a condition that results in elevated testosterone levels—rarely exceed 4.8 nmol/L, which is the basis for setting the testing threshold to detect testosterone *doping* in females at 5.0 nmol/L. Thus, males who qualify under the 2015 IOC policy to compete as transgender women may have testosterone levels—even after hormone suppression—*double* the level that would disqualify a biological female for doping with testosterone.²²

82. As Dr. Emma Hilton has observed, the fact that there are over 3000 sex-specific differences in skeletal muscle alone makes the hypothesis that sex-linked performance advantages are attributable solely to current circulating testosterone levels improbable at best. (Hilton 2021 at 200-01.)

83. In fact, the available evidence strongly indicates that no amount of testosterone suppression can eliminate male physiological advantages relevant to performance and safety. Several authors have recently reviewed the science and statistics from numerous studies that demonstrate that one year (or more) of testosterone suppression does not substantially eliminate male performance advantages. (Hilton 2021; De Varona 2021; Harper 2021.) As a medical doctor, I will focus on those specific sex-based characteristics of males who have

²¹ Normal testosterone range in a healthy male averages between 7.7 and 29.4 nmol/L.

²² In November 2021, the IOC released new guidelines, deferring decision-making about a given sport's gender-affectedness to its governing body. The current NCAA policy, however, still utilizes the 2015 IOC policy to determine an athlete's eligibility in event that the sport's national and international governing bodies lack policies to determine eligibility.

undergone normal sex-determined pubertal skeletal growth and maturation that are relevant to the *safety* of female athletes. Here, too, the available science tells us that testosterone suppression does not eliminate the increased risk to females or solve the safety problem.

84. The World Rugby organization reached this same determination based on the currently available science, concluding that male physiological advantages that “create risks [to female players] appear to be only minimally affected” by testosterone suppression. (World Rugby Transgender Women Guidelines 2020.)

85. Surprisingly, so far as public information reveals, the NCAA’s Committee on Competitive Safeguards is not monitoring and documenting instances of transgender participation on women’s teams for purposes of injury reporting. In practice, the NCAA is conducting an experiment which in theory predicts an increased frequency and severity of injuries to women in contact sports, while at the same time failing to collect the relevant data from its experiment.

86. In their recent guidelines, UK Sport determined that, “based upon current evidence, testosterone suppression is unlikely to guarantee fairness between transgender women and natal females in gender-affected sports.” (UK Sports Councils’ Equality Group Guidance 2021 at 7.) They also warned that migration to a scenario by NGBs where eligibility is determined through case-by-case assessment “is unlikely to be practical nor verifiable for entry into

gender-affected sports,” in part because “many tests related to sports performance are volitional,” and incentives on the part of those tested would align with intentional poor performance. (UK Sports Councils’ Equality Group Guidance 2021 at 8.)

87. Despite these concerns, this appears to be exactly the route that the IOC is taking, as reflected in their Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity, released in November of 2021.²³ In it, the IOC lists two disparate goals. First, that “where sports organizations elect to issue eligibility criteria for men’s and women’s categories for a given competition, they should do so with a view to . . . [p]roviding confidence that no athlete within a category has an unfair and disproportionate competitive advantage . . . [and] preventing a risk to the physical safety of other athletes.” (IOC Framework 2021 § 4.1.) At the same time, governing bodies are not to preclude any athlete from competing until evidence exists based upon “robust and peer-reviewed research that . . . demonstrates a consistent, unfair, disproportionate competitive advantage in performance and/or an unpreventable risk to the physical safety of other athletes” – research moreover that “is largely based on data collected *from a demographic group that is consistent in gender and athletic engagement with the group that the eligibility*

²³ The IOC Framework on Fairness, Inclusion and Non-Discrimination on the Basis of Gender Identity and Sex Variations is available at https://stillmed.olympics.com/media/Documents/News/2021/11/IOC-Framework-Fairness-Inclusion-Non-discrimination-2021.pdf?_ga=2.72651665.34591192.1645554375-759350959.1644946978

criteria aim to regulate.” (IOC Framework 2021 § 6.1) Finally, affected athletes may appeal any evidence-based decision-making process through a further “appropriate internal mediation mechanism, such as a Court of Arbitration for Sport.” (IOC Framework 2021 § 6.1.) Rather than cite any of the growing evidence that testosterone suppression cannot mitigate sex-based performance differences, the IOC’s new policy remains aspirational and opaque. And yet the research relating to hormonal suppression in transgender athletes, as confirmed by World Rugby and UK Sport, already speaks very clearly to the fact that males retain a competitive advantage over women that cannot be eliminated through testosterone suppression alone. What follows is a brief summary of some of these retained differences as they relate to sport safety.

A. Size and weight

88. Males are, on average, larger and heavier. As we have seen, these facts alone mean that males bring more kinetic energy into collisions, and that lighter females will suffer more abrupt deceleration in collisions with larger bodies, creating heightened injury risk for impacted females.

89. I start with what is obvious and so far as I am aware undisputed—that after the male pubertal growth spurt, suppression of testosterone does not materially *shrink* bones so as to eliminate height, leverage, performance, and weight differences that follow from simply having longer, larger bones, and being subsequently taller.

90. In addition, multiple studies have found that testosterone suppression may modestly reduce, but does not come close to eliminating the male advantage in muscle mass and lean body mass, which together contribute to the greater average male weight. Researchers looking at transitioning adolescents found that the weight of biological male subjects *increased* rather than decreased after treatment with an antiandrogen testosterone suppressor. (Tack 2018.) In one recent meta-analysis, researchers looking at the musculoskeletal effects of hormonal transition found that even after males had undergone 36 months of therapy, their lean body mass and muscle area remained above those of females. (Harper 2021.) Another group in 2004 studied the effects of testosterone suppression to less than 1 nmol/L in men after one or more years, but still found only a 12% total loss of muscle area by the end of thirty-six months. (Gooren 2004.)

B. Bone density

91. Bone mass (which includes both size and density) is maintained over *at least* two years of testosterone suppression (Singh-Ospina 2017; Figuera 2019), and one study found it to be preserved even over a median of 12.5 years of suppression (Hilton 2021; Ruetsche 2005).

C. Strength

92. A large number of studies have now observed minimal or no reduction in strength in male subjects following testosterone suppression. In one recent meta-analysis, strength loss after twelve months of hormone therapy

ranged from negligible to 7%. (Harper 2021.) Given the baseline male strength advantage in various muscle groups of from approximately 25% to 100% above female levels that I have noted in Section V.D above, even a 7% reduction leaves a large retained advantage in strength. Another study looking at handgrip strength—which is a proxy for general strength—showed a 9% loss of strength after two years of hormonal treatment in males who were transitioning, leaving a 23% retained advantage over the female baseline. (Hilton 2021.) Yet another study which found a 17% retained grip strength advantage noted that this placed the median of the group treated with hormone therapy in the 95th percentile for grip strength among age-matched females. (Scharff 2019.) Researchers looking at transitioning adolescents showed no loss of grip strength after hormone treatment. (Tack 2018.)

93. One recent study on male Air Force service members undergoing transition showed that they retained more than two thirds of pretreatment performance advantage over females in sit-ups and push-ups after between one and two years of testosterone-reducing hormonal treatment. (Roberts 2020.) Another recently-published observational cohort study looked at thigh strength and thigh muscle cross-sectional area in men undergoing hormonal transition to transgender females. After one year of hormonal suppression, this group saw only a 4% decrease in thigh muscle cross-sectional area, and a negligible decrease in thigh muscle strength. (Wiik 2020.) Wiik and colleagues looked at isokinetic strength measurements in individuals who had undergone at least 12

months of hormonal transition and found that muscle strength was comparable to baseline, leaving transitioned males with a 50% strength advantage over reference females. (Wiik 2020.) Finally, one cross-sectional study that compared men who had undergone transition at least three years prior to analysis, to age-matched, healthy males found that the transgender individuals had retained enough strength that they were still outside normative values for women. This imbalance continued to hold even after *eight* years of hormone suppression. The authors also noted that since males who identify as women often have lower baseline (i.e., before hormone treatment) muscle mass than the general population of males, and since baseline measures for this study were unavailable, the post-transition comparison may actually represent an overestimate of muscle mass regression in transgender females. (Lapauw 2008; Hilton 2021.)

94. World Rugby came to the same conclusion based on its own review of the literature, reporting that testosterone suppression “does not reverse muscle size to female levels,” and in fact that “studies assessing [reductions in] mass, muscle mass, and/or strength suggest that reduction in these variables range between 5% and 10%. Given that the typical male vs female advantages range from 30% to 100%, these reductions are small.” (World Rugby Transgender Women Guidelines 2020.)

95. It is true that most studies of change in physical characteristics or capabilities over time after testosterone suppression involve untrained subjects

rather than athletes, or subjects with low to moderate training. It may be assumed that all of the Air Force members who were subjects in the study I mention above were physically fit and engaged in regular physical training. But neither that study nor those studies looking at athletes quantify the volume or type of strength training athletes are undergoing. The important point to make is that the only effect strength training could have on these athletes is to *counteract* and reduce the limited loss of muscle mass and strength that does otherwise occur to some extent over time with testosterone blockade. There has been at least one study that illustrates this, although only over a short period, measuring strength during a twelve-week period where testosterone was suppressed to levels of 2 nmol/L. During that time, subjects actually increased leg lean mass by 4%, and total lean mass by 2%, and subject performance on the 10 rep-max leg press improved by 32%, while their bench press performance improved by 17%. (Kvorning 2006.)

96. The point for safety is that superior strength enables a biological male to apply greater force against an opponent's body during body contact, or to throw, hit, or kick a ball at speeds outside the ranges normally encountered in female-only play, with the attendant increased risks of injury that I have already explained.

D. Speed

97. As to speed, the study of transitioning Air Force members found that these males retained a 9% running speed advantage over the female control

group after one year of testosterone suppression, and their average speed had not declined significantly farther by the end of the 2.5 year study period. (Roberts 2020.) Again, I have already explained the implications of greater male speed on safety for females on the field and court, particularly in combination with the greater male body weight.

CONCLUSION

Since the average male athlete is larger and exerts greater power than the average female athlete in similar sports, male–female collisions will produce greater energy at impact, and impart greater risk of injury to a female, than would occur in most female-female collisions. Because of the well-documented physiological testing and elite performance differences in speed and strength, as well as differences in lean muscle mass that exist across all age ranges, the conclusions of this paper can apply to a certain extent before, as well as during, and after puberty. We have seen that males who have undergone hormone therapy in transition toward a female body type nevertheless retain musculoskeletal “legacy” advantages in muscle girth, strength, and size. We have also seen that the additive effects of these individual advantages create multiplied advantages in terms of power, force generation and momentum on the field of play. In contact or collision sports, sports involving projectiles, or sports where a stick is used to strike something, the physics and physiology reviewed above tell us that permitting male-bodied athletes to compete against, or on the same team as females—even when undergoing testosterone

suppression—must be expected to create predictable, identifiable, substantially increased, and unequal risks of injuries to the participating women.

