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TITLE: Military Health Behaviors: Promotion of Healthy Weight and Fitness in Career Personnel

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14. ABSTRACT The specific aims of this research project are: 1) development of the Military Soldier Fitness Database, a computer-based data collection system that can be used to record and track the results of the Army Physical Fitness tests and measurements of body weight/fatness across time, 2) development of an environmental/Internet-based intervention to promote healthy weight through proper nutrition and physical fitness 3) test of the efficacy of and consumer satisfaction with the environmental/Internet-based intervention in a single population, i.e., Soldiers at Fort Bragg, NC. These aims fit into a three phase project completion plan. The research team from Pennington Biomedical Research Center (PBRC) has completed phases 1 and 2 of this three phase project. In Phase 1, the PBRC team studied the unique needs of the military as they pertain to the primary aims. Guided by the Executive Committee, a prototype for the computerized database was established and the architectural design of the Internet-based intervention was developed. In Phase 2, PBRC personnel developed, refined, and pilot-tested the MSFD and the Internet-based program. Phase 3, which includes a controlled evaluation of the environmental/Internet-based intervention, is currently in progress. The environmental/Internet-based program was implemented in July 2006 and data are being collected via the Internet-based program. The primary endpoints of the Intervention will be to determine consumer satisfaction with the program and the amount of Internet activity on the website.					
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Introduction

The primary aim of this investigation, entitled "Military Health Behaviors: Promotion of Healthy Weight and Fitness in Career Personnel" was to provide and test a non-clinical, environmental approach for weight gain prevention and modest weight loss for Soldiers at Fort Bragg, NC. This program is called "Healthy Eating, Activity, & Lifestyle Training Headquarters (H.E.A.L.T.H.)". Soldiers who fail to meet Army requirements for body fat defined by AR 600-9, the Army weight Control Program (AWCP), and fitness standards defined by FM 21-20, Physical Fitness Training, Army Physical Fitness Test (APFT) are the primary targets of the intervention. Soldiers with body weights that approach the maximal allowable weight as defined by AR 600-9 are also targets of the intervention. In order to evaluate changes in body weight and body fat over time, the Military Services Fitness Database (MSFD) was developed. The MSFD records body weight, body composition, and APFT scores of Soldiers over long periods of time. The MSFD was intended to be provided to Fort Bragg to measure the effectiveness of the environmental/Internet-based intervention, entitled "Healthy Eating, Activity, & Lifestyle Training Headquarters (H.E.A.L.T.H.)". Due to a series of decisions, the MSFD was not utilized for the purpose of measuring the outcome of the intervention. Nevertheless, the MSFD has been developed and tested in the field. The MSFD is one end product of the research project that is available for delivery across military services. In order to evaluate the H.E.A.L.T.H. intervention, data have been collected via the environmental/Internet-based program. Also, a health promotion program was developed to publicize the existence of the website and encourage utilization by Soldiers and Family members of Soldiers at Ft. Bragg. The health promotion program was implemented prior to the launch of the H.E.A.L.T.H. website and will be a constant health marketing program over the duration of the Internet-based program, i.e., two years. The research project was initiated in June 2003 and was planned to end in May 2007. Due to a number of delays related to the War on Terror, the project will be extended until July 2008. A no-cost extension of the study was obtained in April 2007. The following sections provide details about accomplishments that are directly related to the Statement of Work.

Body

Overarching scope of work:

In collaboration with USARIEM and USAMRMC, Pennington Biomedical Research Center (PBRC) will assist in developing strategies designed to assist career services personnel achieve and sustain compliance with military body composition and performance standards.

This objective has been accomplished, and the details of this activity will be discussed below. To meet this objective, this project was divided into three phases. The primary aims of Phases 1 and 2 have been achieved. Phase 3 is currently in progress and will continue until July 2008.

