Testimony for Senate Hearing on SB208

My name is DeAnna Marshall and I am an internal medicine physician. I currently work at Prairie Star Community Health Center in Hutchinson, Kansas doing preventative medicine with our diabetics. I grew up in Derby, Kansas where I participated in club and high school gymnastics. I went to Oklahoma State University my freshman year as a walk on for their gymnastics team, but after breaking my foot I decided to stop sports and focus on my college degree. Women's sports were just getting big when I was young and competing in gymnastics Olga Korbut had just hit the scene. It is amazing to see how much the sport has evolved over the years and how competitive women's sports have become. However, the evidence is clear that women cannot compete fairly against men as shown in Table 1. This is seen in every category: speed, strength, explosive power, etcetera. For this reason, I have significant concerns regarding the participation of transgender females in women's sports.

Table 1: Comparison of male and female records in common track and field events (Langford, 2019).

Event	Male Record	Female Record	Difference	% Difference
100m	9.58	10.49	0.91	9%
200m	19.19	21.34	2.15	10%
400m	43.03	47.6	4.57	10%
800m	01:40.9	01:53.3	12.37	11%
1500m	03:26.0	03:50.1	24.07	10%
5000m	12:37.4	14:11.2	1:33	11%
10000m	26:17.5	29:17.4	3:00	10%
Marathon	2:00:25	2:15:25	15:00	11%
High jump	2.45 m	2.09 m	0.36 m	17%
Long jump	8.95 m	7.52 m	1.43 m	19%
Triple Jump	18.29 m	15.50 m	2.79 m	18%
Pole vault	6.16 m	5.06 m	1.1 m	21%

Current regulations require that a transgender female must have a testosterone level below 10 nmol/L for at least 12 months prior to competing. There are many studies that show transgender women continue to show advantages over cisgender women well beyond one year (Roberts, 2020). This suggests that the allowed testosterone level should be set even lower to 5 nmol/L. This is because there is more at play than testosterone levels alone. There are some 6500 genes differentially expressed between males and females. These lead to an estimated 3000 sex-specific differences in skeletal muscle which influence composition and function beyond the effects of testosterone influence. A review of fitness data on 85,000 Australian children ages 9-17 years showed that nine-year-old males had an advantage over nine-year-old females. The results showed that boys were 9.8% faster in short sprints, 16.6% faster in a one-mile run, jumped 9.5% from a stand, performed 33% more push-ups in thirty seconds, and had 13.8% stronger hand grip (Hilton, 2020). It has also been shown that males have a higher aerobic capacity relative to body mass known as VO_2 max. This shows that there is a competitive advantage for males beyond hormone influence. Men have been shown to have larger hearts, lungs, and bone structure which in my opinion would not be altered by reducing testosterone levels. These characteristics provide an advantage in most sports.

Another example of this is when our international women's soccer team played the "under 15" boys league team in Dallas to prepare for an international game against Russia in 2017. The women were defeated 5-2. Remember, these were boys no older than age fourteen!

An argument often used to show that transgender women do not have an unfair advantage is that there are transgender women who do not always win. This is an unfair criteria to support their argument because it does not take into account training and effort level. You would need to compare trans and cis athletes at the same intensity of training and use scientific measurements to evaluate effort to make this a valid consideration in the conversation.

From the data I have reviewed, if a transgender woman athlete were to train at the same intensity as a cisgender woman athlete, she would have an advantage beyond what hormones are responsible for. There have been so many advancements in women's sports. These women are training so hard that it saddens me to have their records, scholarships, and possibly employment opportunities diminished.

Reference List

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