DACOWITS RFI #1

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DACOWITS – Gender Differences (RFI 1)

The Committee requests a briefing from each of the Military Services on the physiological differences between genders and how this data is used to inform decision making on women's integration efforts.

- **All Navy positions have been opened to women; the use of physiologic information to facilitate gender integration has not been required.**
- **Many military tasks have absolute workloads and environmental stressors. Navy physical standards, training, and policies are gender neutral, as determined by the Navy Inspector General's office in their Fiscal Year 2016 Occupational Standard Review.**
- **USMC has used information gathered since 2012 to evaluate physical standards and identify areas of disparity between genders in order to provide guidance on fitness prior to enlistment.**

"I don't care what shape you are, what gender you are, what color, where you come from – if you pass, you pass."
– 75th SECNAV Ray Mabus

What We Know

Gender Differences (RFI 1)

- **Navy:**
  - Navy Diver, EOD, and NSW communities
  - Female: 18.7% of AD USN (DMDC 12/16)

- **USMC:**
  - Research data on female Marines conducting proxy/actual ground combat tasks suggest some can meet or exceed the anticipated performance standards
  - Limitations are related to upper body strength and anaerobic power
  - Sex differences in injury type and anatomic location

Integration

Gender Differences (RFI 1)

- **Physical standards are based on ability to perform the occupation regardless of sex**
- **Setting valid physical (occupational) standards that are reflective of the true demands of an MOS will help provide qualified females with equal access to physically demanding occupations**
- **As the services begin to integrate into combat arms, we have limited information on females in these communities and, to our knowledge, there are no current efforts to monitor the physical differences between sexes**

Gaps and Future Directions

Gender Differences (RFI 1)

- **Longitudinal studies on longevity and sustainment in physically demanding tasks regardless of sex**
- **Sex-specific studies related to known differences**
- **Educational materials and training plans to assist in physical preparation**
- **Recommendations based on epidemiological studies of military personnel serving in environmentally and physically challenging MOSs, such as infantry, artillery, submarines, and tanks**

Examples of Differences

Gender Differences (RFI 1)

- **Female Physical Performance:**
  - Superior balance and flexibility
  - Similar anaerobic power when adjusted for lean body mass
  - Better maintenance of force or power output over repeated contractions at low intensities (up to 80% 1RM)
  - Similar muscular endurance when adjusted for lean body mass
  - 70-75% of the lower body strength (-30% lean body mass)
  - 40-60% of the upper body strength (-50% lean body mass)
  - Weigh ~25% less; 8% shorter (13 cm)
  - 15-30% lower maximal oxygen consumption
    - Less myocardial mass; lower stroke volume; reduced hemoglobin; for a given workload, operate at a relatively higher intensity, resulting in earlier fatigue
- **Musculoskeletal (MSk) Injury:**
  - Physiologic factors affect recovery, MSk and neurological adaptation, and connective tissue properties.
  - Males have 75% higher humeral and 85% higher femoral surface bone areas than females and 22% higher bone mineral density.
  - Higher incidence of MSk injury in initial military training.
  - Lower extremity (hip) injuries most prevalent in females vs. lower back and feet in males.
  - Sex is an independent factor for predicting injury rates but, when corrected for fitness, this no longer holds true.