Strategy Research Project

OBESITY: A THREAT TO NATIONAL SECURITY?

BY

LIEUTENANT COLONEL VANESSA M. GATTIS
United States Army

USAWC CLASS OF 2011

U.S. Army War College, Carlisle Barracks, PA 17013-5050

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle State Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
16-03-2011	Strategy Research Project	

4. TITLE AND SUBTITLE
Obesity: A Threat to National Security?

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Lieutenant Colonel Vanessa M. Gattis

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Dr. Thomas J. Williams
Army Physical Fitness Research Institute

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army War College
122 Forbes Avenue
Carlisle, PA 17013

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Distribution A: Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT
In order to meet the strategic and operational demands placed upon the U.S. military as a joint war fighting force, service members must be physically fit. Obesity, poor physical fitness and health are seriously threatening the overall readiness and operational effectiveness of our U.S. military. Currently serving military men and women are increasingly overweight and out-of-shape while many of those who aspire entry into our Armed Forces are alarmingly, "Too Fat to Fight." The recent strategic implication of obesity within our Armed Forces is threatening the National Security of this nation. Currently, each branch of service has its own physical fitness and weight standards for both entry and longevity of service members' careers. The operational effectiveness of our military ranks is dramatically decreased as the number of overweight and obese service members within our ranks increase. The overall health and fitness for U.S. military men and women is paramount for a ready and trained fighting force. Regardless of current individual service fitness programs, each branch of the Armed Forces must show unity of effort and create a Joint Fitness Program that brings commonality to our force and helps to combat the obesity epidemic.

15. SUBJECT TERMS
Physical Fitness, Overweight, Readiness, Joint, Epidemic

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(include area code)*
UNCLASSIFED	UNCLASSIFED	UNCLASSIFED	UNLIMITED	28	

USAWC STRATEGY RESEARCH PROJECT

OBESITY: A THREAT TO NATIONAL SECURITY?

by

Lieutenant Colonel Vanessa M. Gattis
United States Army Reserve

Dr. Thomas J. Williams
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Lieutenant Colonel Vanessa M. Gattis

TITLE: Obesity: A Threat to National Security?

FORMAT: Strategy Research Project

DATE: 16 March 2011 WORD COUNT: 5,264 PAGES: 28

KEY TERMS: Physical Fitness, Overweight, Readiness, Joint, Epidemic

CLASSIFICATION: Unclassified

In order to meet the strategic and operational demands placed upon the U.S. military as a joint war fighting force, service members must be physically fit. Obesity, poor physical fitness and health are seriously threatening the overall readiness and operational effectiveness of our U.S. military. Currently serving military men and women are increasingly overweight and out-of-shape while many of those who aspire entry into our Armed Forces are alarmingly, "Too Fat to Fight." The recent strategic implication of obesity within our Armed Forces is threatening the National Security of this nation. Currently, each branch of service has its own physical fitness and weight standards for both entry and longevity of service members' careers. The operational effectiveness of our military ranks is dramatically decreased as the number of overweight and obese service members within our ranks increase. The overall health and fitness for U.S. military men and women is paramount for a ready and trained fighting force. Regardless of current individual service fitness programs, each branch of the Armed Forces must show unity of effort and create a Joint Fitness Program that brings commonality to our force and helps to combat the obesity epidemic.

OBESITY: A THREAT TO NATIONAL SECURITY?

> Child obesity has become so serious in this country that military leaders are viewing this epidemic as a potential threat to our national security. We need America's service members to be in excellent physical condition because they have such an important job to do. Rigorous service standards are critical if we are to maintain the fighting readiness of our military.[1]
>
> —Retired U.S. Army General Johnnie E. Wilson

Americans are engaged in the "battle of the bulge" in record numbers. Over the past decade, obesity has become recognized as one of the top national health threats and major public health challenges.[2] Former President Clinton said, "Obesity is the number one health crisis in the United States, and the nation could be at risk without immediate action."[3] The Center for Disease Control (CDC) statistics estimated that in 2009, 72.5 million Americans were obese.[4] That equates to an alarming 26.7% of the American population that was obese in 2009.[5] More striking is that, in 2009, 17 to 24 year olds made up more than 20% of the 72.5 million Americans who were considered obese. Obesity is one of the biggest public health challenges our country faces and troubling disparities exist based on race, ethnicity, region and income.[6] According to a report published by the Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation, these higher rates of obesity are associated with lower incomes, race, ethnicity, and less education.[7]

While obesity presents the nation with a wide array of health, economic, and productivity problems, a lesser-known, but perhaps an even more significant consequence of this epidemic is its potential effect on national security.[8] In March of 2009, the Department of Defense (DOD) reported that one in five military-age

Americans were considered too fat to qualify for the armed services.[9] High numbers of overweight and obese young adults are clearly hurting the United States' ability to build and maintain a strong military for the future.[10] Since 2005, the military has turned away over 48,000 overweight recruits.[11] This number far surpassed the total amount of serving troops the U.S. had in Afghanistan at the time of the report. Military recruiters have dismissed those who aspired entry into the armed forces as a result of being overweight based on the individual services height and weight requirements.