Based on its independent and extensive analysis of the literature coupled with injury modeling, World Rugby recognized the inadequacy of the International Olympic Committee’s policy to preserve safety for female athletes in their contact sport (the NCAA policy is even more lax in its admission of biological males into the female category). Among the explicit findings of the World Rugby working group were the following:

- Forces and inertia faced by a smaller and slower player during collisions are significantly greater when in contact with a larger, faster player.
- Discrepancies in mass and speed (such as between two opponents in a tackle) are significant determinants of various head and other musculoskeletal injury risks.
- The risk of injury to females is increased by biological males’ greater ability to exert force (strength and power), and also by females’ reduced ability to receive or tolerate that force.
- Testosterone suppression results in only “small” reductions in the male physiological advantages. As a result, heightened injury risks remain for females who share the same field or court with biological males.
- These findings together predict a significant increase in injury rates for females in rugby if males are permitted to participate based on gender identity, *with or without testosterone suppression*, since the magnitude of forces and energy transfer during collisions will increase substantially, directly correlated to the differences in physical attributes that exist between the biological sexes.

Summarizing their work, the authors of the World Rugby Guidelines said that, “World Rugby’s number one stated priority is to make the game as safe as

possible, and so World Rugby cannot allow the risk to players to be increased to such an extent by allowing people who have the force and power advantages conferred by testosterone to play with and against those who do not.” (World Rugby Transgender Guidelines 2020.) As my own analysis above makes clear, I agree with the concerns of UK Sport and the conclusions of World Rugby regarding risk to female athletes. Importantly, I also agree that it must be a high priority for sports governing bodies (and other regulatory or governmental bodies governing sports) to make each sport as safe as reasonably possible. And in my view, medical practitioners with expertise in this area have an obligation to advocate for science-based policies that promote safety.

The *performance* advantages retained by males who participate in women’s sports based on gender identity are readily recognized by the public. When an NCAA hurdler who ranked 200th while running in the collegiate male division transitions and immediately leaps to a number one ranking in the women’s division;²⁴ when a high school male sprinter who ranked 181st in the state running in the boys’ division transitions and likewise takes first place in the girls’ division (De Varona 2021), the problem of fairness and equal opportunities for girls and women is immediately apparent, and indeed this problem is being widely discussed today in the media.

²⁴ https://en.wikipedia.org/wiki/Cece_Telfer (accessed 6/20/21)

The causes of sports injuries, however, are multivariate and not always as immediately apparent. While, as I have noted, some biological males have indeed competed in a variety of girls' and women's contact sports, the numbers up till now have been small. But recent studies have reported very large increases in the number of children and young people identifying as transgender compared to historical experience. For example, an extensive survey of 9th and 11th graders in Minnesota found that 2.7% identified as transgender or gender-nonconforming— well over 100 times historical rates (Rider 2018), and many other sources likewise report this trend.²⁵

Faced with this rapid social change, it is my view as a medical doctor that policymakers have an important and pressing duty not to wait while avoidable injuries are inflicted on girls and women, but instead to proactively establish policies governing participation of biological males in female athletics that give proper and scientifically-based priority to safety in sport for these girls and women. Separating participants in contact sports based on biological sex preserves competitive equity, but also promotes the safety of female athletes by protecting them from predictable and preventable injury. Otherwise, the hard science that I have reviewed in this white paper leaves little doubt that eligibility policies based on ideology or gender identity rather than science, will,

²⁵ https://www.nytimes.com/2016/07/01/health/transgender-population.html?mc=aud_dev&ad-keywords=auddevgate&gclid=Cj0KCQjwkZiFBhD9ARIsAGxFX8BV5pozB9LI5Ut57OQzuMhurWThv BMisV9NyN9YTXIzW17OAnGT6VkaAu0jEALw_wcB&gclsrc=aw.ds (accessed 6/20/21)

over time, result in increased, and more serious, injuries to girls and women who are forced to compete against biologically male transgender athletes. When basic science and physiology both predict increased injury, then leagues, policy-makers, and legislators have a responsibility to act to protect girls and women before they get hurt.

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APPENDIX – LIST OF PUBLICATIONS

Publications of Dr. Chad Thomas Carlson, M.D., FACSM

Sports Medicine CAQ Study Guide, Healthy Learning, 2021 [editor].

SEXUAL VIOLENCE IN SPORT: AMERICAN MEDICAL SOCIETY FOR SPORTS MEDICINE POSITION STATEMENT. Published in Curr Sports Med Reports June 2020;19(6):232-4; Clin J Sports Med June 8 2020; Br J Sports Med 2020;0:1-3.

Traveling with Medication. NCAA Sports Science Institute Bulletin, 2015
<http://www.ncaa.org/sport-science-institute/traveling-medication>.

A SURVEY OF STATE MEDICAL LICENSING BOARDS: CAN THE TRAVELING TEAM PHYSICIAN PRACTICE IN YOUR STATE? 2013. Jan (47)1:60-62.

AXIAL BACK PAIN IN THE ATHLETE: PATHOPHYSIOLOGY AND APPROACH TO REHABILITATION. Curr Rev Musculoskel Med. 2009 (2):88-93.

THE NATURAL HISTORY AND MANAGEMENT OF HAMSTRING INJURIES. Curr Rev Musculoskel Med 2008 (1):120-128.

SPONDYLOLYSIS AND THE ATHLETE. Athletic Ther Today. 2007 (12)4:37-39.

“ACUTE SUBDURAL HEMATOMA IN A HIGH SCHOOL FOOTBALL PLAYER,” J Athl Training, 38;2(63), 2003.

THE RELATIONSHIP OF EXCESSIVE WEIGHT LOSS TO PERFORMANCE IN HIGH SCHOOL WRESTLERS – A PILOT STUDY; presented at the AMSSM national meeting, San Diego, CA, 2000; Clinical Journal of Sport Medicine 10(4):310, October, 2000.

CURRICULUM VITAE (ABBREVIATED)

Chad Thomas Carlson, MD

Work Address: Stadia Sports Medicine
6000 University Ave.
Suite 250
West Des Moines, IA, 50266
Phone (515) 221-1102

Active professional licenses: IA, NE, CA, TX, TN, NC, AZ, FL (telemed)

Board certified family medicine, ABMS 1998; recertified 2005, 2012

Board certified sports medicine, ABMS 1999; recertified 2009, 2019

EDUCATION:

- Fellowship: Sports Medicine -- Ball Memorial Hospital/Central Indiana Orthopedics, 1997-1999; Completed 4/99
- Residency: University of Michigan Department of Family Medicine, 1994-97
- University of Nebraska College of Medicine
M.D. obtained May 1994
- University of Nebraska at Lincoln
B.S. with majors in history (emphasis American) and biology obtained May 1990

EMPLOYMENT HISTORY:

- Physician Owner, Stadia Sports Medicine, West Des Moines, IA, 2006 - present
- Staff Physician, University of Illinois, 9/04-6/06
- Director, Carle Sports Medicine, Carle Foundation Hospital, Urbana, IL, 2001-2004; Team physician, University of Illinois.
- Private practice, Ionia County Hospital, Ionia, MI, 1999-2001.

HOSPITAL AFFILIATIONS:

- Iowa Methodist Hospital, Des Moines
- Mercy Medical Center, Des Moines

PROFESSIONAL HONORS/AWARDS:

- Appointed to Board of Directors, Physical Activity Alliance, 2020
- Appointed to joint AMSSM/NCAA COVID-19 Working Group, March 2020-present
 - Medical advisory panel, 2021 Women's Division I NCAA Basketball Tournament
- AMSSM Founders Award 2019, awarded once annually for the Sports Medicine Physician nationally who best exemplifies the practice of Sports Medicine
- Fellow designation, American Medical Society for Sports Medicine, 2019
- Elected to Executive Committee, American Medical Society for Sports Medicine, 2017-21
 - **President of AMSSM, 2019-2020**

- Practice/Policy Committee, AMSSM, 2007-2016 (Former Chair)
 - Author of US HR 921, the Sports Medicine Licensure Clarity Act, which passed the US House of Representatives and Senate in January 2017, and was signed into law by President Trump, 2017
- Appointed member of physician liaison group to the NCAA to discuss return to sport strategies in the COVID-19 pandemic, 2020
- Appointed to Board of Directors, Running the Race, 2018-present
- Sports Ultrasound Committee, Policy Co-Chair, AMSSM, 2015-2017
- Elected to Board of Directors, American Medical Society for Sports Medicine, 2009-2013.
- Member, Health and Science Policy Committee, ACSM, 2010-present
 - Chair, Clinical Medicine Subcommittee, HSPC, ACSM, 2012-2015
- Iowa Medical Society Leadership Development Committee, 2022
- Member of Sports Medicine Subcommittee for the Iowa State Medical Society, 2007-present
 - Iowa designate to National Youth Sports Safety Summit
 - New York City – 2015
 - Indianapolis – 2016
 - Kansas City – 2017
- AMSSM designate for the American Academy of Orthopaedic Surgeons' Knee Osteoarthritis Quality Measure review committee, 2014-2016
- Associate Editor, Current Reviews in Musculoskeletal Medicine, 2006-2010.
- Fellow, American College of Sports Medicine: Designated in 2004

SPECIAL QUALIFICATIONS:

- Prior legal consulting work in cases with both local and national reach
- Extensive training in office musculoskeletal injury
- Oversight of treadmill stress testing/metabolic stress testing
- Independent consultation regarding establishment of individual exercise programs consistent with revised ACSM guidelines
- Proficient at evaluation/management of bone mineral density problems at all ages
- Qualified procedurally for:
 - Ultrasound diagnostic testing and guided injections
 - Joint injection/aspiration
 - Percutaneous tenotomy (TENEX)
 - Rotator cuff barbotage
 - Lactate/Anaerobic threshold, VO_2 MAX/ exercise testing
 - Laryngoscopy for vocal cord assessment
 - Compartment pressure assessment
 - Ultrasound-guided nerve blocks
- Extensive experience speaking to large national groups on issues pertaining to sports medicine, including, but not limited to:
 - Overuse Injury
 - Head and Neck Injuries on the Field
 - Exercise-Induced Asthma
 - The Shoulder Exam
 - Principles of Exercise Prescription
 - Traumatic Brain Injury in Sport
 - The Knee Exam
 - The Ankle Exam
 - The Hip Exam
 - The Pre-Participation Exam
 - Cardiopulmonary Exercise Testing for Determination of Training Zone Estimates and to Identify Causes of Exercise-Related Dyspnea
 - Athletic Amenorrhea
 - Advocacy in Sports Medicine
 - Medical Practice Economics

PUBLICATIONS/RESEARCH:

- Sports Medicine CAQ Study Guide, Healthy Learning, Monterey, CA. 2021.[editor].
- AXIAL BACK PAIN IN THE ATHLETE: PATHOPHYSIOLOGY AND APPROACH TO REHABILITATION. Curr Rev Musculoskel Med. 2009 (2):88-93
- SPONDYLOLYSIS AND THE ATHLETE. Athletic Ther Today. 2007 (12)4:37-39.
- THE NATURAL HISTORY AND MANAGEMENT OF HAMSTRING INJURIES. Curr Rev Musculoskel Med 2008 (1):120-128.
- A SURVEY OF STATE MEDICAL LICENSING BOARDS: CAN THE TRAVELING TEAM PHYSICIAN PRACTICE IN YOUR STATE? BJSM. 2013. Jan (47)1:60-62.
- SEXUAL VIOLENCE IN SPORT: AMERICAN MEDICAL SOCIETY FOR SPORTS MEDICINE POSITION STATEMENT
 - Curr Sports Med Reports June 2020;19(6):232-4.
 - Clin J Sports Med June 8 2020;
 - Br J Sports Med 2020;0:1-3
- "ACUTE SUBDURAL HEMATOMA IN A HIGH SCHOOL FOOTBALL PLAYER," J Athl Training, 38;2(63), 2003
- Traveling with Medication. NCAA Sports Science Institute Bulletin, 2015 <http://www.ncaa.org/sport-science-institute/traveling-medication>
- THE RELATIONSHIP OF EXCESSIVE WEIGHT LOSS TO PERFORMANCE IN HIGH SCHOOL WRESTLERS – A PILOT STUDY; presented at the AMSSM national meeting, San Diego, CA, 2000 Clinical Journal of Sport Medicine 10(4):310, October, 2000

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

)
B.P.J. by her next friend and)
mother, HEATHER JACKSON,)
)
Plaintiff,)

No. 2:21-cv-00316

vs.)

