Good afternoon. My name is Sharon Carrick and I am here today in my capacity as President of the Maryland Federation of Republican Women.

In 2015, the Maryland General Assembly's Task Force to Study Sports Injuries in High School Female Athletes stated on page 63 that:

> *Gender differences between the female and male athletes can place the female at higher risk of certain injuries when competing in high school athletics.*
>
> *Differences include anatomical, neuromuscular, hormonal, and developmental differences in comparison to their male counterparts.*

Our members personally delivered this brochure to every legislator on January 11th. It contains excerpts from more recent research by respected educational, medical and government entities that validate the findings of the Task Force.

- Yale New Haven Health
  - Teen girls are more prone than boys to some of the most common sports-related injuries. These differences are credited to body function, hormones and bone density.

- National Library of Medicine
  - Higher rates of concussions are observed in female athletes despite competition rules designed to reduce the level of contact between players.

- Journal of Functional Morphology and Kinesiology
  - Women athletes are known to be less strong and powerful than equally trained men.

- Duke Law School
  - There is an average 10-12% performance gap between elite males and females. Though the gap is smaller between elite females and non-elite males, it is still insurmountable.

More findings from the studies mentioned can be found in my submitted written testimony.

Please vote a **FAVORABLE** report for **HB47**.

Let us not fail future generations of high school girls who are relying on us to preserve for them a safe and level playing field.

Boys competing in girls' sports – IS IT SAFE? IS IT FAIR?

Title IX obligations with respect to athletic programs and activities:

- **Proportional financial assistance (i.e., scholarships)**
- **Equivalent benefits and opportunities**
- **Effective accommodation of interest and abilities**

SOURCE: Congressional Research Service, *Title IX and Athletics: Legal Basics* (2/09/23)

https://crsreports.congress.gov/product/pdf/IF/IF12325#:~:text=Title%20IX%20regulations%20require%20recipients,and%20tutoring%2C%20including%20compensation%20thereof

While directed toward intercollegiate athletics, the general principles and standards in the Policy Interpretation often apply to interscholastic athletics programs at the elementary and secondary levels, as well as to club and intramural programs.

While Title IX prohibits sex discrimination in recipient schools' athletics programs, this does not mean all sex-based distinctions are banned. According to Title IX regulations, schools may offer separate athletics teams for each sex where selection is based on competitive skill or the activity is a contact sport.

There is an average 10-12% performance gap between elite males and elite females. The gap is smaller between elite females and non-elite males, but it's still insurmountable.

SOURCE: Duke Law School, *Comparing Athletic Performances: The Best Elite Women to Boys and Men*

https://law.duke.edu/sports/sex-sport/comparative-athletic-performance/

- In 2017, Olympic, World, and U.S. Champion Tori Bowie's 100 meters lifetime best of 10.78 was beaten 15,000 times by men and boys.

- In 2017, men and boys around the world outperformed Olympic, World, and U.S. Champion Allyson Felix's 400 meters lifetime best of 49.26 more than 15,000 times.

"The results make clear that sex determines win share. Female athletes – here defined as athletes with ovaries instead of testes and testosterone (T) levels capable of being produced by the female, non-androgenized body – are not competitive for the win against males—here defined as athletes with testes and T levels in the male range. The lowest end of the male range is three times higher than the highest end of the female

range. Consistent with females' far lower T levels, the female range is also very narrow, while the male range is broad."

Data below was drawn from the International Association of Athletics Federations (IAAF) website which provides complete, worldwide results for individuals and events, including on an annual and an all-time basis. The analysis was limited to those events where a direct performance comparison could be made. Not only did hundreds and thousands of males outperform the best results of the elite females, they did so thousands and tens of thousands of times.