In 2008, both the Army Accessions Command and the CDC conducted a survey for young adults between the ages of 18 to 24 years old. The Army Accessions Command, which is responsible for recruiting and the initial training of new Army recruits, estimated that over 27% of all Americans 17 to 24 years of age, that is over 9 million young men and women, are too heavy to join the Army if they wanted to do so.[12] Childhood obesity rates have accelerated faster than adult obesity rates.

Over the past 30 years, while adult obesity rates have doubled, childhood obesity rates have tripled.[13] The CDC reported that from 1998 to 2008, 39 states reported that over 40 percent of young adults are overweight or obese, up from just one state prior to 1998.[14] Overweight refers to increased body weight in relation to height, which is then compared to a standard of acceptable weight.[15] Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.[16] Body Mass Index (BMI) (Table 1) is a common measure expressing the relationship (or ratio) of weight-to-height.[17] Computed as a mathematical formula, an adult with a BMI between the ranges of 25 to 29.9 is considered overweight, while those with a BMI range of 30 or more are considered obese.[18]

BMI =	$\frac{\text{(Weight in pounds)}}{\text{(Height in inches) x (Height in inches)}}$	x 703

Table 1: BMI Computation

The presumption is that the individuals are not physically fit enough to enlist, train, and serve.[19] Today, young men and women in America are so overweight, obese, and out of shape that America's military leaders are calling on Congress to assist.

From the Pentagon to the White House to senior retired military leaders, all have recognized that the overweight and obesity issue must be dealt with at the top and steps must be taken to immediately combat the problem. The Pentagon has acknowledged that obesity has presented a significant challenge for the military and the concern has made its way to the military's top officials. The Pentagon's Accessions Chief, Mr. Curtis Gilroy, has acknowledged that the obesity problem has presented the military with significant setbacks, especially since they are in constant need of additional soldiers.[20] Mr. Gilroy stated, "It's clearly a problem for the United States military. We are faced with a dwindling pool of available youth amongst the American population age 17-to-24 year olds and we are very concerned."[21]

First Lady Michelle Obama has recognized that obesity, in particular, childhood obesity is an ongoing problem in the U.S. She has started an initiative to help combat the childhood obesity epidemic by instituting the "Let's Move" campaign. The purpose of this campaign is to get children up and moving and to encourage the children to eat healthy and to get at least 30 minutes of physical activity each day. She said, "Obesity in this country is nothing less than a public health crisis. It is threatening our children,

it's threatening our families and, more importantly, it's threatening the future of this nation."[22]

In a report entitled "Too Fat to Fight," senior retired military leaders have concluded that one of the leading medical reasons for recruits rejected for military service is because of weight problems. *Mission: Readiness*, which is an organization that is made up of over 100 retired generals, admirals and senior enlisted leaders and the authors of the report, warned Congress that obesity rates among children and young adults have increased so dramatically that it is threatening the overall health of America as well as the future strength of the military.[23] The retired generals and admirals are calling on the U.S. Congressional leaders to look at the school system's lunch programs and to assist in the immediate removal of unhealthy food and beverage items from the cafeteria which are believed to be the chief contributing factors to the high childhood obesity epidemic.

This urgent call to Congress is certainly nothing new from senior military leaders. In 1946, General Lewis Hersey approached congressional leaders to help improve children's nutrition, height and weight, thus the National School Lunch Act was birthed.[24] Data reported by the Division of Preventive Medicine at the Walter Reed Army Institute of Research suggest that 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. That number is steadily increasing.[25] In "Too Fat to Fight," Retired General John M. Shalikashvili, former Chairman, Joint Chiefs of Staff addresses today's trend by saying,

> Every month hundreds of otherwise excellent candidates for military service are turned away by recruiters because of weight problems. We

> need to reverse this trend, and an excellent place to start is by improving the quality of food served in our schools.[26]

Penny Lee, Executive Director of the *Campaign to End Obesity*, said: "As we face new demands on our armed forces, nearly a third of recruits are unfit to serve due to overweight or obesity."[27]

During the World War II era, military leaders recognized that poor nutrition and health was affecting future military recruits and they did something about it.[28] Today, senior military leaders have again recognized that same problem and are alerting Congress that obesity is a threat to national security and something must be done. Experts agree that battling obesity and poor health takes personal commitment and dedication by not only committing to eat right, but by performing regular exercise that targets the overall well-being of the individual. Our leaders should include: local, state, military and congress; and all must get involved. Retired Brigadier General Clara Adams-Ender pointed out the obesity and lack of physical fitness concerns that affect young people today were very similar to concerns about poor nutrition following World War II.[29] According to Adams-Ender, "Retired admirals and generals stood up in the past to make it clear that America is only as healthy as our nation's children [and]…childhood obesity is now undermining our national security, and we need to start turning it around today."[30] She and other senior officials are calling on Congress to take action immediately.[31]