In order to fulfill the scope of work, PBRC personnel will develop a close working relationship with the Military Nutrition Division of ARIEM and the commanders at Womack Army Medical Center at Fort Bragg. An Executive Committee composed of the PI (Williamson), Specials Advisor (Ryan), USARIEM leader (COL Friedl), Contract Officer (Young), additional USARIEM personnel (Bathalon and Sigrist), and NIH consultant (Hubbard) will convene regularly by conference call and in person to provide guidance and to steer the project to complete objectives of military relevance.

This objective has been accomplished. An Executive Committee was formed in 2003. Throughout the study, semi-annual meetings have been held with Executive Committee members to review the progress of the development and implementation of the research and to discuss technical support requirements necessary to meet the objectives of military relevance. See Appendix A for a detailed travel summary. The research team traveled extensively during the project. Much of the travel involved visits to Ft. Bragg; there was also travel to Executive Committee meetings and to other sites in an effort to enhance communications and cooperation.

PBRC personnel will report all activities on the grant to members of the Executive Committee in Quarterly and Annual Reports.

This objective has been accomplished. Quarterly and annual reports outlining the activity and progress of the research

were submitted. Quarterly reports were submitted in 2003, and annual reports were submitted in May 2004, 2005, and 2006. Progress reports are presented at semi-annual meetings with the Executive Committee. Weekly to monthly conference calls are held with key personnel at Fort Bragg to monitor the progress of the environmental/Internet-based/environmental program.

Phase 1: Evaluation of Military Needs in Weight Management and Fitness Programs and for a Fitness Database (October 2002-April 2003)

In collaboration with USARIEM personnel (COL Gaston Bathalon, Principal Investigator) PBRC personnel will assist in a survey of weight management, conducted at Fort Bragg. The survey assesses the demographics of soldiers in the weight management program and methods of weight control that are in use.

This objective was accomplished. COL Gaston Bathalon headed this task. A survey was conducted with 1,167 Soldiers who were on the Army Weight Control Program (AWCP) at Fort Bragg (McGraw et al., 2005). The purpose of the survey was to assess possible reasons for weight gain and to determine what dieting practices were used by Soldiers on the AWCP. The results indicated that the majority of those surveyed (60%) reported gaining weight because of changes in exercise. It was found that multiple strategies were used to lose weight, including reducing food amount (77%), as well as unhealthy strategies such as skipping meals (71%). Most reported never engaging in dieting prior to joining the Army. An abstract was submitted to *Medicine and Science in Sports and Exercise*. See abstract in Appendix B.

PBRC personnel will investigate other military programs that use the Internet, such as Air Force LEAN and Naval Research Center in San Diego.

Drs. John Foreyt, Carlos Poston, and Christina Hunter briefed Drs. Don Williamson, Donna Ryan, and Ray Allen from PBRC on the Air Force LEAN study. This randomized trial of 446 Air Force personnel evaluated the effectiveness of a Minimal Contact Behavioral Internet Therapy (MCBIT) plus usual care compared to usual care (UC) (Poston et al., 2005). MCBIT included 24-weeks of an interactive Internet weight loss program, a self-help book, and two motivational

interviewing telephone calls, while the UC group could choose from any mandatory or self-selected weight loss methods. Results indicated that those in the MCBIT group experienced weight loss and improved body composition compared to the UC group, which gained weight.

PBRC researchers were also briefed by representatives from the Naval Research Center. These representatives reported that they were not developing an Internet-based intervention for weight gain prevention or weight loss.

PBRC personnel will review Army weight control practices in place at Womack Army Medical Center in Fort Bragg.

With input from a task force formed by Dr. Tiffany Stewart, Army weight control practices were reviewed at Womack Medical Center in Fort Bragg. With input from COL Joanna Reagan of the Nutrition Care Division, MAJ Lolita Burrell, Ph.D., 1SG (Ret) Robin Barnes, Tracey Smith, M.S., R.D., COL Gaston Bathalon, Ph.D. COL Lori Sigrist, Ph.D., R.D., as well as guidance from the Executive committee, the Internet-based intervention was tailored to meet AWCP, and Weigh-to-Stay and APFT objectives. In addition, PBRC personnel attended Army Weight Control Program sessions ("Weigh-to-Stay") at the Nutrition Care Division of the Womack Army Medical Center in Fort Bragg, as well as consulted the group about physical fitness training practices commonly engaged in to prepare for the APFT test.

