

INFORMATION PAPER

SUBJECT: Obesity Trends, Impact on Military, and Related Threats to National Security

1. **Purpose:** Identify potential impact of U.S. population obesity and overweight trends on U.S. military and national security.

2. **Background:** The Army Physical Fitness Research Institute (APFRI) at the U.S. Army War College (USAWC), Carlisle Barracks, PA., has been tracking senior leader health and fitness trends of students attending the Army War College since 1985. In accordance with Army Regulation 350-1, *Army Training and Leader Development*, the USAWC through APFRI provides “leadership in research, training, and education pertaining to mental and physical readiness PME and incorporate[s] the expertise from professional certification from pre-eminent civilian health and fitness organizations like the American College of Sports Medicine, the National Strength and Conditioning Association, the American Council on Exercise, and the Cooper Aerobics Research Institute”(p. 35). In 2005 the APFRI program expanded to the senior enlisted Soldiers attending the U.S. Army Sergeants Major Academy (USASMA) in Fort Bliss, TX and in 2007 to the mid-career officers attending the Command and General Staff College (CGSC) at Fort Leavenworth, KS. At all three locations, APFRI’s mission is to ensure our mid-career and senior leaders understand and foster the development of warrior leaders of character who are physically and mentally ready to support the National Security tasks assigned to the U.S. military. Both programs also engage their respective participants in activities that promote and enhance a healthy lifestyle, physical fitness, movement behavior, and psychomotor performance. Various trends indicate that both our military and civilian populations are experiencing increased risks to maintaining their health and fitness which may in turn create a vulnerability to our National Security. Of particular concern are obesity trends within our U.S. population and the potential impact on the number of American youth physically fit enough to meet basic entrance criteria to serve in our military and later to meet standards for continued service.

3. **Facts:**
 - a. Since 2003, the APFRI program has been raising awareness among military and civilian students attending the Army War College, USASMA, and CGSC about the potential vulnerability to National Security posed by obesity trends in the U.S. population. For example, students are asked to consider if the “Health and Fitness of our U.S. Population” may meet the criteria, since Joint Publication 1-02 defines a “vulnerability” as “the susceptibility of a nation or military force to any action by any means through which its war potential or combat effectiveness may be reduced or its will to fight diminished.”

 - b. In briefings to War College students, APFRI notes that childhood obesity rates are accelerating faster than adult obesity rates. Over the past 30 years, while adult obesity rates have doubled, childhood obesity rates have tripled.

 - c. The US population’s fitness, health and diet have long been recognized as National Security Issues. For instance, in 1946 the military’s concerns about children’s nutrition, height, and weight were partly behind Congress passing “The National School Lunch Act” in 1946.

d. The Department of Defense (DOD) has noted that one in five military-age Americans are too overweight to qualify for entry into the military service which it sees as negatively impacting on our ability to build and maintain a strong military for the future. Since 2005, the U.S. military has turned away over 48,000 potential recruits for being overweight.

e. The Centers for Disease Control (CDC) reports that from 1998 to 2008, 39 of the 50 U.S. states reported that over 40 percent of the young adult population was overweight or obese, up from just one state prior to 1998. The CDC statistics estimates that in 2009, 72.5 million, or roughly 27% of Americans were now obese. Perhaps more alarming is that the CDC reports that while 23% of all 17 to 24 year olds are obese, they make up 20% of the 72.5 million of all Americans who are obese. The 17-24 year old demographic is the prime target audience for DoD recruiting.

f. In a 2009 report entitled “Military Services Fitness Database: Development of a Computerized Physical Fitness and Weight Management Database for the U.S. Army,” it was revealed that more than thirty percent of men and over fifty percent of women in uniform do not meet height and weight standards. Between 1992 and 2007, there were approximately 24,000 soldiers discharged for failure to meet the weight standards compared to the 2,342 Soldiers who could not pass the Army Physical Fitness Test.

g. While 634 military personnel were discharged for transgressing “don’t ask, don’t tell,” a 2008 DoD study concluded that 4,555 service members were discharged for failing to meet the military height and weight standards which poses a significant financial cost to the military in terms of training during an era of constrained resources and costing the government an estimated \$183 million per year to replace these discharged service members.

