

## Weight change following U.S. military service

**PUBLICATION:** *International Journal of Obesity* (2013); 37, 244-523.

**PUBLICATION TYPE:** Peer-Reviewed Journal Article

**KEYWORDS:** Military veterans, weight- gain, prospective, cohort, posttraumatic stress disorder, military deployment

### RESEARCH HIGHLIGHTS:

- Although obesity has been found to be less prevalent in men and women serving in the military compared to their civilian counterparts, older veterans tend to have a similar or greater prevalence of overweight/obesity compared to similar-aged men and women who never served in the military. In this study, researchers investigate weight change among current and recently discharged service members to determine risk factors for excess weight gain during the critical transition period from the military to civilian life.
- On average, discharged veterans gained 2.2 kg (4-5 pounds) more before and around the time of discharge from military service compared to those who remained in service. In addition, while only 12% of individuals on active duty were obese during their service, that percentage rose to 31% soon after their service ended.
- Although the authors did not investigate the possible reasons, they hypothesized that excess weight gain may have been due to lower levels of physical activity, resulting from no longer needing to meet military body composition standards.

**AUTHORS:** Alyson J. Littman, Ph.D.; Isabel G. Jacobson, M.P.H.; Edward J. Boyko, M.D., Ph.D.; Teresa M. Powell, M.S.; Tyler C. Smith, Ph.D.

### ABSTRACT:

**“BACKGROUND:** Although overweight and obesity are less prevalent among active-duty military personnel compared with similar persons not serving in the military, no such differences have been observed between veterans and non-veterans.

**OBJECTIVES:** To assess the magnitude of weight changes before, concurrent with and following discharge from the military, relative to weight during service, and to determine the demographic, service-related and psychological characteristics associated with clinically important weight gain among those who were discharged from military service during follow-up.

**METHODS:** Eligible Millennium Cohort Study participants (n = 38,686) completed the questionnaires approximately every 3 years (2001, 2004 and 2007) that were used to estimate annual weight changes, as well as the percentage experiencing clinically important weight gain, defined as  $\geq 10\%$ . Analyses were stratified by sex.

**RESULTS:** Weight gain was greatest around the time of discharge from service and in the 3 years before discharge (1.0-1.3 kg [2.2-2.9 lbs.] per year), while it was nearly half as much during service (0.6-0.7 kg [1.3-1.5 lbs.] per year) and  $\geq 3$  years after service ended (0.7 kg per year). Consequently, 6-year weight gain was over 2 kg [4 lbs.] greater in those who were discharged compared with those who remained in the military during follow-up (5.7 vs. 3.5 kg [12.6 vs. 7.7 lbs.] in men; 6.3 vs. 4.0 kg [13.9 vs. 8.8 lbs.] in women). In those who were discharged, younger age, less education, being overweight at baseline, being in the active-duty component (vs. Reserve/National Guard) and having experienced deployment with combat exposures (vs. non-deployment) were associated with increased risks of clinically important weight gain.

**CONCLUSION:** This study provides the first prospectively collected evidence for an increased rate of weight gain around the time of military discharge that may explain previously reported higher rates of obesity in veterans, and identifies characteristics of higher-risk groups. Discharge from military service presents a window of risk and opportunity to prevent unhealthy weight gain in military personnel and veterans.”

## Implications

### FOR PRACTICE

Transitioning from military service to civilian life can result in excess weight gain among veterans who are used to a more structured routine and a more physically active job. Though all branches of the military offer weight management programs, additional programs and resources focused on weight management may significantly benefit veterans after their discharge from military service. Physicians should be mindful of the challenges to weight management that many veterans face and discuss the importance of preventing unhealthy weight gain and strategies that may be helpful with their patients before or soon after they are discharged. Individuals with healthy weights are less likely to develop chronic illnesses such as diabetes and heart disease.

### FOR POLICY

The U.S. Department of Veterans Affairs (VA) has developed a weight management program (MOVE!) that is offered in all VA facilities. However, more work may be needed to ensure that this and other programs are tailored to younger veterans. Preventing unhealthy weight gain and promoting healthy food choices and physical activity in veterans could potentially lead to a reduction of chronic illnesses in veterans and improvements in quality of life.

### FOR FUTURE RESEARCH

In this study, discharged women were more likely to gain a clinically important amount of weight (defined as more than 10%) than discharged men. However, the reasons behind weight gain were not assessed in this study. Therefore, future studies should examine the reasons behind weight gain in discharged service members to help inform whether different approaches to weight gain prevention may be needed for men and women. Results from this study also show that individuals who served in the Reserve/National Guard had less weight gain on average. Researchers should investigate the strategies used by members of the Reserve/National Guard to limit weight gain after discharge and how these may be applied to former active duty veterans. Limitations in this study were that the weight was self-reported (instead of directly measured) and people may have underreported their weight. Also, there were three-year gaps between surveys which made it difficult to confirm when and at what pace the veterans gained weight. Since many of the veterans in the study were enrolled in the military for extended periods of time and were older, this study might not be generalizable to younger veterans who served in the military for short periods of time. Therefore, it might be beneficial to conduct more studies on younger veterans who were enrolled in the military for short periods of time.

### AUTHOR INFORMATION

**Alyson J. Littman, Ph.D.**  
Seattle Epidemiologic Research  
and Information Center, Veterans  
Affairs Puget Sound Health Care  
System, and Dept. of Epidemiology,  
University of Washington  
Alyson@u.washington.edu

**Isabel G. Jacobson, M.P.H.**  
Department of Deployment Health  
Research, Naval Health Research  
Center

**Edward J. Boyko, M.D., Ph.D.**  
Department of Deployment Health  
Research, Naval Health Research  
Center

**Teresa M. Powell, M.S.**  
Department of Deployment Health  
Research, Naval Health Research  
Center

**Tyler C. Smith, Ph.D.**  
Department of Deployment Health  
Research, Naval Health Research  
Center