WEST VIRGINIA STATE BOARD OF)
EDUCATION, HARRISON COUNTY)
BOARD OF EDUCATION, WEST)
VIRGINIA SECONDARY SCHOOL)
ACTIVITIES COMMISSION, W.)
CLAYTON BURCH in his official)
capacity as State)
Superintendent, DORA STUTLER,)
in her official capacity as)
Harrison County)
Superintendent, and THE STATE)
OF WEST VIRGINIA,)

Defendants.)

LAINEY ARMISTEAD,)

Defendant-Intervenor.)

REMOTE VIDEOTAPED DEPOSITION OF
CHAD T. CARLSON, M.D., FACSM
Monday, March 28, 2022
Volume I

Reported by:
ALEXIS KAGAY
CSR No. 13795
Job No. 5122881
PAGES 1 - 227

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

_____)
 B.P.J. by her next friend and) mother, HEATHER JACKSON,)
 Plaintiff,)
) No. 2:21-cv-00316
 vs.)
)
 WEST VIRGINIA STATE BOARD OF)
 EDUCATION, HARRISON COUNTY)
 BOARD OF EDUCATION, WEST)
 VIRGINIA SECONDARY SCHOOL)
 ACTIVITIES COMMISSION, W.)
 CLAYTON BURCH in his official) capacity as State)
 Superintendent, DORA STUTLER,) in her official capacity as)
 Harrison County)
 Superintendent, and THE STATE) OF WEST VIRGINIA,)
)
 Defendants.)
)
 LAINEY ARMISTEAD,)
)
)
 Defendant-Intervenor.)

Videotaped deposition of CHAD T. CARLSON, M.D., FACSM, Volume I, taken on behalf of Plaintiff, with all participants appearing remotely, beginning at 9:01 a.m. and ending at 3:19 p.m. on Monday, March 28, 2022, before ALEXIS KAGAY, Certified Shorthand Reporter No. 13795.

1 A Okay. I've got it.

2 Q So if you go to paragraph -- so page 9,
3 paragraph 11 C.

4 A Okay.

5 Q And in the middle of paragraph 11 C, the -- 11:10:07
6 there's a sentence that begins with "Even before."

7 A Correct.

8 Q So there you say (as read):

9 "Even before puberty, males have a
10 performance advantage over females 11:10:24
11 in most athletic events."

12 Correct?

13 A That is correct.

14 Q And that sentence wasn't contained in your
15 first version of your white paper from June 2021; 11:10:32
16 right?

17 A As I said, that was not the focus of that
18 paper, so that's correct.

19 Q Okay. Why did you decide to include it in
20 this paper? 11:10:48

21 A When --

22 MR. FRAMPTON: Objection to the form.

23 Go ahead.

24 THE WITNESS: When I was retained by
25 West Virginia in this case, discussions between 11:11:04

1 attorneys at ADF and attorneys at West Virginia --

2 MR. TRYON: I just want to insert here,

3 please don't -- again, this is attorney-client --

4 don't get into attorney-client protected

5 information. So discussions with counsel are

11:11:26

6 protected.

7 MR. FRAMPTON: Right.

8 MR. TRYON: But to the extent that you can

9 answer that without disclosing that -- those

10 communications, you may do so.

11:11:32

11 MR. FRAMPTON: Yeah, same -- same

12 instruction.

13 THE WITNESS: Okay. So I -- I -- I guess

14 what I would say is that the initial report was

15 filed -- was created prior to being retained by the

11:11:42

16 State of West Virginia and the updated paper that

17 you have was updated to include the prepubertal

18 population because my understanding is that the

19 defendant in this case is -- is young.

20 BY MR. BLOCK:

11:12:14

21 Q Before you were asked to update the white

22 paper, did you have an expert opinion regarding the

23 safety implications of prepubertal boys and girls

24 playing together?

25 MR. FRAMPTON: Objection to the form.

11:12:26

1 THE WITNESS: Many of the considerations that
2 exist in that first paper are relevant to the
3 prepubertal group. I suspected that they would
4 probably hold, and I do believe that they hold.

5 BY MR. BLOCK: 11:12:58

6 Q So -- so before you were asked to update your
7 paper, you had an expert opinion that it would be
8 unsafe for prepubertal girls and play -- and boys to
9 play together?

10 MR. FRAMPTON: Objection to the form. 11:13:10

11 THE WITNESS: As I said, I suspected that
12 there was probably risk in that population as well.

13 BY MR. BLOCK:

14 Q Now, you talked about the literature review
15 you conducted for creating your white paper. What 11:13:31
16 sort of literature review did you conduct for the
17 process of updating the right -- the white paper to
18 discuss prepubertal kids?

19 A I went more into the picture on population
20 testing, looking at what differences in performance 11:14:01
21 were between boys and girls. I looked at
22 international and national performance records,
23 databases. I looked at ratified standards for --
24 that had been determined through, for instance, the
25 presidential physical fitness test. 11:14:35

1 Q How did you identify what sources to look at?

2 A PubMed. I own -- well, PubMed.

3 Q Did you review any sources that were not
4 included in Dr. Brown's 2022 expert report?

5 MR. FRAMPTON: Objection to the form. 11:15:06

6 THE WITNESS: I couldn't speak to that
7 because I haven't cross-referenced his bibliography
8 to mine.

9 BY MR. BLOCK:

10 Q In paragraph 16, page 12 of your report, 11:15:26
11 could you turn to that?

12 A Yes, I'm there.

13 Q So -- so right before paragraph 17, the --
14 the final sentence in paragraph 16, it says (as
15 read): 11:15:53

16 "Although most easily documented in
17 athletes who have gone through
18 puberty, these differences are not
19 exclusively limited to
20 post-pubescent athletes either." 11:16:04

21 Did I read that right?

22 A You did.

23 Q Okay. And how -- can you explain to me how
24 these differences are most easily documented in
25 athletes who have gone through puberty? 11:16:17

1 A Of course.

2 The differences between men and women with
3 regards to strength and -- both upper and lower
4 body -- and muscle mass and power increase,
5 there's -- there's greater separation between the 11:16:48
6 sexes after puberty has occurred. That doesn't mean
7 that there's no difference prior.

8 Q But you -- you say it's most easily
9 documented. What did you mean by "most easily
10 documented"? 11:17:07

11 MR. FRAMPTON: Object to the form.

12 MR. BLOCK: I'm sorry, what's the -- what's
13 the form objection to that?

14 MR. FRAMPTON: The objection is I -- I
15 don't -- I don't think you've properly stated what 11:17:30
16 he said.

17 BY MR. BLOCK:

18 Q What -- what did you mean when you said "most
19 easily documented"?

20 A Meaning that the -- that wider differences 11:17:39
21 are more apparent than narrow differences.

22 Q So paragraph 17 says (as read):

23 "I have reviewed the expert

24 declaration of Gregory A. Brown,

25 Ph.D., FACM of February 23, 2022, 11:17:58

1 provided in this case..."

2 Correct?

3 A Correct.

4 Q Okay. And the date of this document that

5 we're reading from is also February 23rd, 2022; 11:18:09

6 correct?

7 A Correct.

8 Q Okay. So how did you read Dr. Brown's expert

9 declaration dated the same day as your declaration?

10 A That was provided to me by attorneys at ADF. 11:18:31

11 Q Did you read Dr. Brown's declaration after it

12 had already been signed?

13 A I can't speak to when he signed that, so I

14 don't know the answer to that question.

15 Q Did you review Dr. Brown's declaration on 11:18:52

16 February 23rd, 2022?

17 A I don't recall when I reviewed it.

18 Q Now, the sentence continues -- I'll just read

19 it from the beginning again.

20 (As read): 11:19:15

21 "I have reviewed the expert

22 declaration of Gregory A. Brown,

23 Ph.D., FACM of February 23, 2022,

24 provided in this case, which

25 includes evidence from a wide 11:19:23

1 variety of sources, including
2 population-based mass testing data,
3 as well as age-stratified
4 competition results, all of which
5 support the idea that prepubertal 11:19:35
6 males run faster, jump higher and
7 farther, exhibit higher aerobic
8 power output, and have greater upper
9 body strength (evidenced by stronger
10 hand grip and better performance 11:19:45
11 with chin-ups or bent arm hang) than
12 comparably aged females."

13 Did I read that right?

14 A You did.

15 Q Okay. And then you go on to say that this is 11:19:55
16 documented in Presidential Fitness Test, Euro
17 Fitness Test and additional mass testing data from
18 the UK and Australia; correct?

19 A Correct.

20 Q Now, are those fitness tests what you were 11:20:05
21 referring to earlier when you were discussing
22 additional research you had done to update your
23 white paper?

24 A Yes.

25 Q Okay. Do you actually cite to those fitness 11:20:18

1 test results in the bibliography of this white
2 paper?

3 A I don't believe that that's in there.

4 Q Okay. So does this refresh your recollection
5 about whether you -- about how -- I'll take this -- 11:20:36
6 I'll -- strike that. I'll ask again.

7 Do you -- did you become aware of these
8 differences in test results from reading Dr. Brown's
9 declaration?

10 A No. I had been familiar with some of those 11:20:55
11 papers prior.

12 Q When did you become familiar with them?

13 A In the course of -- likely in the course of
14 initial review, on -- on PubMed searches.

15 Q Can you turn to page 61 of the document? 11:21:24
16 That's your bibliography.

17 A Okay.

18 Q Can you point out to me the sources in the
19 bibliography addressing performance differences
20 between -- or -- or differences in body composition 11:22:03
21 between prepubertal girls and prepubertal boys?

22 A We're speaking to performance differences;
23 correct?

24 Q Or physiological differences.

25 A Papers that I referenced are not in there. 11:23:25

1 Q Okay. Why not?

2 A I reviewed -- papers that I had reviewed
3 beforehand were referenced within Dr. Brown's
4 report.

5 Q On the -- if -- going back to paragraph 17, 11:24:26
6 which is -- well, if you could go back to
7 paragraph 17. So that's pages 12 and 13.

8 12 and 13. Hopefully, I said that correctly.

9 If you could go to the end of paragraph 17,
10 which is on page 13. 11:24:51

11 A Okay.

12 Q Let me know when you're there.

13 A I'm there.

14 Q Okay. It says (as read):

15 In sum, a large and unbridgeable 11:25:01
16 performance gap exists between
17 the" -- "exists" --

18 Let me try that again. I need another cup of
19 coffee.

20 It says (as read): 11:25:11

21 "In sum, a large and unbridgeable
22 performance gap between the sexes is
23 well-studied and equally
24 well-documented, beginning in many
25 cases before puberty." 11:25:20

1 Do you see that sentence?

2 A I do.

3 Q Okay. Is -- do you believe that the
4 performance gap before puberty is unbridgeable?

5 A No, that's not what I said. 11:25:37

6 Q That's why I'm asking the question.

7 A No.

8 Q Do -- do you --

9 A What -- what it says is large and
10 unbridgeable performance gap between the sexes is 11:25:46
11 well-studied beginning in many cases before puberty.