h. Every year the military discharges over 1,200 first-term enlistees before their contracts are up because of weight problems. Because of these discharges, the military must then recruit and train their replacements at a cost of \$50,000 for each man or woman, thus spending more than \$60 million a year to train the replacements required due to weight-related discharges. A 2007 study entitled, “Assessment of Recruit Motivation and Strength” (ARMS): “Pre-accession Physical Fitness Assessment Predicts Early Attrition” found an individual’s fitness level prior to accession into the military was a good indicator of who would endure and not “attrit” from the military.

i. Since 1995, over 70 percent of potential recruits fail the physical examination during their initial medical screening at the Military Entrance Processing Stations (MEPS) because of weight issues, and that number is steadily increasing, according the Division of Preventive Medicine at the Walter Reed Army Institute of Research.

j. It is estimated that between 3,000 to 5,000 enlisted members are forced to leave the military each year for being overweight.

k. DoD spends an estimated \$1.1 billion per year for medical care associated with excess weight and obesity, based on TRICARE reports on beneficiaries under age 65 (Dall, TM et al., Am J Health Promot. 2007 Nov-Dec;22(2):120-39).

l. From 1998 to 2008, the number and prevalence of active component service members who received at least one outpatient diagnosis of overweight/obesity increased more than 2.5-fold (1998: n=25,652; 1.6%; 2008: n=68,786, 4.4%). In general, annual prevalence of medical encounters for clinical overweight was low and stable between 1998 and 2002 but increased rapidly between 2002 and 2008 (Jan 2009 MSMR report on use of the ICD-9 code for overweight/obesity for 1998-2008).

m. A 2005 *DOD Survey of Health Related Behaviors* found that 61% of men and 39% of women serving in the active component of the U.S. military had a body mass index above 25 and thus were nominally “overweight.” In addition, twelve percent of active service members were nominally obese (BMI >30), up from less than 5% in 1995.

n. Carrying extra weight may also contribute to increases in other medical problems. For example, of service members diagnosed with being overweight or obese, 16% also had a joint and 23% a back disorder within the prior year. Joint and back disorders are among the leading causes of morbidity, lost duty time, and health care costs among military members in general; and rates of these conditions among “overweight/obese” military members are three times higher than among service members overall.

o. Sixteen percent of active duty personnel are obese with both the Navy and the Air Force reporting concern about this issue. The Navy reports 62% of its currently serving members are overweight (17% are obese) while the Air Force reports 55% of their airmen are overweight while 12% are obese.

p. National Health Care Cost and Impact of Obesity:

(1) Contributes to four of the leading causes of premature death in the United States (heart disease, cancer, hypertension, stroke).

(2) Obesity is the leading cause of cancer in the U.S.

(3) Being overweight or obese contributes to the development and/or exacerbation of chronic health conditions (resulting in an estimated 400,000 deaths annually, second only to smoking as an underlying cause of mortality.)

(4) By 2030, health care costs attributable to obesity and overweight are estimated to range from \$860 billion to \$956 billion, which would account for 15.8 to 17.6 percent of total health care costs, or one in every six dollars spent on health care (WANG et al).

q. Former Surgeon General of the U.S. Public Health Service, Dr. Richard Carmona recently called the threat of obesity in America “a threat of weapons of mass destruction” noting that conditions related to obesity and being overweight devours 10% of the nation’s healthcare cost.

r. An estimated \$147 billion is spent by taxpayers, governments, and businesses on obesity-related conditions and medical costs each year and the projections are this cost will double every decade until significant lifestyle changes are made in society.

s. The statistics today are worse than over 10 years ago President Clinton stated that: “Obesity is the number one health crisis in the United States, and the nation could be at risk without immediate action.”