PBRC personnel will investigate and catalogue existing Internet programs for weight management.

A review and technical report of Internet websites related to weight management was completed. This task was headed by Dr. Pam Davis-Martin and involved the entire research team. A technical report entitled "Weight Management on the Internet: A Review of Web Resources for Weight loss, Nutrition, and Physical Activity" was prepared. This report concluded that websites that will provide the best weight management information over time will be those sponsored by the government (e.g. NIDDK, NHLBI) as denoted by the .gov suffix, or an educational entity as denoted by the .edu suffix. In addition, in some cases, sites associated with a discipline specific or medical organization were found to have credible information as denoted by the .org suffix (e.g. ADA, ACSM, AMA). Aside from hooah4health, no other website provided military specific health and weight management information to

Soldiers and to date, no other website provided an interactive experience related to weight and physical fitness.

PBRC personnel will consult with Fort Bragg personnel to determine current procedures to track weight, body composition and APFT results. In consultation with USARIEM Military Nutrition Division and Ft. Bragg commanders, PBRC personnel will determine military needs in developing a database to track weight, body composition and APFT results.

Drs. Donald Williamson and Ray Allen of PBRC visited Fort Bragg on several occasions to meet with key military personnel regarding existing procedures to track weight, body composition and APFT results. It was determined that several computer software programs existed that were used to record weight, body composition, and APFT results but did not store longitudinal data. The MSFD was designed to be a standardized and user-friendly method to enter, store, and longitudinally track a Soldier's body weight/fatness (ARMY WEIGHT CONTROL PROGRAM) data and physical performance (APFT) data. It can be used to evaluate the changes in body weight, fatness, and fitness over time and to generate reports for an individual Soldier who needs counseling for weight management or improved fitness.

Phase 2: Development of Prototype Fitness Database and Weight Management and Fitness Program (October 2002 - October 2004)

PBRC personnel will develop, refine and pilot-test database tracking weight, body composition and APFT results at Fort Bragg. With the direction of the Executive Committee, the database will be tested during the Spring 2003 APFT. With approval of the Executive Committee and Fort Bragg Command, the database will be implemented at Fort Bragg by Spring 2004.

Military personnel are subject to the same environmental factors that have resulted in an increasing prevalence of overweight and obesity that plague the rest of Americans. Of particular concern to the Department of Defense (DoD), overweight and obesity can negatively affect combat readiness and attrition and can lead to premature discharge from military service. The U.S. General Accounting Office (GAO REF 1998) has concluded that the

problem of overweight and obesity is a significant financial cost to the military. Therefore, Soldiers must meet body fat standards, as defined by Department of the Army (DA) AR 600-9, The Army Weight Control Program to prevent premature discharge.

The military is very aware of the overweight problem that affects large numbers of military personnel and has an adverse effect on combat readiness. In 2002, the Department of the Defense (Singer et al., 2002) recommended the development of a centralized database system for each military service to track height, weight, body fatness, and fitness data collected from service personnel. To address this recommendation, (Williamson et al., in preparation) developed the Military Services Fitness Database (MSFD) in 2003. The MSFD was developed to meet the requirements of Department of Defense Instruction 1308.3, namely, a standardized method for the collection and storage of APFT and body weight/fat results. Initially, the MSFD was developed as a means for collecting data that would be used to evaluate the efficacy of the H.E.A.L.T.H. intervention for prevention of weight gain and for reducing the proportion of Soldiers who failed to meet fat and fitness standards established by the U.S. Army. This electronic database was refined and tested under the direction of the Executive Committee during the period of Spring 2003 to Fall 2005. Decisions related to use of the MSFD for evaluating the efficacy of the H.E.A.L.T.H. intervention are summarized below.

