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Effects of Overweight and Obesity on Recruitment in the Military

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Roundtable on Obesity Solutions

7 MAY 2018

UNCLASSIFIED





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Outline



- Prevalence of overweight and obesity in *military-age U.S. civilians*.
- Ineligibility of *military applicants* due to body weight and body fatness.
- Prevalence of *enlistees* that exceed Army weight-for-height guidelines and associated health risks.
- Recommendations for military recruitment.



Introduction



- Obesity has been posited as a threat to national security.
- Negative health implications impact health costs.
 - ~\$1.5B annually in health care expenses and costs to replace unfit personnel due to obesity.
- Obesity = lost work days, degraded readiness, higher need for aeromedical evacuation and ineligibility in recruitment.



Overweight & Obesity in the U.S.



Americans Ages 17-24 years

Three leading preventable causes of not being able to join the military include being overweight, lacking adequate education and having a history of crime or drug use.



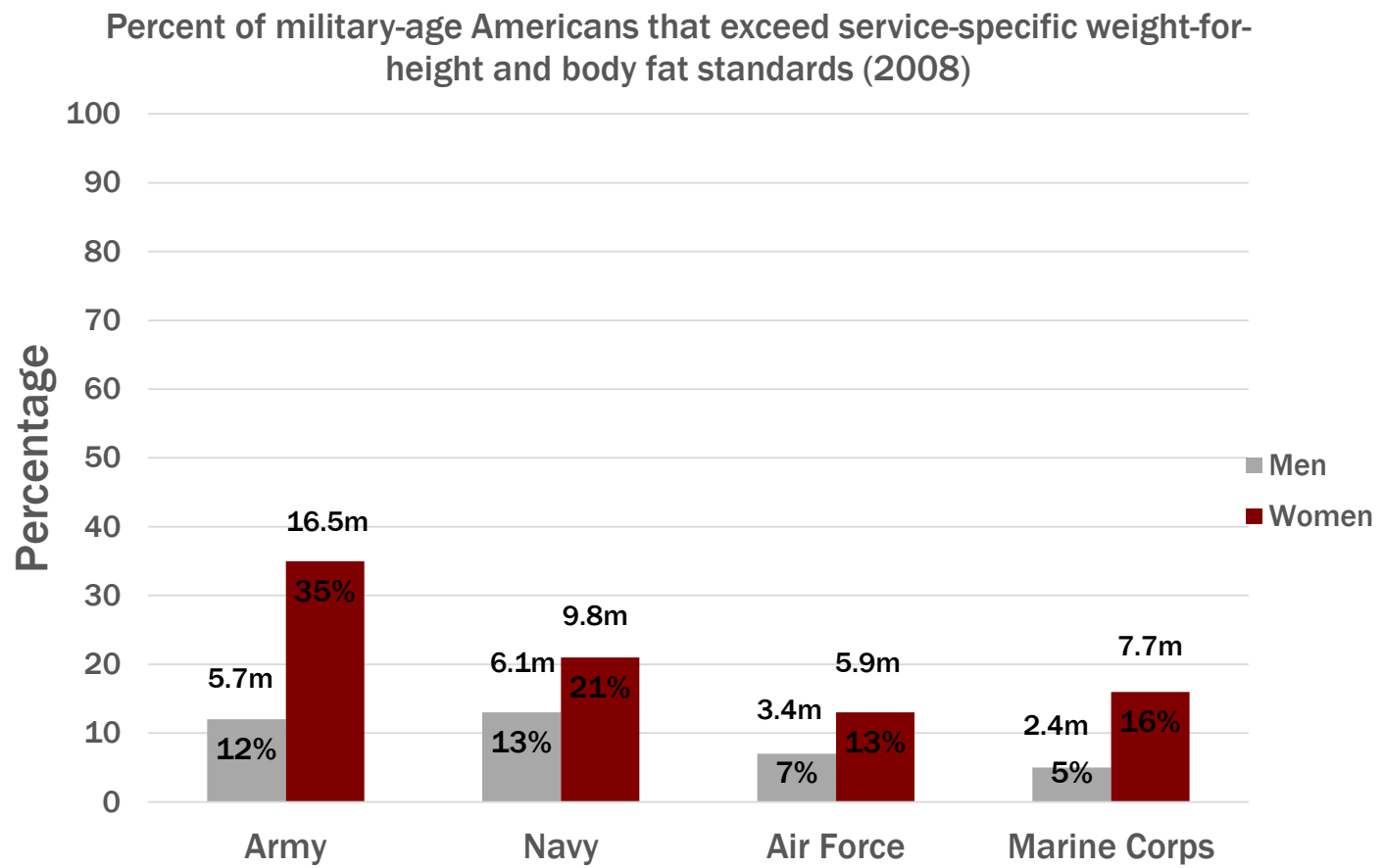
71%
of young Americans aged 17 to 24 are ineligible for military service