<u>Armed Forces, a Reflection of Society's Obesity Epidemic?</u>

It is clear that no one would have imagined that the obesity epidemic would be threatening the national security of the United States. Besides candidates being rejected for entry into the Armed Forces, currently serving military men and women in all

branches are increasingly overweight and out-of-shape. According to a U.S. military spokeswoman, 16 percent of active duty personnel are obese.[32] Two of the four branches of the military raise great concern regarding this issue. The Navy reported that 62 percent of its currently serving members are overweight, and 17 percent are obese, while the U.S. Air Force reported that 55 percent of its currently serving airmen are overweight, and nearly 12 percent are obese.[33] This, however, is not just a Navy or Air Force problem, obesity has overwhelmed each branch of service and must be tackled as a unified front.

The overall health and fitness for U.S. military men and women is paramount for a ready and trained fighting force. Currently, each branch of service has its own physical fitness and weight standards for entry into the Armed Forces, as well as standards for longevity of service members' careers. The physical fitness requirements for weight, exercises, and distance standards differ for all branches of the Armed Forces. Each branch feels that the individual service requirements are challenging enough such that each service member can attain the minimum standards in order to successfully pass the fitness requirements. Although military weight standards are a part of the physical fitness requirements, they are less demanding for initial entry recruits.[34] Moreover, the current body fat standards for each branch of the Armed Forces (Table 2) would be too demanding for the average American to pass.

Male Age Group	Army	Navy	Air Force	Marines
17-20	20%	22%	no longer use	18%
21-27	22%	22%	no longer use	18%
28-32	24%	22%	no longer use	19%
40+	26%	23%	no longer use	20%

Female Age Group	Army	Navy	Air Force	Marines
17-20	30%	33%	no longer use	26%
21-27	32%	33%	no longer use	26%
28-32	34%	33%	no longer use	27%
40+	36%	34%	no longer use	28%

Table 2: Current Armed Forces Body Fat Standards[35]

Each branch of the Armed Forces, except for the Air Force, uses BMI as a screening measure for body composition.[36] A Service member who's BMI exceed standards for their branch of Service are subsequently measured to calculate their percentage of body fat.[37] According to a 2005 *DOD Survey of Health Related Behaviors*, 61% of men and 39% of women serving in the active component of the U.S. military had a BMI above 25 and thus were nominally "overweight."[38] In addition, twelve percent of active service members were nominally obese (BMI >30), up from less than 5% in 1995.[39] Despite physical fitness and body fat standards, many active service members receive clinical diagnoses of overweight during routine medical examinations and other outpatient encounters.[40] Unfortunately, some military personnel can be classified as overweight by BMI standards due to increased muscle mass rather than to excess body fat. In many of these cases, service members body fat percentage measurements may still fall within the acceptable range for their Service.[41] Service men and women who exceed current military service height and weight standards are offered counseling, nutritional programs, and other weight control assistance.[42]

Obesity, overweight and physical inactivity are significant military medical concerns because they are associated with decreased military operational effectiveness.[43] According to a recent Department of Defense (DOD) study, stress and return from deployment are the most frequently cited reasons for gaining weight.[44]

These findings raise many concerns with senior leaders in the Pentagon because of their affect on the overall unit readiness as demands on the military continue to increase.[45] In a 2004 study conducted by Trust for America's Health, they concluded that excessive weight and physical inactivity negatively impacts the quality and quantity of work performed and the overall job performance among obese, sedentary individuals.[46] Research also shows that obese workers had 183.63 lost workdays per 100 full-time employees, compared with normal-weight workers, who had 14.19 lost workdays per 100 full-time employees.[47] In addition, overweight and obese people have a tendency to earn less and are less likely to be hired and promoted in comparison to people who are of average or below normal weight standards.[48]

Each service member is required to maintain an adequate degree of fitness to maintain longevity of career. The U.S. military faces a significant loss of highly trained personnel which could affect its combat readiness unless it wins the war on fat.[49] "In the past decade among active military members in general, the percent of military members who experienced medical encounters for overweight/obesity has steadily increased; and since 2003, rates of increase have generally accelerated," according to a January 2009 report published by the Defense Department's Medical Surveillance and Month Report (MSMR).[50]

Each year between 3,000 to 5,000 enlisted members are forced to leave the military for being overweight.[51] A study conducted by the Defense Department in 1995 concluded that the military averages an estimated $40,283 to recruit, train, and replace an enlisted member who has been discharged.[52] In a more recent study conducted by the DOD in 2008, it concluded that 4,555 service members were discharged for failing

to meet the military height and weight standards compared to the 634 military personnel who were discharged for transgressing “don’t ask, don’t tell.”[53] Soldiers discharged from the military for failure to meet the height and weight standards as outlined by their particular service pose a significant financial cost to the military in terms of training.[54] The 4,555 service members who were discharged for failing weight standards alone cost the Department of Defense in excess of over $183 million a year in recruiting and training costs to replace these discharged service members.