Event	Best Women's Result	Best Boys' Result	Best Men's Result	# of Boys Outperforming	# of Men Outperforming	Instances of Men Outperforming
100 Meters	10.71	10.15	9.69	124+	2,474	10,009
200 Meters	21.77	20.51	19.77	182	2,920	8,993
400 Meters	49.46	45.38	43.62	285	4,341	13,898
800 Meters	1:55.16	1:46.3	1:43.10	201+	3,992	12,285
1500 Meters	3:56.14	3:37.43	3:28.80	101+	3,216	8,251
3000 Meters	8:23.14	7:38.90	7:28.73	30	1,307	1,784
5000 Meters	14:18.37	12:55.58	12:55.23	15	1,243	2,140
High Jump	2.06 meters	2.25 meters	2.40 meters	28	777	2,741
Pole Vault	4.91 meters	5.31 meters	6.00 meters	10	684	2,981
Long Jump	7.13 meters	7.88 meters	8.65 meters	74	1,652	4,801
Triple Jump	14.96 meters	17.30 meters	18.11 meters	47	969	3,440

Women athletes are known to be less strong and powerful than equally trained men. Muscle strength of women is typically reported in the range of 40 to 75% that of men. Women are also known to be less powerful than equally trained men.

SOURCE: Journal of Functional Morphology and Kinesiology, *A Comparison between Male and Female Athletes in Relative Strength and Power Performances* (2/09/21)

https://www.mdpi.com/2411-5142/6/1/17

The aim of this study was to compare male vs. female athletes in strength and power performance relative to body mass and lean body mass and to investigate the relationships between muscle architecture and strength in both genders.

The difference in absolute strength between genders appears more evident in the upper body compared to the lower body. The main factors accounting for gender differences in maximal strength have been identified as the muscle mass. Maximal strength and power are influenced by many neuromuscular factors including muscle morphological characteristics such as muscle thickness, pennation angle, and fascicle length.

Significant differences were found in strength and power relative to body mass, lean body mass, and muscle thickness between male and female strength and power athletes.

- Women had lower maximal strength values when compared to men at bench press (- 59.2%), squat (-57.2%), deadlift (-56.3%), and mid-shin pull (-53.2%). Lower levels of power were detected in females in both the upper (-61.2%) and the lower body (-44.2%).

- No differences between sexes were found in lower body maximal strength and power adjusted for lean body mass.

- Higher maximal strength and power adjusted for lean body mass were detected in the upper body.

- Muscle thickness in male individuals were characterized by significantly higher values compared to females. Muscle fascicle length was significantly longer in males compared to females. It has been suggested that they play an important role in determining the maximum contraction velocity of the muscle and the range of active force production.

The Maryland General Assembly's 2015 report of the Task Force to Study Sports Injuries in High School Female Athletes stated that "*differences between the female and male athletes can place the female at higher risk of certain injuries when competing in high school athletics*".

SOURCE: Maryland General Assembly, *Report of the Task Force to Study Sports Injuries in High School Female Athletes* (Dec 2015)

https://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/021000/021772/unrestricted/20160016e.pdf

The Task Force to Study Sports Injuries in High School Female Athletes was established during the 2014 Maryland General Assembly session (House Bill 1332).

Page 63
Gender differences between the female and male athletes can place the female at higher risk of certain injuries when competing in high school athletics. Differences include anatomical, neuromuscular, hormonal, and developmental differences in comparison to their male counterparts.

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Disorders of relative energy deficiency (e.g. female athlete triad) are disproportionately seen in adolescent girls and emerging adult women. The irregular menstrual cycles, reduced bone density, and the disordered eating observed in affected female athletes are symptoms to be recognized given the association with observed adverse health outcomes (e.g. stress fractures). There is data that suggests that the general wellness and nutritional environments through which female athletes develop may influence athletic performance, risk for injury, and return to play after an injury.

Proposed rulemaking on athletic eligibility under Title IX would establish that policies violate Title IX when they categorically ban transgender students from participating on sports teams consistent with their gender identity just because of who they are.

The Department of Education received more than 240,000 public comments on the proposed rulemaking. The Department anticipates issuing the final Title IX rule in October 2023.