~1/3 of 17-24 year olds are too overweight to qualify for service

1., Figure produced by Mission: Readiness, Council for a Strong America, Washington, D.C., 2017, available at <http://strongnation.org/articles/414-> using data from the DoD's Joint Advertising Market Research and Studies analysis of CDC's NHANES.



Civilians exceeding enlistment standards



1. Cawley J. and Maclean J. Unfit for Service: The Implications of Rising Obesity for U.S. Military Recruitment. National Bureau of Economic Research, Cambridge, MA, 2010.



Ineligibility of Military Applicants



- Approximately 9% of active component enlisted applicants were disqualified due to obesity (based on ICD-9 code).¹
- Approximately 16% of active component enlisted applicants were disqualified due to weight, body build (based on “other medical failure” codes from USMEPCOM).¹
- Existing recruitment and accessions standards are not posing challenges to recruitment goals per each Service’s Recruit Commands.²

1. Accession Medical Standards Analysis and Research Activity, 2015 Annual Report. Silver Spring, MD: Walter Reed Army Institute of Research; 2015.

2. Implications of Trends in Obesity and Overweight for the Department of Defense, Defense Health Board, Nov 22, 2013.



Weight status of Army Enlistees



- Objectives: identify changes in weight status at Army entry from 1989 to 2012, and the demographic characteristics associated with overweight/obesity.
- Prevalence of exceeding the screening table weights increased with time (5.7% in 1989, 22% in 1992, high of 31% in 2006 and 2007, ~25% in 2012).
- Demographic predictors (2008-2012):
 - women less likely to exceed the guidelines compared to men.
 - women 20-29 or 30-39 years more likely to exceed guidelines vs. <20 years.

1. Hruba A, Hill T, Bulathsinhala L, McKinnon C, Montain S, Young A, and Smith T. Trends in Overweight and Obesity in Soldiers Entering the U.S. Army, 1989-2012. *Obesity*, 23(3), 2015.



Weight Status and Injury Risk



- **Objective:** examine the association between BMI at accession and lower extremity musculoskeletal injury disorder (MID) during a Soldier's career.
- ~740K followed from accession into Army during 2001-2011.
- ~400K cases of MID documented; overall MID rate 2.62 per 100 person-months.

1. Hruby A, Bulathsinhala L, McKinnon C, Hill O, Montain S, Young A, and Smith T. BMI and Lower Extremity Injury in U.S. Army, 2001-2011. Am J Prev Med, 50(6), 2016.