Service men and women are increasingly resorting to drastic measures to meet the height and weight standards for their military services. In an article published by the *Army Times* entitled, “Weight loss at any cost: Some soldiers use extreme methods to meet Army’s weight, tape standards,” it was reported that soldiers are turning to alternative methods of weight loss in order to salvage their military careers. The article states that soldiers are literally starving themselves, using laxatives and diet pills, while some are choosing to go under the knife in costly liposuction surgery to meet the Army’s weight standards to avoid losing their careers.[55] Health experts are saying that these extreme measures are widespread because so many service members are not meeting the weight standards for their service.

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.[56] 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.[57]

This reveals that Soldiers were discharged 10 times more for failure to meet weight standards than for failing the physical fitness test.[58] In addition, a recent study conducted by two officers who attended the Naval Post Graduate School, found that nearly one in three Marines have gone to such measures as liposuction and other dangerous methods to lose weight.[59] While current data is unavailable, during fiscal year 2002, the military health care system spent more than $15 million for bariatric surgeries in civilian and military facilities.[60] According to the *Army Times* and current trends, we can assume this number is higher today. Could this be the new phenomenon for weight loss in our Armed Forces?

Also from the above *Army Times* article, Dr. Thomas J. Williams, Director for the Army Physical Fitness Research Institute at the Army War College in Carlisle Barracks, PA stated that "while they want soldiers to look right, they also need to feel right and perform right, and you can't get that from a pill or a procedure."[61] Military leaders and health professionals are working to get, and keep, soldiers healthy and fit.[62]

Senior leaders often emphasize the old adage: eat less junk and exercise more. A great example of senior military leaders getting involved is Lieutenant General Mark Hertling, Deputy Commanding General for Initial Military Training who has developed a three step element for improvement to the overall physical fitness of Soldiers. The first element is improvement to physical readiness training in order to strengthen the overall health and well-being of soldiers. The second element is the Soldier Athlete initiative. This initiative's goal is to train the soldier to eat and drink healthier items that not only prepare him or her for strenuous physical activity, but it will also fuel them throughout the endeavor and aid in their recovery afterward. The third and final element is to make

recommendations for the new physical training test that is current being developed. It is increasingly evident that unless the senior leaders of each branch of the Armed Forces take the necessary steps to address the obesity epidemic, the national security of the U.S. will continue to be threatened.

Health Care Impact of Obesity and Poor Health in our Military

Obesity contributes to four of the leading causes of premature death in the United States, including our nation's biggest killer: heart disease. Furthermore, obesity is now the leading cause for cancer in America.[63] Overweight and obesity contributes to the development and/or exacerbation of chronic health conditions, and lead to an estimated 400,000 deaths annually, second only to smoking as an underlying cause of mortality.[64] The obesity epidemic is a threat to many populations in America and the military is not immune.[65] Exercise and physical activity are considered integral parts of the overall health and fitness of our Armed Forces as well as key components in preventing additional medical problems, improved quality of life, as well as the rise in health care costs. Overweight and obese service members risk a multitude of health concerns and diseases if proper diet and exercise are not controlled. Some of the health conditions they face include, but are not limited to:

- Sleep apnea
- Coronary heart disease
- Hypertension
- Type 2 diabetes
- Osteoarthritis (a degeneration of cartilage and its underlying bone within a joint)

- Stroke[66]

Dr. Richard H. Carmona, former U.S. Surgeon of the United States Public Health Service, has called the threat of obesity in America "a threat of weapons of mass destruction."[67] Obesity and overweight devours 10% of the nation's healthcare cost.[68] Taxpayers, governments, and businesses spend billions on obesity-related conditions each year, including an estimated $147 billion in medical costs.[69] Experts are projecting that health care cost will double every decade because of obesity and overweight individuals. According to a study, experts are estimating that by 2030, health care costs attributable to obesity and overweight could 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.[70] A 2007 study conducted by the Department of Defense estimated that TRICARE, the U.S. military health care system, spends over $1.1 billion annually to treat overweight and obesity related diseases.[71]

Joint Fitness Program to Battle Obesity

Physical fitness has always been the backbone of each branch of service since its inception. Physical fitness programs across the Armed Forces are designed to measure the optimal performance level of each service member. The United States Armed Forces are always trying to find ways to improve on the physical performance of their service members. Former Department of Defense Secretary William S. Cohen in 1998 directed that the services must toughen entry level training.[72] He said, "We have to produce fit, disciplined, motivated Soldiers, Sailors, Airmen and Marines." He also stated, "We must pay special attention to physical fitness, but this is only a first step."[73] Each branch of service is constantly working on ways to improve the physical fitness programs of their individual services as well as ensure that each service member is at

their peak performance level. Physical fitness for servicemen and women is a way of life and it should build teamwork, “espirit de corp,” and improve the overall health and performance of service members.