12 Q Okay. In -- in many cases, is there an
13 unbridgeable performance gap before puberty?

14 A I believe, based on the -- I believe if you
15 look at the -- of how sex-based records break down, 11:26:14
16 that we're talking about upper-end performance that
17 it reflects, in -- as I said, in many cases, an
18 unbridgeable gap.

19 Q How about average differences between boys
20 and girls before puberty, is the gap so large to be 11:26:44
21 unbridgeable?

22 A Not in all cases, no.

23 Q In which case is -- is it large enough to be
24 unbreakable?

25 A Well, for example, boys can outperform girls 11:27:02

1 as early as age seven and ups at between 100 and
2 1200 percent improved.

3 Q And do you have an expert opinion on whether
4 or not those differences are attributable to innate
5 physiological characteristics? 11:27:41

6 A As -- as a physician who works with athletes
7 of all ages, every day, I do have an opinion that
8 biology plays a role in the measured performance
9 differences that exist in the literature with
10 respect to prepubertal children, yes. 11:28:11

11 Q So you said biology plays a role.
12 Is biology the exclusive thing that plays a
13 role?

14 A I'm not aware of any peer-reviewed study that
15 looks at the exact contribution of biology versus 11:28:36
16 other causes when it comes to performance in
17 prepubertal children.

18 Q Are you -- are you aware of any data
19 measuring the performance of transgender girls
20 before puberty in -- in athletic contests or 11:28:51
21 physical fitness studies?

22 A I'm not aware of any literature looking
23 specifically at prepubertal transgender girls in --
24 in their performance of sport, no.

25 Q Just to clarify the scope of your expert 11:29:14

1 opinions in this case, are you providing an expert
2 opinion in this case regarding athletic advantages
3 between males and females?

4 MR. FRAMPTON: Objection; form.

5 Go ahead. 11:29:46

6 THE WITNESS: I am providing an opinion in
7 this case on the safety issues that exist when those
8 of one sex cross over and participate in sports.

9 BY MR. BLOCK:

10 Q So -- so your expert opinion in this case is 11:30:01
11 exclusively about the safety issues; correct?

12 THE VIDEOGRAPHER: I believe Dr. Carlson's
13 Internet might have been having a problem. You
14 might need to repeat your question.

15 MR. BLOCK: Sure. 11:30:37

16 BY MR. BLOCK:

17 Q So your expert testimony in this case is
18 exclusively about the safety issues involved when
19 males and females play together; right?

20 MR. FRAMPTON: Objection; form. 11:30:53

21 Go ahead.

22 THE WITNESS: It is about the safety issues
23 that are involved when males and -- when males cross
24 over into women's sports particularly, and some of
25 that opinion relates to differences in certain 11:31:08

1 variables, such as speed.

2 BY MR. BLOCK:

3 Q You're not providing an expert opinion on the
4 fairness of allowing transgender girls to
5 participate on girls' teams; right? 11:31:29

6 A I'm not providing an opinion on fairness as
7 relates to transgender participation, no.

8 Q If you could go to paragraph 21 of your
9 report -- it's on page 15. So about four lines from
10 the top -- there's a sentence that begins with "To 11:32:12
11 the latter point."

12 A "To the latter point, children don't play
13 contact sports...?"

14 Q Yeah. So it says (as read):

15 "To the latter point, children don't 11:32:28
16 play contact sports with adults and,
17 in a great majority of cases, men
18 and women compete in categories
19 specific to their own biological
20 sex." 11:32:37

21 Do you see that?

22 A I do.

23 Q Okay. And so that sentence has been changed
24 from the version of that sentence that appeared in
25 your June 2021 report; correct? 11:32:49

1 A I can't recall. I'd have to go back and look
2 at that report.

3 Q Okay. Let's go back and look at it. It's on
4 page 11 of your earlier report.

5 A Okay. 11:33:37

6 Q All right. So on page 11 of your report,
7 paragraph 18, a couple lines from the bottom, it
8 says (as read):

9 "To the latter point, children don't
10 play contact sports with adults and, 11:33:45
11 as has already been discussed, after
12 the onset of puberty, men and women
13 compete in categories specific to
14 their own biological sex."

15 Do you see that? 11:33:54

16 A I do.

17 Q Okay. And so then in your February report,
18 the -- the words after "the onset of puberty" are
19 taken out, and the words "in the great majority of
20 cases" are -- are put in; is that right? 11:34:10

21 A Correct.

22 Q Okay. And so why did you make that change?

23 A Well, I believe, as we had discussed, the
24 focus on the first draft was primarily in the
25 adolescent age and later, and the second draft was 11:34:23

1 expanded slightly to include consideration of the
2 prepubertal athlete. And since sport -- gender --
3 or sex stratification in youth teams is still widely
4 prevalent, they altered those words.

5 Q Are you providing an expert opinion in this 11:34:50
6 case about transgender girls and women who never go
7 through endogenous puberty as a result of puberty
8 blockers followed by gender-affirming hormones?

9 MR. FRAMPTON: Objection; form.

10 THE WITNESS: Can you -- you ask that one 11:35:07
11 more time?

12 BY MR. BLOCK:

13 Q Yeah. So are you providing an expert
14 report -- excuse me, I'll say it again.

15 Are you providing an expert opinion in this 11:35:14
16 case about transgender girls and women who never go
17 through endogenous puberty as a result of taking
18 puberty blockers followed by gender-affirming
19 hormones?

20 MR. FRAMPTON: Same objection. 11:35:29

21 Go ahead.

22 THE WITNESS: So to the extent that they are
23 prepubertal biological males, yes.

24 BY MR. BLOCK:

25 Q How about to the extent that they have 11:35:36

1 received puberty blockers followed by
2 gender-affirming hormones to stimulate the
3 equivalent of a typically female puberty?

4 MR. FRAMPTON: Objection; form.

5 THE WITNESS: My opinion in this case extends 11:35:51
6 to sports safety issues in both the prepubertal and
7 the pubertal population.

8 BY MR. BLOCK:

9 Q Okay. Does it address safety issues of the
10 participation of transgender girls and women who 11:36:11
11 receive puberty blockers and then receive
12 gender-affirming hormone therapy that has effects on
13 bone and muscle structure and causes them to
14 develop, you know, typically female hips and -- and
15 things like that? 11:36:26

16 MR. FRAMPTON: Objection to form.

17 MR. TRYON: Objection; form.

18 THE WITNESS: That's -- that's a complex
19 question. Can you unpack that a little bit?

20 BY MR. BLOCK: 11:36:39

21 Q Sure. So you, so far -- in response to my
22 questions about people who have blockers, you've
23 equated transgender girls who have blockers to
24 prepubertal boys and someone who has -- a
25 transgender girl who has puberty blockers and then 11:36:52

1 receives gender-affirming hormones, you know,
2 stimulates a lot of other changes that prepubertal
3 boys don't have; correct?

4 MR. FRAMPTON: Objection to form.

5 THE WITNESS: I don't -- 11:37:05

6 MR. FRAMPTON: Go ahead.

7 THE WITNESS: I don't think that that's been
8 widely looked at. I know that there's -- I -- I
9 don't think that that's been widely looked at or
10 extensively looked at, as to what the effects of 11:37:16
11 that treatment would be on athletic performance.

12 BY MR. BLOCK:

13 Q Are you providing an expert opinion on what
14 the effects of that treatment would be on safety?

15 MR. FRAMPTON: Object to the form. 11:37:36

16 Go ahead.

17 THE WITNESS: I'm providing an opinion on the
18 potential effects on safety of a biological male,
19 even at age 10 or 11, pick your age, of crossing
20 over into a woman's sport and participating in 11:37:53
21 contact and collision sports.

22 BY MR. BLOCK:

23 Q All right. That's not the answer to my
24 question. I -- I asked are you providing an expert
25 opinion on the safety of -- of some -- a transgender 11:38:03

1 girl who has received blockers and then
2 gender-affirming hormones participating on girls'
3 sports teams.

4 A Am I -- I -- I am providing an opinion on the
5 potential safety issues of a hypothetical individual 11:38:39
6 like this participating on girls' sport team --
7 girls' sports teams, yes.

8 Q What -- what's your basis for providing an
9 expert opinion regarding a transgender girl who has
10 received blockers and then gone on to receive 11:38:57
11 gender-affirming hormones?

12 A That would have to do with whether or not
13 there are differences between the sexes at the time
14 of puberty.

15 Q Well, I'm talking about someone who has 11:39:21
16 received blockers but then received gender-affirming
17 hormones to stimulate the equivalent of a typically
18 female puberty.

19 Are you -- what's your basis for providing an
20 expert opinion on the safety risks of that person 11:39:39
21 participating on girls' sports?

22 MR. TRYON: Objection.

23 THE WITNESS: To my --

24 MR. FRAMPTON: Objection to form.

25 ///

1 BY MR. BLOCK:

2 Q You can answer.

3 A There's not extensive research looking at the
4 situation that you're talking about.

5 Q So --

11:39:59

6 A The effect of sports -- of gender-affirming
7 hormones on sports participation.

8 Q So if there's not a lot of research, do you
9 have a basis for offering an expert opinion about
10 it?

11:40:16

11 MR. FRAMPTON: Same objection.

12 Go ahead.

13 THE WITNESS: My opinion is grounded in an
14 understanding of what plays into injury risk and
15 differences that exist between the sexes.

11:40:30

16 BY MR. BLOCK:

17 Q Do you know what differences exist for --
18 between a cisgender woman and a transgender woman
19 who received puberty blockers followed by
20 gender-affirming hormones?

11:40:49

21 MR. TRYON: Objection to form.

22 THE WITNESS: My -- my understanding is there
23 is retained differences in lean body mass between
24 them.

25 ///

1 BY MR. BLOCK:

2 Q What's that understanding based on?

3 A The one study I'm familiar with that looked
4 at that, which was authored by Klaver.

5 Q And that's a study that you didn't cite in 11:41:10
6 your report; correct?

7 A Correct.

8 Q You only looked at that study for the first
9 time in preparing for this deposition; correct?

10 MR. FRAMPTON: Objection to the form. 11:41:22

11 BY MR. BLOCK:

12 Q You can answer.

13 A I looked at it in preparation for this
14 deposition, yes.

15 Q So you looked at it for the first time after 11:41:37
16 you had already submitted your report; correct?

17 A Correct.

18 Q And is it your understanding that the people
19 in that study received puberty blockers at the
20 beginning of Tanner II? 11:41:49

21 A Around -- I believe around age 13, 14.

22 Q And as a medical doctor, what's your
23 understanding of when Tanner II typically begins for
24 boys?

25 A Again, I'm a sports medicine physician. I'm 11:42:05

1 not an endocrinologist.

2 Q Well --

3 MR. FRAMPTON: Did it not pick up his answer?

4 I thought he answered the -- there was no reaction

5 when he said an age, so I just wanted to make sure 11:42:27

6 it was picked up.

7 MR. BLOCK: It was not.

8 MR. FRAMPTON: Okay.

9 THE WITNESS: I said age 12.

10 BY MR. BLOCK: 11:42:34

11 Q Age 12.

12 Have you done any modeling of the safety

13 risks associated with prepubertal boys playing on

14 sports teams with prepubertal girls?

