THE BIOMECHANICS OF WOMEN IN COMBAT

Better training, not lower standards, points the proper way toward diversity in the armed forces

BY PAMELA MCCAULEY BUSH
The U.S. Armed Forces are made up of the five armed service branches: Air Force, Army, Coast Guard, Marine Corps and Navy. These services have a leading role in the security and safety of the United States and its worldwide interests. To ensure the readiness of the soldiers, the armed forces rely on physical readiness testing (PRT) to assess the preparation of both male and female soldiers.

However, as the composition and eligibility for various careers within the military changes, the PRTs are being examined to make sure they do accomplish the goal of assessing the appropriate physical capabilities necessary for military job requirements and that they effectively measure the physical capabilities of male and female soldiers.

Recently, multiple media outlets reported that female Marines in boot camp are failing the upper body strength portion of the PRT at a rate of 55 percent. While statistics such as this are a reason for concern, the emphasis should be on understanding and addressing physiological and training issues surrounding this situation.

In other words, rather than interpreting this situation as “evidence” that women shouldn’t be in combat, we should instead focus on the issues that determine ability to pass PRT, such as fitness level at entry, predictive validity of PRT with respect to actual task performance and physical training programs used to prepare soldiers.

These core issues are being researched by many and should remain the focus in order to address the gap between the success of male and female military trainees in PRT and physical readiness.

Strength is necessary

Combat physical strength requirements can be significant:

- Soldiers carry up to 80 pounds on their body, walk long distances while bearing heavy loads, carry and maneuver weapons, carry fellow soldiers, set up equipment and handle various other tasks that largely depend on upper body strength.
- Research has shown that there is a positive correlation between muscular strength and extremity performance for both the lower and upper extremities.
- Women tend to have less skeletal muscle mass than men, especially in the upper body (arms, shoulders and chest), though there are conflicting research studies on whether skeletal muscle mass alone is actually the best indicator of performance.
- Pullups and arm hangs have been shown to have content validity and face validity as tests that assess the strength capability that is necessary to perform jobs that require upper body strength.

If women are to compete for combat roles, the focus does not have to be on muscle mass. Instead, a concerted effort needs to be placed on implementing physical training programs to increase muscular strength, particularly of the upper body.

The leading cause of injury in the U.S. Army is musculoskeletal injury, accounting for almost 31 percent of hospitalizations for male and female soldiers. This adversely affects military training, resulting in lost days and increased medical costs. Although recent studies show that women are at a greater risk than men for injury in basic training, the issue appears to be the fitness level at entry into the armed forces.

In fact, a research study on Army basic trainees using multivariate analyses, where demographics, body composition and initial physical fitness were controlled, female gender was no longer a significant predictor of injury.

Because many soldiers experience musculoskeletal injuries, there is no doubt that an enhanced training program targeting upper body strength requirements would benefit the armed forces across the board.

In 1994, Congress provided $40 million for biomedical research on issues of importance for military women, including physical readiness. As a result of this research, numerous findings have provided guidance and details on personal readiness, physical fitness, nutrition and body fat. This new information has allowed the military to reconsider the relevance of some standards.

This research has translated into applications and advances for the welfare of service women and the entire armed forces. While more research is needed in key areas, the outcomes have led to designing equipment, processes and task processes with relevant gender considerations that will ultimately lead to more prepared armed forces.

Given acceptable fitness levels coupled with effective physical fitness training, women can be successful in meeting the physical requirements for military task performance.

Lower standards aren’t acceptable

The way forward is to treat this problem as a need to address “fitness level at entry” and training programs rather than “women’s issues.” This is much preferable than a drive to relax the PRT standards for female soldiers. Indeed, the negative implications of relaxing the standard would be significant:

- A physically less prepared military
- More injuries to soldiers in combat and noncombat roles;
less fit soldiers tend to have more injuries and musculo-
skeletal conditions
• Higher risks of injury/death to people who are depending
on individuals who may not have the necessary strength
 to perform the critically important jobs that require upper
body strength
• Potential “backlash” against women in the military as
perceptions that their access to these positions is resulting
in a “diminished armed forces”

This does not mean women need to be elite athletes. Instead, they need to be trained to increase their muscular
strength, thus increasing their ability to meet and exceed the
requirements. A consistent and focused strength training
plan can accomplish the goal of increasing muscular strength
of the upper and lower body. The three female soldiers who
recently passed the pullup and arm hang tests enlisted in
infantry training school in North Carolina. Their abilities to
prepare for and ultimately meet the PRT standards are proof
of the benefits of proper strength training.

Enhancing the physical readiness of all members of the
military through upgraded and updated physical train-
ing programs will help all soldiers, not just women, as they
prepare for potential combat roles. Both male and female
soldiers will suffer from fewer injuries, and adding female
soldiers to combat duties will result in a stronger military.

Though some may view the addition of women to the
combat field as “weakening” the military, in fact, it will serve
to strengthen the armed forces due to their very strong and
prepared presence. Those soldiers that meet the standards,
male or female, with proper training and fewer injuries will
make better soldiers. The positive impact of true diversity
reigns true in this situation as in others where implementing
programs to enhance readiness increases the available pool of
individuals that the armed forces can choose from to maintain
America’s position as a leading global military force.

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