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# **DACOWITS RFI 6**

# **Navy Culture & Force Resilience**

# **June 2023**



# DACOWITS RFI 6

## Physical Fitness Standards

a. Provide an overview of your Service's Body Composition (Body Fat) Assessment process for the past 5 years. If the process has changed within this time period, provide the impetus for the change(s), as well as describe what exactly was modified.

### Navy Body Composition Assessment

#### Step 1: Weight for Height

- If Sailor is within weight for height standards, they pass the BCA. If not, they proceed to Step 2.

#### Step 2: Abdominal Circumference (AC)

- AC measurement is taken horizontally at the top of the Iliac Crest
- If Sailor is within maximum allowable AC standard (Males 39 in., Females 35.5 in.), they pass the BCA. If not, they proceed to Step 3.

#### Step 3: Body Circumference (BC)

- BC measurement is calculated based on 2-site (Males, abdomen - neck) or 3-site (Females, waist + hips - neck) circumference measurements. Body fat percentage is estimated based on a Sailor's BC and height.
- If Sailor is within the maximum allowable body fat percentage (Males 26%, Females 36%), they pass the BCA. If not, they fail the BCA and are subject to administrative actions. Sailors that pass the BCA but are outside of their age-adjusted standard (AAS) for body fat are placed on the Fitness Enhancement Program (FEP) until within their AAS.

**No changes in the past five years**



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**b. Cite the anthropometric research utilized to support your Services' Body Composition (Body Fat) Assessment policy.**

**d. What is the margin of error associated with your Services' Body Composition (Body Fat) Assessment process (e.g., percentage range)?**

Hodgdon and Friedl. 1999. Development of the DoD Body composition estimation equations. Technical Report No. NHRC-TD-99-2B. San Diego, CA: Naval Health Research Center.

- Updated original equations for body density developed by Hodgdon & Beckett (1984) to utilize imperial units and validated equations against a four compartment model to estimate body fat percentage.
- Margin of error for current body fat percentage estimation equations
  - Men: 3.52% body fat
  - Women: 3.61% body fat

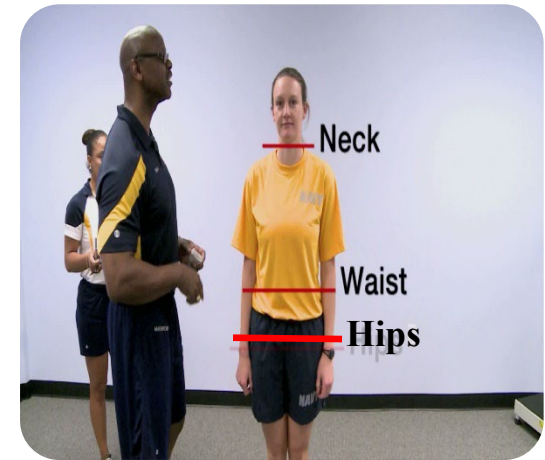
Peterson, D.D. 2015. History of the U.S. Navy body composition program. *Mil Med* 180:91-6.

- Abdominal fat is highly correlated to all-cause mortality risk; abdominal girth is a good indicator of that risk independent of BMI.
- NIH criteria for high risk is an abdominal circumference of 40 in. and 35 in. for males and females, respectively, as measured at the superior border of the iliac crest
- AC (Step-2) measurement introduced in Jan 2016

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c. Provide photos that demonstrate how Service members' body fat is assessed (by gender).





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**e. Explain whether the method of Body Composition (Body Fat) Assessment has either increased or decreased separations (broken down by gender). Provide data/metrics for the last 5 years.**

By Navy policy instituted in 2017, no Sailors are administratively separated for PFA failures.



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## Navy Body Composition Study – In Progress

### “Evaluation of Alignment of Current Navy Body Composition Analysis (BCA) Methods by Sex and as Indicator of Health and Performance.”

- To validate the current mathematical model in today’s more diverse Navy population by comparing anthropometric measurements obtained using three methods: Dual-energy X-ray Absorptiometry (DXA), 3-D Body Scanner, and Bioelectrical Impedance Analysis (BIA).
  - Examine BCA validity as it applies to sex differences (female vs. male) while taking into account other factors that can influence body composition (i.e., race/ethnicity, age, and postpartum status).
  - Determine if body fat percentages using BCA predicts performance (i.e., physical readiness test (PRT) scores) and general health (i.e., metabolic biomarkers, blood pressure).
- Timeline
  - Study commenced Sep 2022. Data analysis and a final report by Sep 2024.
  - Any changes to policy – TBD