Conclusion: The overweight and obesity trends are of great concern and could contribute to vulnerability in our National Security. The impact of these national trends is of relevance to our military since an individual's health and fitness reflects their stamina, their self-discipline, and their commitment to the values of a military profession. APFRI's executive health and Leadership Feedback Program helps our mid-career and senior leaders comprehend and focus on the complex interplay between leadership, health and fitness. APFRI's multidisciplinary staff includes a clinical psychologist, dietician, two exercise physiologists, nurse practitioner, physical therapist and assistant, and a research psychologist. APFRI maintains the Army's only applied research protocol to investigate the health and fitness of senior leaders (age 40 and over) using USAWC resident and DDE students. Each year, approximately 98% percent of the resident students volunteer for APFRI's health assessments. APFRI then provides USAWC students with appropriate oversight, prescription of exercise, education, intervention, case management, and/or medical referral/follow-up as needed. APFRI also provides educational programs and interventions throughout the academic year to promote and improve health and fitness among senior leaders and their spouses.

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Understanding Health and Fitness



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APFRI's Origin: Over-40 Physical Fitness and Health



- Prior to 1980:
 - **NO** physical fitness testing for the over-40 population
 - Great resistance: AMEDD and Army Senior Leaders
- 1982:
 - APFRI was developed as a result of 1981 TRADOC General Officers Conference
 - Task: Develop a comprehensive Physical Fitness Program for the Army
- Today:
 - Vigorous aerobic and strength training safely accomplished in over-40 population.

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Health & Fitness: Vulnerability?

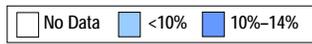
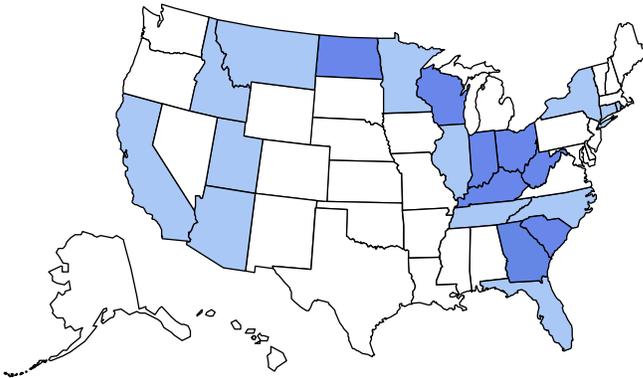


“ The susceptibility of a nation or military force to any action by any means through which its war potential or **combat effectiveness may be reduced or its will to fight diminished.” JP 1-02**



Obesity Trends* Among U.S. Adults BRFSS, 1985

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)

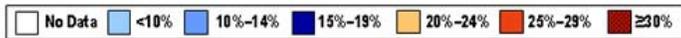
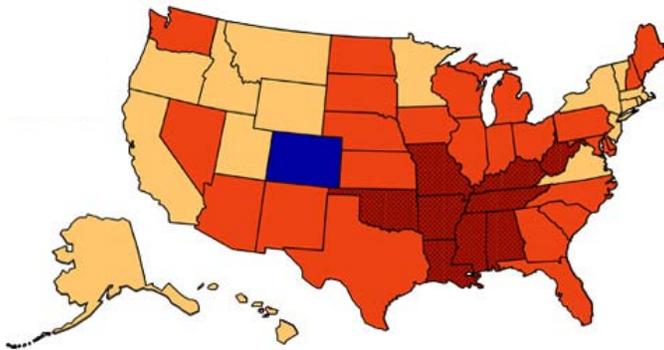


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Obesity Trends* Among U.S. Adults BRFSS, 2009

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



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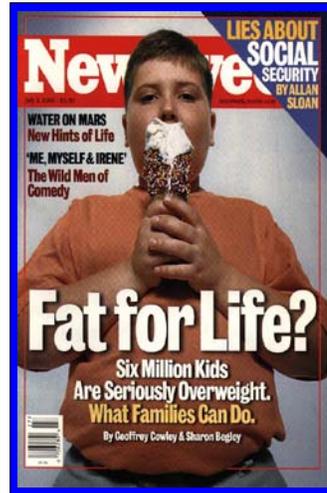


Our Military's Future Volunteers?



- 17% of U.S. children age 12-19 are overweight or obese.
- 19% of U.S. children age 6-11 are overweight or obese.
- 14% of U.S. children age 2-5 are overweight or obese.