SOURCE: U.S. Department of Education, *FACT SHEET: U.S. Department of Education's Proposed Change to its Title IX Regulations on Students' Eligibility for Athletic Teams* (4/06/23)

https://www.ed.gov/news/press-releases/fact-sheet-us-department-educations-proposed-change-its-title-ix-regulations-students-eligibility-athletic-teams

- *The proposed rule would apply to public K-12 schools, as well as colleges, universities, and other institutions that receive federal funding.*

- *The Department's approach would allow schools flexibility to develop team eligibility criteria that serve important educational objectives, such as ensuring fairness in competition or preventing sports-related injury. These criteria would have to account for the sport, level of competition, and grade or education level to which they apply. These criteria could not be premised on disapproval of transgender students or a desire to harm a particular student. The criteria also would have to minimize harms to students whose opportunity to participate on a male or female team consistent with their gender identity would be limited or denied.*

- *Under the proposed regulation, schools would not be permitted to adopt or apply a one-size-fits-all policy that categorically bans transgender students from participating on teams consistent with their gender identity.*

Boys competing in girls' sports – IS IT SAFE? IS IT FAIR?

Despite scientific evidence from many sources that clearly demonstrates physical superiority of biological males over biological females and greater susceptibility to certain sports injuries, the U.S. Department of Education has chosen to emphasize the emotional wellbeing of transgender students rather than the physical safety of biological female athletes.

SOURCE: Yale New Haven Health, *How Teen Girls Can Prevent Sports* Injuries (19 Jun 2023)
https://www.ynhhs.org/articles/how-teen-girls-can-prevent-sports-injuries

- *Teen girls are more prone than boys to some of the most common sports-related injuries. These differences are credited, in general, to body function, hormones and bone density. Ankle sprains, knee injuries and stress fractures are among the more common sports-related injuries in girls.*

- *Injury to the anterior cruciate ligament (ACL) is one of those injuries that, after puberty, disproportionately impacts female athletes. The risk of an ACL tear is two to six times greater in girls than boys. The risk comes from many factors, including muscle imbalance in the thighs. Girls' quadriceps can overpower their hamstrings, which puts pressure on the knee.*

SOURCE: National Library of Medicine, *Sex Differences in Common Sports Injuries* (14 Mar 2018)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6138566/

- *Common sports injuries include bone stress injuries (BSIs), anterior cruciate ligament (ACL) injuries, and concussions. Less commonly recognized are the specific sex differences in epidemiology, risk factors, and outcomes of these conditions by sex.*
    - *Biomechanical and anatomical risk factors for BSI in female athletes. This includes reduced calf circumference, high rates of loading, increased tibial free moment, and femoral adduction.*
    - *Across all levels of play in basketball and soccer, female athletes are 2–8 times more likely to sustain an ACL injury than their male counterparts. Noncontact ACL injury is a multifaceted event influenced by anatomical, neuromuscular, biomechanical, genetic, hormonal, and other risk factors.*
        - *Anatomical risk factors for an ACL injury include 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. Each of these factors is more likely to occur in female than male athletes.

- *Current research suggests that concussion rates are higher for female athletes compared to male athletes when examined on the basis of sports with comparable exposure types.*
  - *Higher rates of concussions are observed in female athletes despite competition rules designed to reduce the level of contact between players. Female lacrosse is a noncontact sport; however, the relative risk of concussion in females is 64% higher than in males. Epidemiologic studies in high school athletes demonstrate a higher rate of injury in female athletes.*
  - *Females tend to have a reduced amount of neck girth and strength relative to head size and head-neck length compared to males. This may reduce the overall stability and stiffness of the head-neck segment such that it is less able to absorb externally applied forces. Decreased neck strength has been associated with an increased risk for concussion, with every additional pound of neck strength reducing the odds of concussion by 5% in high school athletes*
  - *Most studies have found an increased duration of time loss for female athletes following a concussion, and that females are at an elevated risk for post-concussive syndrome compared to males.*

- *Risk factors in female athletes include smaller calf girth, femoral adduction, and higher rates of loading.*
- *Concussions occur more commonly in female athletes*
- *Discussion of sex-specific factors for sports injuries refers to biological differences. Sex differences relate to factors including hormones, anatomy, or X and Y chromosome gene expression. Gender is associated with societal behaviors and cultural factors.*
- *Intrinsic and extrinsic injury risk factors include the influence of hormones, neuromuscular control, biomechanics, anatomy, and societal differences in sports participation.*

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