For active duty servicemen and women, fitness is a condition of employment.[74] Military leaders and health professionals are working to get, and keep, service members healthy.[75] To combat the growing obesity problem among U.S. servicemen and women, each of the armed services has developed programs to promote fitness and health: the Army has “Weigh to Stay”; the Navy and Marine Corps have “ShipShape”; and the Air Force has “Fit to Fight.” These programs utilize nutrition and fitness counseling to move military personnel and their families toward healthier food choices, exercise habits, and lifestyles.[76]

Key questions remain: 1) Are the current physical fitness and weight control standards for each branch of service designed to combat the current obesity epidemic?; 2) Does the physical fitness and weight control standards for each branch of service focus on the total fitness of each service member? 3) Does each branch of services’ physical fitness and weight control program provide optimal performance measures for the individual service member? And, 4) What are the benefits of a joint fitness program in which each branch of service could build on in order to provide an optimal level of fitness for each individual service member?

Each branch of the Armed Forces has its own physical fitness and weight control program for both entry into the military and longevity of service members’ careers. Physical fitness is important for service members because a less fit force is more vulnerable. Ingrained in military culture, service members are assessed in the Army,

Navy, Air Force, and Marine Corps biannually with a running event (cardio-respiratory) and two to three timed events to test their upper body and abdominal strength. Each service member must meet their particular service's minimum physical fitness standards in order to be eligible for promotion, awards, attend military schooling, and obtain assignment transfers, regardless of their military occupational specialty. In addition, height and weight standards are measured during the same time and each service member must meet the maximum allowable weight goal. Any service member who exceeds the maximum weight standard as specified by the individual height of the person is allowed to meet the body fat standards, per the service guidelines.

In order to better understand the armed forces fitness programs and weight standards and the need to reevaluate these programs to recommend a common program for all services, we must look at each program individually. Each one of the armed services has a different mission, which results in the physical fitness profile and the requirements vary. Differences, however, do exist among all the services physical fitness and weight standards and to some degree, do so significantly.

The Army Physical Fitness Test (APFT), as highlighted in Army Field Manual (FM) 21-20,[77] the Marine Corps Physical Fitness Test (PFT), as outlined in Marine Corps Order (MCO) 6100.13,[78] and the Air Force Fitness Program according to Air Force Instruction 36-2905,[79] all require a three-event physical performance test used to assess strength, muscular endurance and cardio-respiratory (CR) fitness. All soldiers, marines and airmen, regardless of whether active duty, reserve or National Guard, must take their individual service fitness test semi-annually. The Army APFT consists of push-ups, sit-ups and a 2-mile run; the Marine Corps PFT includes: pull-ups (flex-arm

hand for females), abdominal crunches, and a 3-mile run; and the Air Force test includes push-ups, crunches and a 1.5-mile run. Additionally, Air Force airmen must have their body composition measured. All events for the three services are timed events and are based on the individual gender and age of the service member. A point system is used for each of the three services. The soldier, marine, and airmen must accumulate the minimum points for each event to pass the test.

The Army has not changed its physical fitness test since 1980, however, in March 2010, *TC 3-22.20 Army Physical Readiness Training (PRT)* doctrine was published and it incorporates guidance on injury prevention approach.[80] A change to the Army's APFT is expected in spring 2011. Both the new doctrine and APFT includes detailed information on the proper methods for mobility, strength, endurance, and flexibility training. The Air Force made significant changes to their fitness test on January 1, 2010. The new guide makes the standards on their fitness test more difficult than previously and went as far as certifying physical training leaders.

The Navy's Physical Readiness Test (PRT), as highlighted in OPNAVINST 6110.1H,[81] is a four-event test that measures the sailor's flexibility, abdominal muscular strength, endurance, and aerobic capacity. The PRT test consists of the sit-reach, curl-up, push-up and the 1.5 mile run/walk and the 500 yard or 450 meter swim. The Navy's PRT is also a timed event and like the other services, has a numeric point system that awards points based on the individual scores recorded by gender and age.

As previously noted, each branch of the Armed Forces has their own physical fitness requirements; however, significant differences exist within each branch. As

noted in the previous table, the services have markedly different weight and body fat standards.

With the various physical training and weight control programs among each of the services, leaders must understand that there are limitations to these programs and it is obvious that they are not providing the optimal level of performance in order to combat the obesity and unfitness level of the service member. Fitness for our servicemen and women must promote an optimal level of physical readiness to meet the demands of our Armed Forces. At the same time, having differing physical fitness requirements between each of the services is not producing a highly fit Joint Force for our military. Having a common Joint Fitness Program that all services can adopt will ensure that the services are targeting the total fitness aspect of the individual service member. Leaders for the Armed Forces must help make greater strides to promote healthier fitness lifestyles for our military servicemen and women.

So Where Do We Go From Here?