15 MR. FRAMPTON: Objection to the form. 11:42:57

16 Go ahead.

17 THE WITNESS: Define what you mean by

18 "modeling."

19 BY MR. BLOCK:

20 Q You discuss modeling of safety risks in your 11:43:08

21 report, don't you?

22 A Correct.

23 Q So that's what I mean by "modeling."

24 Have you conducted any modeling of the safety

25 risks of prepubertal boys playing on teams with 11:43:22

1 prepubertal girls?

2 A I'm not sure what you mean by modeling these
3 risks. The -- the extent to which prepubertal kids
4 do or don't fit into that model depends on whether
5 there are measurable differences between the sexes 11:43:50
6 in terms of things like speed or strength.

7 Q And so --

8 A To the extent that there are measurable
9 differences noted between them, then, yes, the model
10 applies. 11:44:13

11 Q But you haven't actually done that modeling,
12 have you?

13 MR. FRAMPTON: Objection to the form.

14 THE WITNESS: I thought I answered that
15 question. I'm not sure -- do you mean have I 11:44:22
16 published data on that?

17 BY MR. BLOCK:

18 Q Not have you published it. Have you done it
19 yourself? Have you plugged the values into
20 equations and -- and come up with a model similar 11:44:35
21 to, you know, rugby's model?

22 MR. FRAMPTON: Objection to the form.

23 Go ahead.

24 THE WITNESS: Have I taken a calculator and
25 calculated this out with prepubertals? I'm not sure 11:44:56

1 I understand why that's necessary.

2 If -- if -- there either are or there aren't
3 differences between the sexes in terms of variables
4 that equate to athletic performance or -- or lead to
5 athletic performance, and if there are, then 11:45:19
6 absolute injury risk can be increased.

7 BY MR. BLOCK:

8 Q So you don't -- no -- no matter how small a
9 difference is, you don't think that's relevant to
10 assessing, you know, safety risks? 11:45:33

11 MR. FRAMPTON: Object to the form.

12 THE WITNESS: I'm not sure what you're asking
13 there, but -- but measurable differences can lead to
14 increased safety risk, yes.

15 BY MR. BLOCK: 11:45:55

16 Q World Rugby actually calculated a -- a model
17 of the safety risks of an average man playing rugby
18 with an average woman; correct?

19 A Correct. That was part of their process.

20 Q Okay. And so they went through the steps of 11:46:12
21 actually calculating it; correct?

22 A They did.

23 Q Okay. And -- but you did not go through
24 those steps for purposes of calculating a safety
25 risk of an -- prepubertal boys playing on teams with 11:46:26

1 prepubertal girls; right?

2 MR. FRAMPTON: Same objection.

3 THE WITNESS: Well, I think I speak to the --

4 in the paper as to how that risk might be

5 calculated.

11:46:39

6 BY MR. BLOCK:

7 Q Yeah, you -- you spoke to how it might be

8 calculated, but you didn't actually calculate it;

9 correct?

10 A I'm not -- I'm not sure where you're going

11:46:46

11 with that, but --

12 Q I just need a "yes" or "no" answer whether

13 you did it or not.

14 MR. FRAMPTON: Object to the form.

15 Go ahead.

11:46:55

16 BY MR. BLOCK:

17 Q You did not actually go through the steps of

18 calculating the model of the safety risk for

19 prepubertal boys playing with prepubertal girls?

20 A I did not take, for example, an

11:47:02

21 eight-year-old male and -- his mass and speed into a

22 force equation and then compare it to another

23 eight-year-old female. I'm not sure what that

24 was -- would accomplish.

25 Q Okay. So how -- so you don't have the -- the 11:47:19

1 MR. FRAMPTON: That was probably garbled, but
2 I object to the form.

3 Go ahead and answer the question.

4 THE WITNESS: I do not.

5 BY MR. BLOCK: 12:50:44

6 Q Do you know whether the participation of this
7 plaintiff in sports would pose any more of a safety
8 risk than the participation of any other cisgender
9 girl in sports?

10 MR. FRAMPTON: Object to the form. 12:51:02

11 THE WITNESS: Because I don't know the
12 particulars of this person, I certainly could not
13 speak to that.

14 BY MR. BLOCK:

15 Q Are you providing an -- expert testimony at 12:51:15
16 all regarding safety risks from cross-country?

17 A I was asked to provide a report on safety
18 risks as relates to participation in -- of athletes
19 in contact in collision sports, but that's
20 defined -- the -- the nature of that is defined 12:51:42
21 within my paper.

22 Q Okay. So it does not -- so contact and
23 collision sports does not include cross-country;
24 correct?

25 A That's correct. 12:51:52

1 Q And contact and collision sports doesn't
2 include track and field; correct?

3 A Correct.

4 Q Okay. Do you -- would it be fair to say that
5 the effects of male-to-female hormones on important 12:52:27
6 determinants of athletic performance still remain
7 largely unknown?

8 A I -- I -- I didn't hear -- the effects of
9 male and female hormones on what?

10 Q On determinants of athletic performance 12:52:42
11 remain largely unknown.

12 MR. FRAMPTON: Object to the form.

13 Go ahead.

14 THE WITNESS: What do you mean by "largely
15 unknown"? 12:52:52

16 BY MR. BLOCK:

17 Q I don't know. Do you think it's a fair
18 statement, that they remain largely unknown?

19 MR. FRAMPTON: Object to the form.

20 THE WITNESS: I think that there's good 12:53:04
21 evidence that testosterone has a significant impact
22 on performance.

23 BY MR. BLOCK:

24 Q But do you think the effects of lowering
25 circulating testosterone on athletic performance 12:53:17



Team Results Management

Mountain Hollar MS Invitational MS

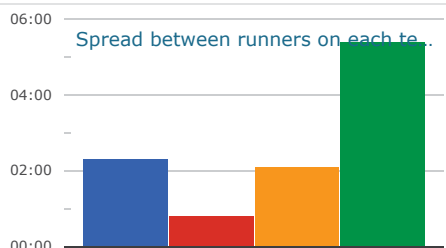
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OFFICIAL Thu, Sep 2, 2021 University High School

← Womens 3,200 Meters Junior Varsity

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Team Spread ▾



First Athlete ▾ Last Athlete ▾

Official Team Scores

| | |
|-----------------------------|----|
| 1. Suncrest | 29 |
| 2. South (Morgantown) | 39 |
| 3. Mountaineer (Morgantown) | 78 |
| 4. Bridgeport | 99 |

| | | |
|--------------------------|---------|--------------------------|
| 1. 8 Stella Bleech | 15:54.3 | South (Morgantown) |
| 2. 8 Chloe Sickles | 16:00.4 | South (Morgantown) |
| 3. 6 Emma Zhou | 16:12.8 | Suncrest |
| 4. 7 Janie Gilchrist | 16:14.5 | Suncrest |
| 5. 8 Mia McCutcheon | 16:19.7 | Suncrest |
| 6. 7 Linsey Kramer | 16:41.3 | East Fairmont |
| 7. 8 Maliah Dalton | 16:41.8 | South (Morgantown) |
| 8. 7 Maddie Fritsch | 16:48.6 | Mountaineer (Morgantown) |
| 9. 6 JJ Monroy | 16:53.8 | Suncrest |
| 10. 7 Paige Snyder | 16:55.4 | East Fairmont |
| 11. 7 Olivia Lupo | 17:00.9 | Suncrest |
| 12. 6 Chelsea Payne | 17:02.9 | Braxton County |
| 13. 7 Graylee Linville | 17:09.8 | Bridgeport |
| 14. 7 Lauren Krantz | 17:10.6 | Suncrest |
| 15. 7 Elizabeth Esposito | 17:11.9 | Suncrest |
| 16. 7 Ayla McCasi | 17:13.9 | South (Morgantown) |
| 17. 7 Kylie Cline | 17:20.7 | Covenant Christian |
| 18. 8 Milley Dong | 17:21.8 | Suncrest |
| 19. 8 Adrienne Reger | 17:25.3 | Mountaineer (Morgantown) |
| 20. 7 Grayson Martucci | 17:27.8 | Suncrest |
| 21. 6 Anna Houde | 17:32.8 | Suncrest |
| 22. 6 Emma Kniceley-See | 17:34.4 | Bridgeport |
| 23. 6 Kelea Anderson | 17:38.3 | Suncrest |
| 24. 6 Maria Strager | 17:41.9 | Mountaineer (Morgantown) |
| 25. 7 A. Monroe | 17:49.4 | Suncrest |
| 26. 8 Allie Myers | 17:49.6 | Suncrest |
| 27. 8 Brynn Lewis | 18:01.1 | Suncrest |
| 28. 8 Emily McDonald | 18:12.6 | South (Morgantown) |
| 29. 8 Samantha Zizzi | 18:16.1 | South (Morgantown) |
| 30. 6 Arianna Howell | 18:17.7 | South (Morgantown) |
| 31. 8 Anna McBee | 18:25.3 | Mountaineer (Morgantown) |
| 32. 6 Maggie Bailey | 18:30.3 | Suncrest |
| 33. 8 Avery Dickerson | 18:33.8 | South (Morgantown) |
| 34. 6 Elaina Beard | 18:42.9 | South (Morgantown) |
| 35. 8 Nataline Wolfe | 18:54.2 | Mountaineer (Morgantown) |
| 36. 6 Braydan Whitesel | 18:59.8 | Braxton County |
| 37. 8 Maya Ramsey-Murry | 19:06.3 | Suncrest |
| 38. 7 Hannah Staley | 19:28.2 | Suncrest |
| 39. 6 Emily Liu | 19:53.9 | Suncrest |
| 40. 7 Maria Abelsayed | 20:00.9 | Suncrest |

4/20/22, 8:26 PM

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| | |
|-------------------------------|--------------------------------------|
| 41. 7 Zuzanna Michalski | 20:14.3 Mountaineer (Morgantown) |
| 42. 7 Addison Berg | 20:28.6 Covenant Christian |
| 43. 8 Payton Janssen | 20:43.7 Bridgeport |
| 44. 6 Rylee Lemley | 20:52.8 Mountaineer (Morgantown) |
| 45. 6 Sara Minchau | 20:54.5 Mountaineer (Morgantown) |
| 46. 0 Brigid Wilson | 20:56.9 Suncrest |
| 47. 7 Ashlyn Poach | 21:42.5 St. Francis Central Catholic |
| 48. 6 Margaret (Maggie) Cable | 21:46.1 Bridgeport |
| 49. 6 Claire Jones | 22:02.3 South (Morgantown) |
| 50. 6 Alden Owen | 22:24.4 St. Francis Central Catholic |
| 51. 6 Becky Pepper-Jackson | 22:33.9 Bridgeport |
| 52. 8 Faith Noss | 22:42.7 Central Preston |
| 53. 7 Caitlin Murray | 22:55.7 Bridgeport |
| 54. 7 Alexis Thomas | 22:55.9 South (Morgantown) |
| 55. 7 Elsa Meyer | 23:48.1 Suncrest |
| 56. 8 Shea Lingo | 23:52.8 Suncrest |
| 57. 8 Macy Giles | 24:12.1 South (Morgantown) |
| 58. 7 Lilah Allison | 24:23.5 Suncrest |
| 59. 6 Peyton Ice | 24:34.7 East Fairmont |
| 60. 7 Elizaveta Abbitt | 24:51.2 St. Francis Central Catholic |
| 61. 8 Keirston Pugh | 24:55.9 Bridgeport |
| 62. 7 Olivia Markley | 25:03.8 East Fairmont |
| 63. 7 Baylee Yost | 25:29.2 Suncrest |
| 64. 7 Amelia Fisher | 26:47.8 Mountaineer (Morgantown) |
| 65. 6 Emma Sherwin | 26:50.2 Mountaineer (Morgantown) |
| 66. 6 Havanna Davis | 30:26.8 Suncrest |