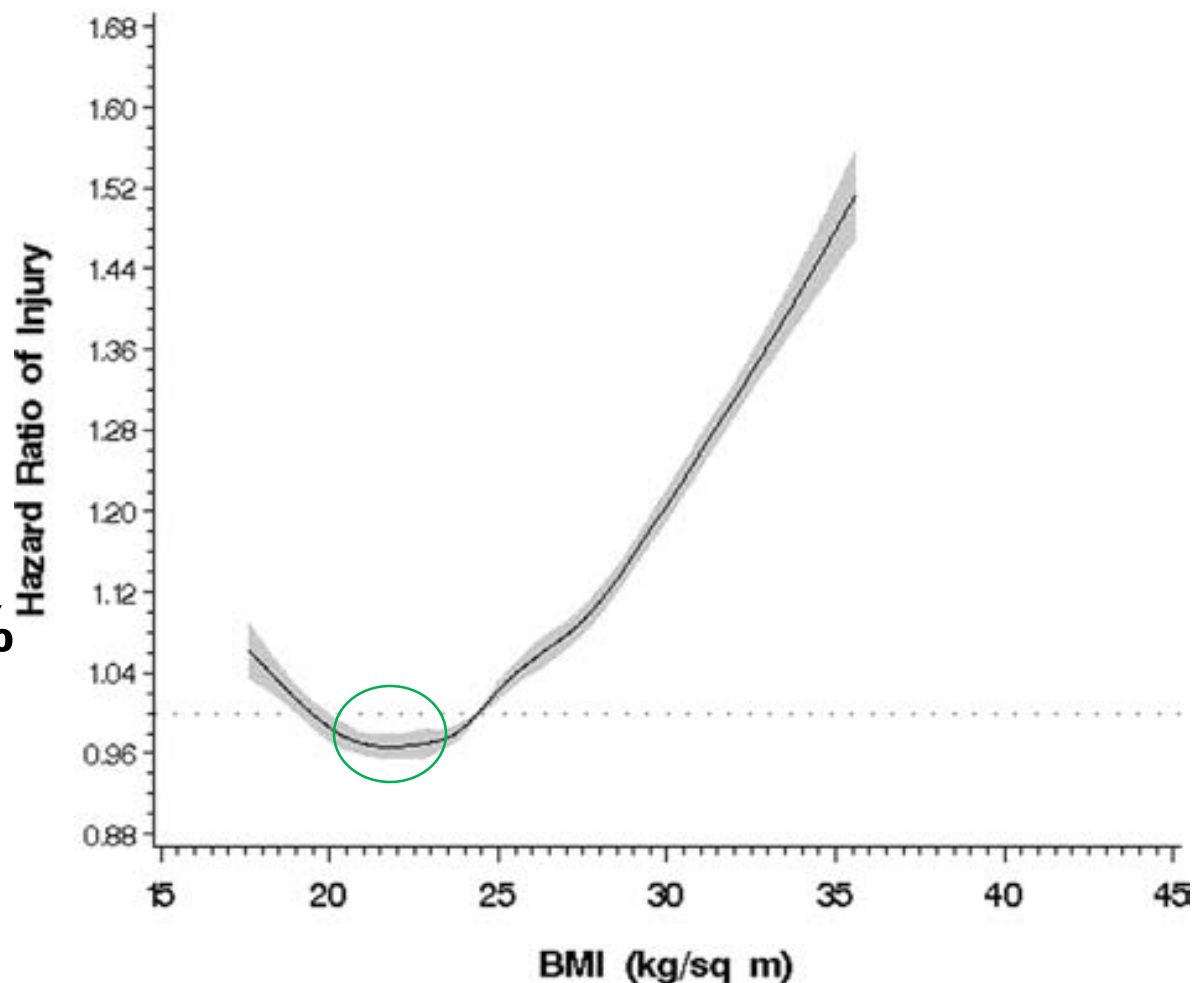
Weight status of Army Enlistees



Relative to Soldiers with normal BMI (18.5 to $<25 \text{ kg/m}^2$) at accession:

- BMI $<18.5 = 7\%$ higher risk
- BMI 25 to $<30 = 11\%$ higher risk
- BMI $>30 = 33\%$ higher risk

BMI and Incident Injury



1. Hruba A, Bulathsinhala L, McKinnon C, Hill O, Montain S, Young A, and Smith T. BMI and Lower Extremity Injury in U.S. Army, 2001-2011. *Am J Prev Med*, 50(6), 2016.



Weight Status and Cardiometabolic Risk



- **Objective:** examine the association between BMI at accession and incident cardiometabolic risk factors (CRF).
- **Incidence of CRFs:**
 - Metabolic syndrome: 228 Soldiers
 - Glucose/insulin disorder: 3,880 Soldiers
 - Hypertension: 26,373 Soldiers
 - Dyslipidemia: 13,404 Soldiers
- **Overweight and obese had significantly higher risk of developing each CRF.**

1. Hruby A, Bulathsinhala L, McKinnon C, Hill O, Montain S, Young A, and Smith T. BMI and Lower Extremity Injury in U.S. Army, 2001-2011. *Am J Prev Med*, 50(6), 2016.



Implications for Recruitment



1. Existing recruitment and accessions standards are appropriate and are not posing challenges to recruitment goals.
2. Recruitment centers should collect info re: individuals who are turned away due to weight status.
3. DoD should assess feasibility of training recruiters to calculate BMI and collect circumference measurements (IAW DoDI 1308.3).
4. Current accession standards should be maintained as minimal requirement for agile and responsive fighting force.

Questions?

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