The health and fitness of our U.S. Armed Forces have suffered over the past decade as obesity has reached epidemic proportions and now poses a significant threat to our national security. There are numerous factors that have contributed to the obesity rates and the unfitness of our servicemen and women. More significantly is the stress and the wear and tear of our military servicemen and women as they have fought in the two ongoing conflicts in Iraq and Afghanistan. A combination of poor nutrition and physical inactivity has contributed to a great percentage of our service members being either obese or overweight. More alarmingly is a great percentage of young people are too overweight to enter into military service.

To improve the health and fitness of our servicemen and women and to control the overwhelming amount of TRICARE health care costs, our military service leaders must establish a common Joint Fitness Program, as a priority. The health and welfare of our service members are at stake. The need to address obesity and poor physical fitness as a joint force is increasingly evident. Leaders from all branches of the Armed Forces are seeing similar obesity and fitness trends. Senior leaders' from each branch of the Armed Forces must have unity of effort to create a common military fitness strategy to combat the epidemic together. This is the opportunity for tactical and operational commanders as well as senior leaders to develop a program that promotes weight loss, better physical conditioning and overall healthy maintenance of the total body.

Recommendations

This strategic research paper provides initial recommendations for the development of a joint physical fitness and weight program that brings Joint Force unity of effort to all branches of the U.S. Armed Forces:

(1) All Armed Forces should have one standardized physical fitness test that is given to each service member at a minimum four times a year. Currently, physical fitness tests for each branch of service are two times a year. In order for commanders to gain an overall physical fitness assessment, service members must be tested quarterly. Quarterly testing should motivate both service member and commanders to take physical fitness more seriously.

(2) Testing areas must be consistent: strength endurance (e.g., sit-ups/crunches), muscular endurance (e.g., push-ups/pull-ups), and cardio-respiratory fitness (run/walk). This would require the Navy to incorporate cardio-respiratory fitness.

(3) Develop and require all services to implement one Joint Fitness height and weight standard for men and women based on age range. Currently, each branch of service has varying weight standards that are sometimes up to 10-15 pounds different.

(4) Develop and require all services to implement a consistent Joint Service body fat standard of measurement for men and women.

(5) Joint Physical Fitness Test should:

a) Determine minimum physical fitness, health and readiness standards

b) Develop consistent testing areas:

1. Strength Endurance
2. Muscular Endurance
3. Cardio-respiratory fitness

c) Tailor test towards fitness, nutrition and stress management

d) Tests should minimize risk and optimize fitness, health, and readiness

(6) Allow services to tailor their programs to meet their specific and unique individual service requirements.

Conclusion

Military service is inherently physically demanding and many military activities require significant physical strength and endurance.[82] Regular physical exercise and periodic fitness testing are important parts of the training regimens of most military units; also military members must maintain compliance with Service-specific height/weight standards to continue service.[83] Military service members are significantly affected by an epidemic of poor health and fitness. Poor health and fitness significantly decreases the strategic and operational effectiveness of the U.S. Armed Forces. While it is the Armed Forces' mission to recruit and select the most qualified applicants to fill its ranks,

and to maintain the fitness level of those who have decided to make a career of the military, they must continue to maintain the highest levels of health and fitness in order to meet the strategic and operational goals placed on them as a joint war fighting force. Service members must be in top physical condition which translates in to being healthy and fit to perform good work for this great nation.

Servicemen and women will continually be called upon to fight the nation's wars and to protect American's freedoms. Senior leaders, both strategic and operational, must continue to keep the focus on insuring that the men and women of our Armed Forces are physically fit and healthy. Senior Leaders of our military must not allow the obesity epidemic to continue to threaten the national security of this great nation as well as our Armed Forces. A joint fitness perspective will allow our military a unity of effort to address and act aggressively to combat obesity and the lack of fitness that is a threat to our National Security. Senior military leaders must act decisively now, our national security is at risk.

Endnotes

[1] William Christeson, Amy Dawson Taggert and Soren Messner-Zidell, "Too Fat to Fight: Retired Military Leaders want Junk Food out of America's Schools", April 8, 2010, http://www.cdn.missionreadiness.org/MR_Too_Fat_to_Fight-1.pdf (accessed October 17, 2010): 1.

[2] P. Sherry et al., "Vital Signs: State-Specific Obesity Prevalence Among Adults-United States, 2009," *Morbidity and Mortality Weekly Report (MMWR)* 59, http://www.cdc.gov/mmwr/pdf/wk/mm59e0803.pdf (accessed October 18, 2010): 1.

[3] Val Willingham, "Clinton: U.S. Risks 'Collapse' Without Obesity Solution," CNN.com, http://cnn.site.printthis.clickability.com/pt/cpt?action=cpt&title=Clinton%3A+U.S.+risks (accessed November 16, 2010).

[4] P. Sherry et al., "Vital Signs: State-Specific Obesity Prevalence Among Adults-United States, 2009," 1.

[5] Ibid.

[6] Bill Hendrick, "Obesity Swells in 28 States," *WebMD Health News*, June 29, 2010, http://www.webmd.com/diet/news/20100629/obesity-rate-swells-in-28-states, (accessed October 17, 2010).

[7] Ibid.