The research team strived to collect data for this population-based study from the military's standard operating procedures for the collection of APFT data. Soldiers are required to take the APFT semi-annually. As noted earlier, Dr. Williamson and the research team learned that it was possible to develop an improved computer tracking system for APFT data and the MSFD was developed to achieve this objective.

Through pilot testing, the MSFD was modified to incorporate the requests and suggestions of military personnel. The military leadership at the Pentagon and Ft. Bragg viewed the MSFD favorably, and a Memo of Support for implementation of the MSFD for collection of AWCP and APFT data at Ft. Bragg was signed in May 2004. Preliminary data presented in a later section of this report were collected utilizing the MSFD.

In 2004, the command of Ft. Bragg preferred to utilize an alternative database to collect the data and therefore, the MSFD was not allowed to be deployed across the entire

Ft. Bragg base. In response, The Pennington Biomedical Research Center (PBRC) research team, USARIEM, and the G6, XVIII Airborne Corps formed a partnership with FusionNet, which was being developed by the XVIII Airborne Corps Knowledge Management Office to streamline data collection and storage in the military. Source-code from the MSFD was provided for inclusion in the FusionNet application to capture AWCP and APFT data and generate reports. Initial plans were that upon the implementation of FusionNet, the data collected would be provided to PBRC at scheduled intervals for statistical analysis to determine the efficacy of the H.E.A.L.T.H. intervention. The fielding of FusionNet was delayed due to the Global War on Terror and data were never made available to PBRC.

A backup plan was implemented to collect data, by way of the Tasking Office, from PT Cards (DA Form 705) from units within the 82nd Airborne Corps, and use of the MSFD continued within Womack Army Medical Center's (WAMC) Alpha, Bravo, and Dentac companies. The total number of PT records collected was 3,604 with PT test dates between July 2004 and June 2005. After statistical analysis, the data proved to be of poor quality with 8.4% of the records missing height and weight of Soldiers, and 41% of the records of overweight Soldiers missing estimates of body fat. Polling of the research team led to a consensus of opinion that the allowable amount of missing data should only be 5%. Based on this opinion, the team strived to collect higher quality data in Spring 2005, but this tasking yielded data from less than 1,500 Soldiers. After much deliberation, this approach was abandoned.

Currently, outcome data on Soldiers' self-reported height, weight, and body fatness for the study is being collected via the Internet-based intervention. Some fields are automatically collected as the Soldier goes through the Internet-based intervention algorithms and uses the interactive tools, while others are collected as a function of the Soldier entering additional fields on the website, e.g. PT scores.

Research related to the MSFD program was presented at the North American Association for the Study of Obesity (NAASO) in October 2005. A full report of this project will be submitted to *Military Medicine* this year. Findings from this study are described in detail in the initial portion of the section labeled "Supporting Data." As shown in Figures 1 to 4, the average body weight and body fat of male and female soldiers gradually increased over the course of the two-year study.

PBRC personnel will develop an Internet-based program with the following components: 1) Education Materials, 2) Weight Maintenance including AR 600-9 tables, and 3) Weight Loss Tools. The status of the website development will be reported regularly to the Executive Committee and PBRC personnel will refine the website to meet specifications at the direction of the Executive Committee.

PBRC completed this task successfully, and the Internet component of the intervention was launched on July 24, 2006. The Internet-based program called "Healthy Eating, Activity, & Lifestyle Training Headquarters (H.E.A.L.T.H.)" is structured with personalized planning tools, individualized progress tracking over time related to fitness, caloric intake, weight, and lifestyle behavior modification goals. The website provides tools to track adherence to planned nutrition, fitness, and lifestyle modification goals. The website provides education and guidance on the most current fitness and nutrition standards and incorporates these standards into the interactive features of the website. In addition, the website has been updated with the most current version of AR600-9 (Stewart et al., in preparation).

Table 1 identifies featured pages/tools of the H.E.A.L.T.H. website and a description of each page. Screen captures of these main website pages and a detailed explanation of each page may be found in Appendix C.