Team Results Management

Doddridge Invitational MS

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← Womens 3,000 Meters Middle School

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Official Team Scores

| Rank | Team | Score |
|------|--------------------------|-------|
| 1. | Pleasants County | 61 |
| 2. | Braxton County | 76 |
| 3. | East Fairmont | 110 |
| 4. | Tyler Consolidated | 122 |
| 5. | Warren Local | 138 |
| 6. | Mountaineer (Clarksburg) | 166 |
| 7. | Taylor County | 197 |
| 8. | West Fairmont | 210 |
| 9. | Bridgeport | 213 |
| 10. | Wirt County | 273 |
| 11. | Buckhannon-Upshur | 281 |
| 12. | Ritchie County | 286 |
| 13. | Washington Irving | 320 |
| 14. | Lincoln | 385 |
| 15. | Westwood | 427 |

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| | | | | |
|-----|---|--------------------|----------|--------------------------|
| 1. | 7 | Anna Bennett | 12:00.24 | Pleasants County |
| 2. | 8 | Kailee Haymond | 12:31.40 | East Fairmont |
| 3. | 8 | Addison Lloyd | 12:59.85 | Braxton County |
| 4. | 7 | Makenna Martin | 13:13.89 | Tyler Consolidated |
| 5. | 8 | Tillie Cinalli | 13:20.28 | West Fairmont |
| 6. | 8 | Bailey Pritt | 13:25.51 | Braxton County |
| 7. | 7 | Marley Sias | 13:25.77 | Doddridge County |
| 8. | 7 | Maddie Smith | 13:33.78 | Pleasants County |
| 9. | 6 | Annabelle Skidmore | 13:34.41 | East Fairmont |
| 10. | 7 | Julia Angiulli | 13:37.77 | Mountaineer (Clarksburg) |
| 11. | 8 | Bentlee Williams | 13:39.15 | Ritchie County |
| 12. | 6 | Avry Bennett | 13:41.59 | Pleasants County |
| 13. | 8 | Kaitlyn Key | 13:45.11 | Mountaineer (Clarksburg) |
| 14. | 7 | Mackinzey Budner | 13:46.29 | Braxton County |
| 15. | 7 | Maddy Cox | 13:47.57 | Tyler Consolidated |
| 16. | 7 | Ella Egidi | 13:50.85 | West Fairmont |
| 17. | 8 | Sophia Austin | 14:03.10 | Taylor County |
| 18. | 8 | Kaelyn Robinson | 14:04.38 | Wirt County |
| 19. | 6 | Mariah Whitlock | 14:06.40 | Pleasants County |
| 20. | 8 | Hollyn Reed | 14:07.19 | Warren Local |
| 21. | 8 | Sophie Stuck | 14:10.78 | East Fairmont |
| 22. | 6 | Hayden Henderson | 14:13.00 | Bridgeport |
| 23. | 8 | Payton Trent | 14:14.16 | Doddridge County |
| 24. | 8 | Ashley McBrayer | 14:25.36 | Bridgeport |
| 25. | 7 | Leah Payne | 14:29.83 | Braxton County |
| 26. | 7 | Savana Burd | 14:33.84 | Pleasants County |
| 27. | 8 | Abby Whited | 14:40.57 | Warren Local |
| 28. | 7 | Aslee Pate | 14:43.89 | Warren Local |
| 29. | 7 | Madison Altman | 14:52.44 | Washington Irving |
| 30. | 7 | Lily Dillaman | 15:05.31 | Tyler Consolidated |
| 31. | 8 | Brea Lathon | 15:15.32 | Mountaineer (Clarksburg) |
| 32. | 7 | Camryn Westbrook | 15:16.49 | Tyler Consolidated |
| 33. | 6 | Reece Carpenter | 15:17.18 | Braxton County |
| 34. | 8 | Natalee Cartwright | 15:18.76 | Taylor County |
| 35. | 7 | Suzanna Whipkey | 15:19.69 | Warren Local |

4/21/22, 7:04 PM

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| | | | | |
|------|---|-------------------------|----------|--------------------------|
| 36. | 7 | Kylie Cline | 15:20.97 | Covenant Christian |
| 37. | 6 | Madison Knabenshue | 15:21.68 | Buckhannon-Upshur |
| 38. | 8 | Cate Edgell | 15:25.72 | Warren Local |
| 39. | 8 | Cassidy McCarthy | 15:29.05 | Warren Local |
| 40. | 7 | Avery Moore | 15:30.57 | West Fairmont |
| 41. | 7 | Paige Snyder | 15:31.35 | East Fairmont |
| 42. | 6 | Natalie Beltner | 15:36.94 | Taylor County |
| 43. | 8 | Annika Shuman | 15:39.36 | Mountaineer (Clarksburg) |
| 44. | 7 | Nevaeh Bolin | 15:40.56 | Ritchie County |
| 45. | 7 | Piper Woofter | 15:41.55 | East Fairmont |
| 46. | 6 | Liza Saas | 15:43.62 | Washington Irving |
| 47. | 8 | Absidee Carpenter | 15:45.71 | East Fairmont |
| 48. | 7 | Ryleigh Bills | 15:46.26 | East Fairmont |
| 49. | 6 | Andi Fiber | 15:49.01 | Tyler Consolidated |
| 50. | 6 | Addison Sole | 15:52.64 | Taylor County |
| 51. | 6 | Addi McGrady | 15:53.95 | Pleasants County |
| 52. | 8 | Lauren Pritt | 15:54.66 | Braxton County |
| 53. | 7 | Audrey Duckworth | 15:57.28 | Braxton County |
| 54. | 7 | Savannah Holden | 15:58.87 | South Harrison |
| 55. | 8 | Chloe Marsh | 15:59.26 | Bridgeport |
| 56. | 8 | Issabella Speece | 16:00.13 | Wirt County |
| 57. | 6 | Haley Woody | 16:12.03 | Buckhannon-Upshur |
| 58. | 7 | Jenna Willey | 16:12.53 | Lincoln |
| 59. | 8 | Lilly Haught | 16:18.77 | Tyler Consolidated |
| 60. | 6 | LenaRose Walker | 16:21.19 | Buckhannon-Upshur |
| 61. | 8 | Olivia Pursley | 16:24.74 | Wirt County |
| 62. | 7 | Linsey Kramer | 16:27.30 | East Fairmont |
| 63. | 6 | Destinee Gray | 16:31.57 | Pleasants County |
| 64. | 6 | Olivia Kimball | 16:32.52 | Pleasants County |
| 65. | 7 | Jordyn McIntyre | 16:40.49 | Bridgeport |
| 66. | 6 | Emma Kniceley-See | 16:40.90 | Bridgeport |
| 67. | 8 | Grace Dearth | 16:46.01 | Warren Local |
| 68. | 7 | Adalyn Moreland | 16:47.91 | Warren Local |
| 69. | 6 | Emma Ahmed | 16:50.77 | Bridgeport |
| 70. | 7 | Peyton Stevens | 16:51.80 | Taylor County |
| 71. | 8 | Lily Cross | 16:52.96 | Wirt County |
| 72. | 6 | Chelsea Payne | 16:56.79 | Braxton County |
| 73. | 6 | Isabella Eddy | 16:58.08 | Lincoln |
| 74. | 7 | Jahna Brown | 16:59.20 | Tyler Consolidated |
| 75. | 7 | Anya Morehead | 17:02.83 | Buckhannon-Upshur |
| 76. | 7 | Rania Singh | 17:03.24 | Warren Local |
| 77. | 6 | Anna Wycoff | 17:05.47 | East Fairmont |
| 78. | 7 | Avery Kessler | 17:13.69 | South Harrison |
| 79. | 7 | Zoey Bunner | 17:20.92 | Ritchie County |
| 80. | 8 | Kenna Keener | 17:25.26 | Taylor County |
| 81. | 7 | Lauren Brown | 17:25.54 | South Harrison |
| 82. | 6 | MillieCate Currey | 17:25.73 | Bridgeport |
| 83. | 6 | Chloe Lewis | 17:25.91 | Buckhannon-Upshur |
| 84. | 8 | Kamryn Watkins | 17:26.10 | Westwood |
| 85. | 7 | Brooklyn Davis | 17:26.62 | Pleasants County |
| 86. | 7 | Ayla Lilly | 17:36.60 | West Fairmont |
| 87. | 7 | Graylee Linville | 17:39.26 | Bridgeport |
| 88. | 6 | Colleen Freed | 17:41.70 | Ritchie County |
| 89. | 6 | Isabella Bowers | 17:48.16 | Buckhannon-Upshur |
| 90. | 7 | Rayonna Cain | 17:50.94 | Mountaineer (Clarksburg) |
| 91. | 7 | Autumn Cecil | 17:52.63 | Pleasants County |
| 92. | 6 | Ciarra Spring | 17:53.10 | Taylor County |
| 93. | 7 | Adreona Moore | 17:55.20 | Washington Irving |
| 94. | 7 | Annelise Mace | 18:01.32 | Bridgeport |
| 95. | 8 | Paiton Thompson | 18:05.51 | Bridgeport |
| 96. | 6 | Novalee Bennett | 18:06.60 | Braxton County |
| 97. | 8 | Bella Casto | 18:11.22 | Westwood |
| 98. | 6 | Alexis Buffey | 18:15.84 | West Fairmont |
| 99. | 6 | Lyla Garcia | 18:30.05 | West Fairmont |
| 100. | 6 | Reagan Sturgeon | 18:41.15 | Pleasants County |
| 101. | 7 | Olivia Roberts | 18:44.28 | Tyler Consolidated |
| 102. | 7 | Sophia Fox | 18:47.12 | Buckhannon-Upshur |
| 103. | 8 | Cynthia Wigel | 19:10.95 | Wirt County |
| 104. | 7 | Emily Brackman | 19:15.00 | Washington Irving |
| 105. | 7 | Addison Berg | 19:27.35 | Covenant Christian |
| 106. | 8 | Payton Janssen | 19:35.99 | Bridgeport |
| 107. | 7 | Kate Urso | 19:37.61 | Notre Dame |
| 108. | 8 | Regan Hardway | 19:42.54 | West Fairmont |
| 109. | 6 | Katrina Guthrie | 19:46.20 | Lincoln |
| 110. | 6 | Margaret (Maggie) Cable | 19:49.23 | Bridgeport |
| 111. | 6 | Ainsley Alexander | 19:54.42 | Taylor County |
| 112. | 6 | Alyena Mcle | 19:57.22 | Buckhannon-Upshur |
| 113. | 6 | Kaitlin Davis | 19:57.95 | Buckhannon-Upshur |
| 114. | 8 | Jacelyn Niethamer | 20:19.84 | Westwood |
| 115. | 8 | Ava Scolapio | 20:34.53 | Washington Irving |
| 116. | 8 | Erika Church | 20:35.32 | Lincoln |
| 117. | 8 | Giana Armistead | 20:39.78 | West Fairmont |
| 118. | 6 | Amelia Weekley | 20:44.27 | Pleasants County |
| 119. | 7 | Marley Rider | 21:00.11 | West Fairmont |
| 120. | 8 | Natalie Klemm | 21:03.86 | Warren Local |
| 121. | 7 | Bella Allen | 21:10.10 | Pleasants County |
| 122. | 8 | Breanna Cutright | 21:14.63 | Mountaineer (Clarksburg) |
| 123. | 6 | Becky Pepper-Jackson | 21:50.47 | Bridgeport |

