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22 June 2012

Congressman Howard 'Buck' McKeon
Chairman House Armed Services Committee
Attention: Mr. Mike Higgins
U.S. House of Representatives
2184 Rayburn HOB
Washington, D.C. 20515

Subj.: Physical and physiological issues associated with assignment of women to direct combat units

Dear Mr. McKeon:

I am writing in reference to the Defense Department's ongoing incremental steps now in progress toward the goal of assigning women to ground combat units to provide your Committee with relevant information about underlying characteristic physical and physiological factors that would be detrimental to the safety of women, and on the operational effectiveness of the unit and mission outcome.

By way of introduction, I am a retired former career Navy Medical officer, who has extensive knowledge of military physical standards including those involving special duty assignments; and a solid understanding of the underlying physical and physiological processes involved.

While women in the military have repeatedly demonstrated great courage, determination and skill in supporting the mission, their assignment to any unit which is required by the mission and nature to close with and to kill the enemy by close combat would be inappropriate in view of the naturally occurring, unalterable anatomical and physiological differences in physical strength and endurance that exist between males and females. Those differences are hormonal in nature, and cannot be ignored without jeopardizing the lives and safety of all members of a unit, and degrading its ability to carry out a successful mission.

Testosterone is a naturally occurring steroid hormone from the androgen (male) group that is primarily secreted in the testes of males and to a much lesser degree the ovaries of females, with small amounts also being secreted, in both sexes, by the adrenal glands. On average, an adult male produces about ten times (300 to 1,200 ng/dl) more testosterone than does an adult female (30 ng/dl - 95 ng/dl).

In the male, testosterone has a profound effect on protein formation and increased muscular development that begins after the start of puberty during which there is a doubling of the muscle mass of all muscle groups. While men and women have an equal number of muscles and muscle fibers, the strength difference relates exclusively to muscle size that is determined by testosterone levels. Because women have less testosterone than men, they have smaller muscle fibers that result in the development of small-size muscles; in effect, women have less muscle to activate. That also is the reason why women develop less muscle when training with weights and exercising.

The anabolic effects of testosterone make men at least 30% stronger than women, especially in the upper body musculature, which provides a greater capability for doing the kind of heavy manual work associated with combat arms, such as carrying full packs, on forced marches, along with lugging weapons and ammunition, handling the radios, and when necessary carrying a wounded or dead comrade. Indeed, there is little overlap between the distributions of male and female upper-body strength.

Another male testosterone effect is that it increases the total quantity of bone matrix and calcium retention, in males, which result in a heavier and stronger skeleton. Also, it has a specific effect on shaping the anatomy of the male pelvis, by narrowing and lengthening the pelvic outlet resulting in a funnel-like shape pelvis, which adds greater strength to the entire pelvis for load-bearing tasks, and more efficient locomotion. In females, the lack of testosterone coupled with the effect of the female

hormone estrogen results in the development of a broad-ovoid pelvis that is best suited for childbearing and delivery functions.

In addition to larger muscle mass and bone strength, testosterone causes males to have larger hearts and lungs, and produce greater amounts of red blood cells, which enable an increased (40%) aerobic capacity when compared to that of females, which enables greater endurance in performing hard work and other combat related tasks.

Women have smaller hearts and require more blood to be pumped each minute at a given level of exertion because they have less hemoglobin in their blood to carry oxygen. These differences would put women at a distinct disadvantage, in carrying out ground combat related tasks that require strength and physical endurance, because they must operate at a higher percentage of their maximum capability, meaning that their reserve capacity would be smaller.

In 2010, the British Ministry of Defense issued a report titled: "Report on the Review of the Exclusion of Women from Ground Close-Combat Roles" in which it conducted that female soldiers were unsuited for the physical demands of direct close combat; and potential risks associated with maintaining cohesion in small mixed-gender tactical teams engaged in highly-dangerous close-combat operation.

In field tests associated with British Services' Combat Effectiveness Gender study of women in combat, a senior military official explained that the study concentrated solely on testing whether women "can carry the load." And the answer was: Only if it's not as heavy as the guys' burden. Seventy percent of women, in contrast to 20 percent of men, were unable to carry 90 pounds of artillery shells over a measured distance.

While 17 percent of men failed a test requiring a 12.5-mile march, with 60 pounds of equipment, followed by target practice simulating conditions under fire, the female failure rate was 48 percent. Women soldiers came up short in the field tests of strength and stamina despite complaints that performance on certain tasks had been "gender-normed" to mask differences in performance. Brigadier Seymour Monro, the Army's Director of Infantry, claimed that tests had been watered down, and certain particularly difficult tasks eliminated, in the interest of enhancing women's performance. Still, enough demanding tasks remained to reveal the potentially deadly differences

I highly recommend that the Committee request a copy of the 2010 Report as a reference in comparing the methodology and results with the current tests being conducted by the Army Ranger School and the Marine Corps Infantry Officer Course to ensure that there that there is no gender norming, and that the Army and Marine Corps tests required women to do all of the things that the males are required to do of nature and expected, with no exceptions.

In summary, men and women are not the same and therefore not interchangeable. There are naturally occurring, unalterable anatomical and physiological differences between the sexes that make women unsuitable for assignment to ground combat units. Ignoring those differences would be unwise, and pose a serious risk to not only to the lives and safety of the women, but also the combat effectiveness of the unit to carry out its mission. Based on the results of other feasibility studies on the suitability of assigning women to combat units, such as the British Services' 2010 report, I am inclined to agree that women should continue to be barred from serving in "close-combat roles."

Very Respectfully,

Hugh P. Scott