[8] Jeffrey Levi et al., "F as in Fat: How Obesity Policies are Failing in America 2009," *Trust for America's Health*, 59, http://www.healthyamericans.org (accessed October 20, 2010): 59.

[9] Ibid.

[10] Christeson et al., "Too Fat to Fight," 4.

[11] Levi et al., "F as in Fat," 59.

[12] Christeson et al., "Too Fat to Fight," 2.

[13] Ibid., 3.

[14] John M. Shalikashvili and Hugh Shelton, "The Latest National Security Threat: Obesity," *The Washington Post*, April 30, 2010; A19, http://www.washingtonpost.com/wp-dyn/content/article/2010/04/29/AR2010042903669_pdf.html (accessed January 17, 2011).

[15] Christeson et al., "Too Fat to Fight," 11.

[16] Ibid.

[17] Ibid.

[18] Ibid.

[19] Ibid., 2.

[20] Levi et al., "F as in Fat," 59.

[21] Ibid.

[22] Bob Keefe, "Michelle Obama: Childhood Obesity a Public Health Crisis," *The Atlanta Journal-Constitution*, January 28, 2010, http://www.ajc.com/news/michelle-obama-childhood-obesity-286151.html?printArticle=y (accessed January 20, 2011).

[23] Christeson et al., "Too Fat to Fight," 1.

[24] Ibid.

[25] Shalikashvili and Shelton, "The Latest National Security Threat: Obesity."

[26] Christeson et al., "Too Fat to Fight," 2.

[27] Penny Lee, "Campaign Applauds Strong Congressional Vote on Obesity Amendment to the Defense Bill," Campaign to End Obesity: Advancing America's Journey to Healthy Weight, May 27, 2010, http://www.obesitycampaign.org (accessed November 16, 2010).

[28] Christeson et al., "Too Fat to Fight," 2.

[29] Mike Kiernan and Ted Eismeier, "9 Million Young Adults are to Overweight to Join the Military, New Report Shows," *Mission: Readiness*, April 20, 2010, http://cdn.missionreadiness.org/PressRelease04202010.pdf (accessed October 17, 2010).

[30] Ibid.

[31] Ibid.

[32] Basu, S. "Military Not Immune from Obesity 'Epidemic'," *U.S. Medicine*, March 25, 2004, http://www.usmedicine.com/dailyNews.cfm?dailyID=187 (accessed December 8, 2010).

[33] Hoffman, M. "55 Percent of Airmen Overweight," *Air Force Times*, April 30, 2008, http://www.airforcetimes.com/news/2008/04/airforce_fat_AF_042808w/ (accessed November 27, 2010).

[34] David Frum, "Why Obesity is a National Security Threat," *CNN.com,* http://cnn.site.printthis.clickability.com/pt/cpt?action=cpt&title=Why+obesity+is+a+national+security+threat (accessed December 7, 2010).

[35] U.S. Department of the Army, *The Army Weight Control Program*, Army Regulation 600-9 (Washington, DC: U.S. Department of the Army, November 27, 2006), 4-5; U.S. Department of the Navy, OPNAV Instruction 6110.1H, *Physical Readiness Program* (Washington, DC: Office of the Chief of Naval Operations, August 15, 2005), 43; Department of the Navy: Marine Corps Order P6100.3, *Marine Corps Body Composition and Military Appearance Program (MCBCMAP)* (Washington, DC: Commandant of the Marine Corps, August 8, 2008).

[36] Bray et al., "2005 Department of Defense Survey of Health Related Behaviors among Active Duty Military Personnel: A Component of the Defense Lifestyle Assessment Program (DLAP)," *Research Triangle Institute*, December 2006, 58, http://www.ha.osd.mil/special_reports/2005_Health_Behaviors_Survey_1-07.pdf (accessed November 25, 2010): 58.

[37] Ibid.

[38] Armed Forces Health Surveillance Center (AFHSC), "Diagnoses of Overweight/Obesity, Active Component, U.S. Armed Forces, 1998-2008," *Medical Surveillance Monthly Report (MSMR)*, Volume 16, No. 01, January 2009. http://www.afhsc.mil (accessed October 11, 2010): 2.

[39] Ibid.

[40] Ibid.

[41] Bray et al., "Health Related Behaviors," 58.

[42] Frum, “Why Obesity is a National Threat.”

[43] Ibid.

[44] *MSMR,* 2.

[45] Gregg Zoroya, “Pentagon Reports U.S. Troops Obesity Doubles Since 2003,” *USATODAY*.com, http://www.usatoday.com/news/military/2009-02-09-obesity.htm (accessed November 22, 2010).

[46] Levi et al., “F as in Fat,” 29.

[47] Ostbye, T., J.M. Dement, and K.M. Krause. “Obesity and Workers’ Compensation: Results from the Duke Health and Safety Surveillance System,” *Archives of Internal Medicine* 167, no.8 (2007): 766-773 (accessed November 26, 2010).