4/21/22, 7:04 PM

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| | |
|-------------------------|-----------------------------|
| 124. 7 Olivia Markley | 21:57.35 East Fairmont |
| 125. 7 Claire McElwayne | 22:01.21 Notre Dame |
| 126. 7 Mercy Frase | 22:02.14 South Harrison |
| 127. 6 Makinsey Jeffers | 22:02.35 Pleasants County |
| 128. 8 Keirsten Pugh | 22:06.93 Bridgeport |
| 129. 6 Heaven Pittman | 22:09.28 Tyler Consolidated |
| 130. 6 Annaleigh Pierce | 22:10.80 Lincoln |
| 131. 7 Caitlin Murray | 22:25.51 Bridgeport |
| 132. 8 Ali Wilfong | 22:27.85 Taylor County |
| 133. 6 Raley Cochran | 22:42.76 Lincoln |
| 134. 6 Peyton Ice | 22:46.22 East Fairmont |
| 135. 6 Taylor Krollick | 23:11.16 Ritchie County |
| 136. 8 Autumn Wolfe | 23:18.39 Westwood |
| 137. 8 Kate Gaines | 23:26.56 Westwood |
| 138. 6 MaraBeth Hines | 23:49.05 Buckhannon-Upshur |
| 139. 6 Jordan Cox | 23:55.91 Taylor County |
| 140. 6 Arabella Jones | 24:06.51 Taylor County |
| 141. 7 Cailee Singh | 24:24.88 Lincoln |
| 142. 6 Haley Cross | 24:54.03 Wirt County |
| 143. 8 Elizabeth Conley | 25:08.96 Washington Irving |
| 144. 8 Andrea Huffman | 25:16.94 Ritchie County |
| 145. 6 Skylar Hayes | 25:36.46 Lincoln |
| 146. 8 Aaliyah Dodrill | 25:40.69 Lincoln |
| 147. 6 Lillie Nardella | 27:40.92 Notre Dame |
| 148. 6 Bella Yates | 28:48.53 Bridgeport |
| 149. 6 Zoe Fisher | 29:16.46 Tyler Consolidated |
| 150. 6 Sierra Perdue | 30:00.69 Wirt County |



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Sarah,

Per our discussion.

Thank you,
Melissa

Melissa J. White
Chief Counsel
Committee on Education
West Virginia House of Delegates
Room 432M
1900 Kanawha Boulevard, East
Charleston, WV 25305

From: Melissa White
Sent: Thursday, March 11, 2021 9:53 AM
To: Bernie Dolan <bernie.dolan@wvssac.org>; Bernie Dolan <bdolan@k12.wv.us>
Subject: Transgender participation in secondary schools bill

Bernie,

Attached is a draft of an originating bill regarding transgender participation in sports. I kept it short. There are obviously certain things that would need to be handled in a rule, unless you have language that you would like to see in the bill. Please let me know your thoughts and if there are any unintended consequences. The Chairman does not want to keep girls from participating in boys sports when there are not girls teams.

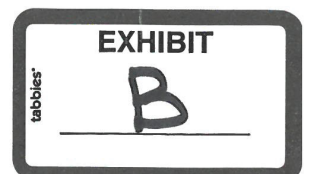
Thanks,
Melissa

Melissa J. White
Chief Counsel
Committee on Education
West Virginia House of Delegates
Room 432M
1900 Kanawha Boulevard, East
Charleston, WV 25305



2021 Green Book

*Summary of Public Education
Bills Enacted During the 2021
Regular Session*





**West Virginia Board of Education
2021-2022**

Miller L. Hall, President
Thomas W. Campbell, CPA, Vice President
F. Scott Rotruck, Financial Officer

Robert W. Dunlevy, Member
A. Stanley Maynard, Ph.D., Member
Daniel D. Snively, M.D., Member
Debra K. Sullivan, Member
Nancy J. White, Member
James S. Wilson, D.D.S., Member

Sarah Armstrong Tucker, Ph.D., Ex Officio
Chancellor
West Virginia Higher Education Policy Commission
West Virginia Council for Community and Technical College Education

W. Clayton Burch, Ex Officio
State Superintendent of Schools
West Virginia Department of Education

CODE CHANGES

| Code | Bill | Code | Bill | Code | Bill | Code | Bill |
|------------|---------|------------|---------|------------|---------|-----------|---------|
| §3-8-12 | HB 2009 | §18-5-16 | SB 375 | §18-9B-8 | HB 3177 | §18-31-4 | HB 2013 |
| §5-10-19 | HB 3191 | §18-5-18e | HB 3177 | §18-9B-9 | HB 3177 | §18-31-5 | HB 2013 |
| §11-1C-10 | HB 2581 | §18-5-43 | HB 3177 | §18-9B-10 | HB 3177 | §18-31-6 | HB 2013 |
| §11-3-15c | HB 2581 | §18-5-45a | SB 11 | §18-9B-11a | HB 3177 | §18-31-7 | HB 2013 |
| §11-3-15f | HB 2581 | §18-5G-1 | HB 2012 | §18-9B-12 | HB 3177 | §18-31-8 | HB 2013 |
| §11-3-15h | HB 2581 | §18-5G-2 | HB 2012 | §18-9B-13 | HB 3177 | §18-31-9 | HB 2013 |
| §11-3-15l | HB 2581 | §18-5G-4 | HB 2012 | §18-9B-14 | HB 3177 | §18-31-10 | HB 2013 |
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| §11-3-23a | HB 2581 | §18-5G-6 | HB 2012 | §18-9B-17 | HB 3177 | §18-31-12 | HB 2013 |
| §11-3-24 | HB 2581 | §18-5G-9 | HB 2012 | §18-9B-18 | HB 3177 | §18-31-13 | HB 2013 |
| §11-3-24a | HB 2581 | §18-5G-10 | HB 2012 | §18-9B-19 | HB 3177 | §18A-2-16 | HB 2267 |
| §11-3-24b | HB 2581 | §18-5G-11 | HB 2012 | §18-9B-20 | HB 3177 | §18A-2-25 | HB 3293 |
| §11-3-25 | HB 2581 | §18-5G-13 | HB 2012 | §18-9B-21 | HB 3177 | §18A-3-1 | HB 2029 |
| §11-3-25a | HB 2581 | §18-5G-14 | HB 2012 | §18-9D-15 | HB 2906 | §18A-3-2a | SB 14 |
| §11-3-32 | HB 2581 | §18-5G-15 | HB 2012 | §18-10H-4 | HB 3177 | §18A-3-2a | HB2029 |
| §11-10A-1 | HB 2581 | §18-7A-13a | HB 3191 | §18-30A-1 | HB 2001 | §18A-4-2 | SB 680 |
| §11-10A-7 | HB 2581 | §18-7A-36 | HB 3177 | §18-30A-2 | HB 2001 | §18A-4-8 | HB 2145 |
| §11-10A-8 | HB 2581 | §18-8-1 | HB 2013 | §18-30A-3 | HB 2001 | §18A-4-8a | HB 2145 |
| §11-10A-10 | HB 2581 | §18-8-1a | HB 2785 | §18-30A-4 | HB 2001 | §18A-4-16 | HB 3266 |
| §11-10A-19 | HB 2581 | §18-8-11 | SB 431 | §18-30A-5 | HB 2001 | §21-1A-4 | HB 2009 |
| §11-21-12m | HB 2001 | §18-9-3a | SB 651 | §18-30A-6 | HB 2001 | §21-5-1 | HB 2009 |
| §11-21-25 | HB 2001 | §18-9A-6a | HB 3177 | §18-30A-7 | HB 2001 | §21-6-3 | SB 435 |
| §11-24-10a | HB 2001 | §18-9A-7 | HB 3177 | §18-30A-8 | HB 2001 | §21-6-4 | SB 435 |
| §17B-2-7 | SB 356 | §18-9A-8a | HB 3177 | §18-30A-9 | HB 2001 | §21-6-5 | SB 435 |
| §18-2-5c | HB 3293 | §18-9A-15 | HB 2852 | §18-30A-10 | HB 2001 | §21-6-10 | SB 435 |
| §18-2-5d | HB 3177 | §18-9A-16 | HB 3177 | §18-30A-11 | HB 2001 | §49-2-113 | SB 89 |
| §18-2-9 | SB 636 | §18-9A-25 | HB 2013 | §18-30A-12 | HB 2001 | §55-19-1 | SB 277 |
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| §18-2E-4a | HB 3177 | §18-9B-5 | HB 3177 | §18-31-1 | HB 2013 | §55-19-6 | SB 277 |
| §18-3-9b | HB 3177 | §18-9B-6 | HB 3177 | §18-31-2 | HB 2013 | §55-19-7 | SB 277 |
| §18-4-12 | HB 3177 | §18-9B-6a | HB 3177 | §18-31-3 | HB 2013 | §55-19-8 | SB 277 |
| §18-5-15g | HB 2791 | §18-9B-7 | HB 3177 | | | §55-19-9 | SB 277 |

Legend for this page:

- **Black** designates amended code.
- **Red** designates stricken code.
- **Green** designates new code.

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Senate Bill 11: Declaring work stoppage or strike by public employees to be unlawful

Effective Date: June 2, 2021

Code Reference: Adds: §18-5-45a

WVDE Contact: Heather Hutchens, General Counsel, Office of Legal Services

Bill Summary: The bill confirms that a work stoppage or strike by public employees, and specifically employees of a county board of education, is both unlawful and disruptive to the delivery of the constitutionally required thorough and efficient education. The bill outlines when an employee is participating in a concerted work stoppage, strike, or interruption of operations. This bill clarifies that an employee may not take personal leave to participate in a work stoppage/strike and clarifies that a county board may not utilize accrued or equivalent instruction time or alternate delivery models to cancel or make up lost days. The bill clarifies that the West Virginia Board of Education (WVBE) waiver process cannot be utilized to waive the employment term or minimum instructional term if the noncompliance is because of a work stoppage or strike. This bill clarifies participation is a ground for termination, but if the county does not terminate the employee, the employee's salary should be prorated to account for the absence.

Senate Bill 14: Providing for additional options for alternative certification for teachers

Effective Date: May 27, 2021

Code Reference: Amends: §18A-3-2a

WVDE Contact: Carla Warren, Director, Educator Development and Support

Bill Summary: The bill proposes an alternative certification pathway for individuals to obtain a professional teaching certificate. The bill sets forth four requirements that an individual must obtain to be eligible to receive a professional teaching certificate: (1) hold a bachelor's degree; (2) submit to a criminal history check; (3) successfully complete pedagogical training or pedagogical course(s) that are in substantive alignment with nationally recognized pedagogical standards, or approved/established by the state board; and (4) pass the same subject matter and competency tests required of traditional program applicants for licensure.

Senate Bill 89: Exempting certain kindergarten and preschool programs offered by private schools from registration requirements.