These numbers have roughly TRIPLED since 1980!



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Too Fat to Fight

Retired Military Leaders Want
Junk Food Out of America's Schools



- 75% of young Americans aren't military material:
- No high school diploma
 - Criminal records
 - Physically or mentally unfit



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“Small” Decisions, “Large” Consequences



- **Cheeseburger Happy Meal:**

Cheeseburger, Small Fry, Chocolate Milk
710 Calories (47% DV)
28 g Fat (56% DV)
31 g Sugar
1050 mg Sodium (68% DV)

- **Regular Size Meal:**

Double Cheeseburger, Medium Fry, Medium Coke
1040 Calories (52% DV)
43 g Fat (66% DV)
65 g Sugar
1380 mg Sodium (78% DV)

- **Large Big Mac Meal:**

Big Mac, Large Fry, Large Coke
1430 Calories (72% DV)
59 g Fat (91% DV)
94 g Sugar
1390 mg Sodium (78% DV)



*Daily Value based on 1500 calorie/day child diet.

**Daily Value based on 2000 calorie/day adult diet.

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“Waistful” Habits



- Average American age 45 is 25 lbs overweight
- Average American gains 1 lb over every holiday season from age 20 years on
- One pound = 3500 calories

To lose weight, you must expend more calories that you bring in.

For example: walking daily for 30 minutes = 150

reducing daily caloric intake = 150

300 kcal per day ~ 12 days one pound loss

“Being mindful” of both = approximately 10-15 lb loss in one year. What is *Your* strategic end-state one year from now?

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Top 10 Causes of Death of Americans



- Heart Disease..... 28%
 - Cancer.....23%
 - Stroke.....6%
 - COPD.....5%
 - Accidents.....3%
 - Diabetes Mellitus.....3%
 - Influenza/pneumonia..... 3%
 - Alzheimer's..... 3%
 - Kidney disease..... 2%
 - Septicemia.....1%
- 60% of Americans die from three causes...

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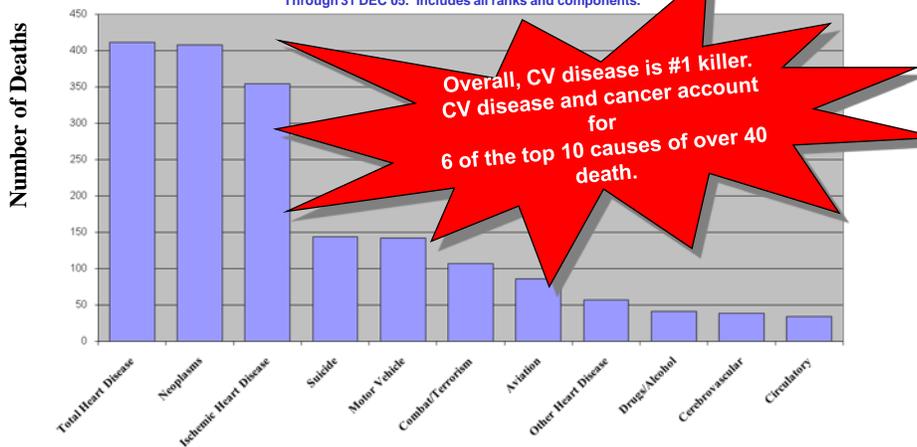


Top 10 Causes of Death in Service Members



(Age 40 and above, 1998-2005*)

*Through 31 DEC 05. Includes all ranks and components.



Source: Mortality Surveillance Division, Armed Forces Institute of Pathology

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Reducing Cancer Risk with Diet

American Cancer Institute of Research



- **Lifetime probability of cancer**
 - **46% of men**
 - **38% of women**
- **Landmark study commissioned by Congress (1981)**
- **Dietary changes could dramatically reduce cancer rates**
 - **90% for colon and stomach cancers**
 - **50% for breast, uterus, gallbladder, pancreatic cancers**
 - **20% for larynx, bladder, cervix, mouth, pharynx, and esophagus**
 - **10% for other cancers**

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