[48] Frum, “Why Obesity is a National Threat.”

[49] American Obesity Association, “Military Losing War on Fat,” November 9, 2001, http://oaoweb.obesity.org/subs/pressroom/military_press.shtml, (accessed November 22, 2010).

[50] Red Orbit News, “Obesity in the Military on the Rise,” *Health News*, February 11, 2009, http://www.redorbit.com/modules/news/tools.php?tool=print&id=1637795 (accessed November 22, 2010).

[51] “Discharged Servicemen Dispute Military Weight Rules,” CNN.com, September 6, 2000. http://www.cnn.com/2000/HEALTH/09/06/military.obesity/index.html (accessed November 27, 2010).

[52] U.S. Department of Defense PharmacoEconomic Center, “Pharmacoeconomic Analysis of Obesity Treatment,” *PEC Update,* 97, no. 5 (1997): 1-17, http://www.pec.ha.osd.mil/ Updates/97%20PDFs/97-05.PDF (accessed November 27, 2010).

[53] Frum, “Why Obesity is a National Threat.”

[54] Donald A. Williamson, Gaston P. Bathalon, Lori D. Sigrist, et al., “Military Services Fitness Database: Development of a Computerized Physical Fitness and Weight Management Database for the U.S. Army,” *Military Medicine*, January 2009; 174(1): 2.

[55] Lance M. Bacon, “Weight Loss at any Cost: Some Soldiers use Extreme Methods to Meet Army’s Weight, Tape Standards,” *Army Times*, December 6, 2010, 26.

[56] Williamson et al., “Military Services Fitness Database: Development of a Computerized Physical Fitness and Weight Management Database for the U.S. Army,” 4.

[57] Ibid., 2.

[58] Ibid.

[59] Bacon, “Weight Loss at any Cost,” 26.

[60] Basu, “Military Not Immune From Obesity.”

[61] Bacon, “Weight Loss at any Cost, 27.”

[62] Ibid.

[63] American Institute for Cancer Research, Recommendations for Cancer Prevention, http://www.aicr.org/site/Pageserver?pagename=dc_home_guides, April 2008 (accessed November 11, 2010).

[64] Anthony Robbins, Susan Chao, Neal Baumgartner and Christine Runyan, “A Low Intensity Intervention to Prevent Annual Weight Gain in Active Duty Air Force Members,” *Military Medicine*, no. 171 (2006): 556-61, http://findarticles.com/p/articles/mi_qa3912/is_200606/ai_n17 (accessed November 26, 2010).

[65] Lee, “Campaign Applauds Strong Congressional Vote on Obesity Amendment to the Defense Bill.”

[66] Alexis D. Washington, “TRICARE Fit Club: Battling Obesity,” *The Military Family Network*, http://www.militaryfamilynetwork.com/article.php?aid=14539 (accessed November 22, 2010).

[67] Basu, “Military Not Immune From Obesity.”

[68] Frum, “Why Obesity is a National Threat.”

[69] Lee, “Campaign Applauds Strong Congressional Vote on Obesity Amendment to the Defense Bill.”

[70] Wang, Y., M.A. Beydoun, L. Liang, B. Caballero, and S.K. Kumanyika. “Will All Americans Become Overweight or Obese? Estimating the Progression and Cost of the U.S. Obesity Epidemic,” *Obesity* 16, no. 10 (2008): 2329 (accessed November 26, 2010).

[71] “The Military Health System Must Deal with Obesity,” *U.S. Medicine*, September 2009, http://www.usmedicine.com/articles/the-military-health-system-must-deal-with-obesity.html, (accessed December 8, 2010).

[72] Staff Sergeant Alicia K. Borlik, “Physical Training Differences Explored,” *American Forces Press Service*, May 13, 1998, http://www.defense.gov/utility/printitem.aspx?print= http://www.defense.gov/news/newsarticle.aspx?id=41344 (accessed January 22, 2011).

[73] Ibid.

[74] “The Military Health System Must Deal with Obesity,” *U.S. Medicine*.

[75] Bacon, “Weight Loss at Any Cost,” 27.

[76] “F as in Fat,” 59.

[77] U.S Department of the Army, *Physical Fitness Training,* Field Manual 21-20, (Washington, DC: U.S. Department of the Army, September 1992), 14-1.

[78] Department of the Navy: Marine Corps Order 6100.13, *Marine Corps Physical Fitness Program (MCPFP)* (Washington, DC: Marine Corps Commandant, August 1, 2008).

[79] Department of the Air Force: Air Force Instruction 36-2905, *Personnel Fitness Program* (Washington, DC: Secretary of the Air Force, January 2010).

[80] U.S. Department of the Army: *Army Physical Readiness Training* (Washington, DC: U.S. Department of the Army, September 2010).

[81] U.S. Department of the Navy, OPNAV Instruction 6110.1H, *Physical Readiness Program* (Washington, DC: Chief of Naval Operations, 15 August 2005).

[82] *MSMR*, 5.

[83] Ibid., 6.