Effective Date: July 4, 2021

Code Reference: Amends: §49-2-113

WVDE Contact: Monica DellaMea, Director, Early and Elementary Learning Services

Bill Summary: The passage of this bill no longer requires certain early childhood programs to obtain approval of its operations from the secretary of the West Virginia Department of Health and Human Resources through the child care licensure process. This includes kindergarten, preschool, or school education programs operated by a public school or which is accredited by the West Virginia Department of Education or any other kindergarten, preschool, or school programs which operates with sessions not exceeding four hours per day for any child pre-k and kindergarten programs. Any kindergarten, preschool, or school education program operated by a private, parochial, or church school recognized by the West Virginia Department of Education under Policy 2330 are also not required to obtain approval of its operations.

Senate Bill 277: Creating COVID-19 Jobs Protection Act

Effective Date: March 11, 2021

Code Reference: Adds: §55-19-1; §55-19-2; §55-19-3; §55-19-4; §55-19-5; §55-19-6; §55-19-7; §55-19-8; §55-19-9

WVDE Contact: Legal Services

Bill Summary: The bill provides immunity to county boards of education, among other, to claims arising from the COVID-19 pandemic, provided the county board (or any of its employees or agents) did not intentionally engage in conduct with actual malice to cause injury.

Senate Bill 356: Allowing for written part of drivers' exam given in high school drivers' education course.

Effective Date: June 24, 2021

Code Reference: Amends: §17B-2-7

WVDE Contact: Joey Wiseman, Director, Middle and Secondary Learning Services

Bill Summary: The bill allows for West Virginia Driver Education Instructors to administer a knowledge test developed by the Division of Motor Vehicles. Any person who successfully completes a test administered by a driver education instructor is exempt from the proof of school enrollment requirements.

Senate Bill 375: Relating to county boards of education policies for open enrollment.

Effective Date: July 6, 2021

Code Reference: Amends: §18-5-16

WVDE Contact: Legal Services

Bill Summary: The bill makes a few changes to the modifications that were made in the 2019 education omnibus bill relating to intercounty transfers (where a student seeks to attend school in a county other than the one where he or she resides) and reinserts funding language that was inadvertently omitted in the 2019 bill. Substantively, the bill says that an intercounty transfer application may only be denied by a county board of education if there is no classroom space available. If an intercounty transfer request is denied, the denial must be in writing and sent to both the parents of the student and the West Virginia Department of Education (WVDE), with explanation of denial and notification of appeal rights, within three business days.

Senate Bill 431: Relating to school attendance notification requirements to DMV.

Effective Date: June 24, 2021

Code Reference: Amends: §18-8-11

WVDE Contact: Charlene Coburn, Officer, Support and Accountability Services

Bill Summary: The bill authorizes DMV to accept electronic verification of a student's attendance and satisfactory academic progress from a county board of education. Verification of these two items is statutorily required prior to issuance of a driver's license or learner's permit.

Senate Bill 435: Requiring county superintendents to authorize certain school principals or administrators at nonpublic schools to issue work permits for enrolled students.

Effective Date: June 24, 2021

Code Reference: Amends: §21-6-3; §21-6-4; §21-6-5; §21-6-10

WVDE Contact: Legal Services

Bill Summary: The bill permits individuals that are authorized to issue graduation credentials (nonpublic school administrators and homeschool parents) to issue a work permit to children 14 or 15 years of age provided the current statutory requirements for issuing a work permit are satisfied (i.e., written statement from prospective employer that they intend to employ the child; brief description of job child will perform; review of birth certificate verifying child's age; for children attending a nonpublic schools, a certificate showing school attendance). The bill imposes the same responsibilities and penalties for improper issuance of a work permit on nonpublic school administrators and home school parents that are currently imposed upon county superintendents issuing work permits.

Senate Bill 636: Requiring certain history and civics courses be taught in schools.

Effective Date: July 9, 2021

Code Reference: Amends: §18-2-9

WVDE Contact: Sonya White, Officer, Office of Teaching and Learning
Joey Wiseman, Director, Middle and Secondary Learning Services, Office of Teaching and Learning

Bill Summary: The bill adds the following topics/areas that must be taught in all public, private, parochial, and denominational schools in West Virginia:

- Institutions and structure of American government, such as the separation of powers, the Electoral College, and federalism.
- American political philosophy and history utilizing writings from prominent figures in Western civilization, such as Aristotle, Thomas Hobbes, John Locke, and Thomas Jefferson.
- Objective and critical analysis of ideologies throughout history, including capitalism, republicanism, democracy, socialism, communism, and fascism.

In providing this instruction, the bill directs that teachers use primary sources and interactive learning techniques, such as mock scenarios, debates, and open and impartial discussions.

The WVBE is directed to develop academic standards for middle and high school students that cover the required instruction and publish a list of approved instructional resources pursuant to 18-2A-1, et seq. The WVBE is required to consult with “other entities” prior to adopting standards; the bill lists the following entities as possible entities to consult: Florida Joint Center for Citizenship, College Board, Bill of Rights Institute, Hillsdale College, Gilder Lehrman Institute of American History, Constitutional Sources Projects, educators, school administrators, postsecondary education representatives, elected officials, business and industry leaders, parents, and the public.

The WVBE is also required to provide a testing/assessment for the history and civics courses required. Such assessments must measure a students’ factual and conceptual knowledge including how facts interrelate and the reasons behind historical documents and events. All students in public, private, parochial, and denominational schools are required to take these assessments.

Senate Bill 651: Allowing county boards of education to publish financial statements on website.

| | |
|------------------------|--|
| <i>Effective Date:</i> | July 6, 2021 |
| <i>Code Reference:</i> | Amends: §18-9-3a |
| <i>WVDE Contact:</i> | Amy Willard, School Operations Officer, Office of School Operations and Finance |
| <i>Bill Summary:</i> | Starting with financial statements to be published in the fall of 2024, the bill extends the time for county boards of education (CBOE) to annually publish their financial statement in the newspaper from 90 days to 120 days. |

Also starting in 2024, the bill provides an electronic option in place of posting the financial statement in the newspaper if certain conditions were met. After conducting a properly noticed public hearing at which interested persons could express their views electronic publication, a CBOE could post its financial statement on the CBOE’s website. The first year the CBOE utilizes the electronic option it is required to publish in the newspaper for two consecutive weeks the availability of the financial statement on the CBOE’s website.

In addition to all financial information currently required to be included in the CBOE's financial statement, if the CBOE utilizes the electronic option to post financial statement it must also include the following information: (1) all persons having a contract with the county board (all professional and service personnel, including substitutes) and the amount paid to each; (2) budget estimates; and (3) list of names of each entity receiving less than \$250 from any fund showing the amount paid and purpose for which it was paid. Financial statements posted on the CBOE website must remain posted until the posting of the following year's financial statement.

Senate Bill 680: Allowing State Superintendent of Schools define classroom teachers certified in special education.

Effective Date: July 5, 2021

Code Reference: Amends: §18A-4-2

WVDE Contact: Amy Willard, School Operations Officer, Office of School Operations and Finance

Bill Summary: This is a 'clean-up' bill to a provision included in HB206 (passed in 2019) that provides a three step pay bump to special education classroom teachers.

House Bill 2001: Relating generally to creating the West Virginia Jumpstart Savings Program

Effective Date: June 9, 2021

Code Reference: Adds: §11-21-12m; §11-21-25; §11-24-10a; §18-30A-1; §18-30A-2; §18-30A-3; §18-30A-4; §18-30A-5; §18-30A-6; §18-30A-7; §18-30A-8; §18-30A-9; §18-30A-10; §18-30A-11; §18-30A-12; §18-30A-13; §18-30A-14; §18-30A-15; §18-30A-16

WVDE Contact: Amy Willard, School Operations Officer, Office of School Operations & Finance
Phillip Uy, Financial Officer

Bill Summary: The bill establishes the West Virginia Jumpstart Savings Program as a result of the Legislature recognizing the importance of cultivating an environment in West Virginia where tradespersons and entrepreneurs can be successful in their careers and remain in their home state. The program is to be operable on or before July 1, 2022.

- The bill indicates that the program shall be administered by the West Virginia Jumpstart Savings Board (Board) and outlines the seven members who serve on the Board. The bill outlines the powers and

- authority of the Board to successfully administer the program.
- The bill also outlines the duties and responsibilities of the Treasurer, who is also the chairman and presiding officer of the Board.
 - The bill further establishes the Jumpstart Savings Trust Fund and Jumpstart Savings Expense Fund for the administration of the program and outlines the process for selecting financial organizations to act as depositories and managers for the programs.
 - The bill defines the eligibility criteria for opening a Jumpstart Savings Account and for when the Treasurer will deposit \$100 into a newly opened account.
 - The bill defines qualifying expenses, which include:
 - » The purchase of tools, equipment, or supplies by the beneficiary to be used exclusively in an occupation or professional for which the beneficiary is required to:
 - » Complete an apprenticeship program through the United States Department of Labor
 - Complete an apprenticeship program required by state or legislative rule
 - Earn a license or certification from an Advanced Career Education (ACE) career center; or
 - Earn an associate degree or certification from a community and technical college.
 - » Fees for required certification or licensure for the beneficiary to practice a trade or occupation in the state as described above.
 - » Costs incurred by the beneficiary that are necessary to establish a business in this state in which the beneficiary will practice an occupation or profession as described above, when the costs are exclusively incurred and paid for the purpose of establishing and operating such business.
 - The bill provides for certain tax benefits for contributors to a Jumpstart Savings Account. For West Virginia personal income tax purposes, a taxpayer's adjusted gross income is reduced by an amount equal to the taxpayer's contribution to a Jumpstart Savings Account, up to \$25,000 in a single taxable year, with a carryforward provision not to exceed five taxable years. A similar modification is allowed in an amount equal to a distribution received from a Jumpstart Savings Accounts that is used to pay for qualified expenses, not to exceed \$25,000 for the taxable year.
 - The bill provides for certain nonrefundable tax credits against West Virginia personal income tax and corporate net income tax for a

matching contribution made by a qualified employer into a Jumpstart Savings Account if the beneficiary of the account is an employee of the taxpaying employer and if the beneficiary is a West Virginia resident. The tax credit allowed may not exceed \$5,000 per employee per taxable year and an employer may not claim a credit against more than one type of tax for a single contribution to a Jumpstart Savings Account.

- The bill requires the Board to promulgate legislative, procedural, or emergency rules that outline specific requirements related to the program.

House Bill 2009: Relating to limitations on the use of wages and agency shop fees by employers and labor organizations for political activities.

Effective Date: June 17, 2021

Code Reference: [Add: §7-5-25](#)
Amends: §8-5-12; §12-3-13b; §18A-4-9; §21-5-1; §21-5-3; §45A-2-116

WVDE Contact: Legal Services

Bill Summary: Relating to limitations on the use of wages and agency shop fees by employers and labor organizations for political activities. House Bill 2009 prohibits the deduction or assignment of union, labor organization or club dues or fees from the earnings of county board of education employees. As for wage assignments for permissible purposes, the bill also removes the requirement that assignments of an employee's future wages must be notarized. It will now be sufficient if the assignment is in writing.

House Bill 2012: Relating to Public Charter Schools

Effective Date: June 1, 2021

Code Reference: Amends: §18-5G-1; §18-5G-2; §18-5G-4; §18-5G-5; §18-5G-6; §18-5G-9; §18-5G-10; §18-5G-11
[Adds: §18-5G-13; §18-5G-14; §18-5G-15](#)

WVDE Contact: Legal Services

Bill Summary: The bill makes the following changes to the existing public charter school law:

- Increases the cap on charter schools from 3 to 10 every three years.