Table 1. Major Features and Descriptions of the H.E.A.L.T.H. Website

Feature	Description
"my Weight"	Upon initial registration, a self-reported assessment of height, weight, age, and level of physical activity is entered, a summary is produced of the Soldier's current weight as it relates to military weight allowances (maximum recommended weight), as well as calories needed to maintain current weight or lose weight. A similar summary is provided to civilians based on Body Mass Index (BMI). For Soldiers and civilians (Soldiers' Family members), an estimate of the number of calories necessary to lose weight at a healthy and safe rate (1-2 lbs. per week), and a personalized weight management

	program, including nutrition and physical fitness planning, are individualized based on the information provided by the user.
Jumpstart	Educational articles relating to nutrition and fitness are available to Soldiers and civilians. Quizzes test the user's knowledge of the information in the articles, and a certificate of completion is available for printing when the user achieves a passing score.
"my Meal Plan"	This interactive tool allows Soldiers and civilians to plan meals based on their weight maintenance/weight loss needs. Pre-designed menus are available for user convenience. The user also has the option of either entering foods eaten throughout the day or planning meals for the following days.
"my Workout Plan"	Soldiers and civilians are prescribed a workout plan based on their current level of physical activity. These exercise prescriptions are based on the American College of Sports Medicine (ACSM) guidelines (ASCM, 2000). The user can adjust the plan to accommodate their personal schedule, as allowed by the program (e.g. options to switch days or change exercises etc.) within the guidelines of the ACSM (2000). Thus, it is programmed in a way that should keep the user on a reasonable schedule of exercise for his/her personal needs and goals.
Lifestyle Modification Goals	The lifestyle modification goals assist Soldiers and Family members in identifying and discontinuing unhealthy eating and exercise habits. Topics such as exercise/food monitoring and behavioral contracting are embedded throughout the site. Users are prompted every seven days to update their goals.
"my H.E.A.L.T.H."	The "my H.E.A.L.T.H." pages displays a daily summary of the meal plan selected or created by the user, the fitness prescription, and lifestyle modification goals. Prompts were added to remind the user to update weight, body fat, food, and physical activity information, as well as

	lifestyle modification goals every seven to thirty days, depending on the information needed.
"my Calendar"	The "my Calendar" page provides a month-at-a-glance comprehensive view of meals planned, cardio and strength exercises, and lifestyle modification goals scheduled for the month. Illustrative icons allow the user to track adherence to their nutrition, fitness, and lifestyle goals.
APFT Tracker	An APFT Tracking tool allows the Soldier to track and manage APFT scores. The Soldier is able to use this tool to calculate APFT scores and to store historical data from APFT tests. This feature is only available to Soldiers.
Family section	In this section, articles are available to educate the user on the most up-to-date information regarding nutrition, fitness, lifestyle modification, and time management as it relates to the Family.

One important feature of the website is that users can access and utilize the computerized weight management program with total anonymity. Due to the non-clinical, population-based design of this study, Soldiers were not formally "recruited" for the study (i.e. they did not have to sign a consent form to participate in the study). Though the Soldiers may voluntarily dedicate time to obtaining information from the H.E.A.L.T.H. website or interacting with a personalized health and fitness plan that is made easily accessible as part of this study, participation in the study requires a small amount of time from the Soldier. Neither PBRC researchers nor military personnel can personally identify a Soldier who uses the website based on information that they enter into the computer program. Anyone who chooses to utilize the website is completely anonymous. This anonymity feature is especially important for Soldiers who do not want their weight management and fitness activities to become public knowledge.

PBRC personnel will develop an environmental component of the weight management program at Fort Bragg, with consultation from Preventative Medicine, Nutrition Care Division, Public Affairs Office and Information Services at

Womack Army Medical Center. The status of the environmental component will be reported regularly to the Executive Committee and PBRC personnel will refine the component at the direction of the Executive Committee.

The PBRC research team has completed this task. Prior to the launch of the Internet component of the H.E.A.L.T.H. program, the environmental promotion program was developed in close consultation with representatives from the Nutrition Care Division (NCD), WAMC Public Affairs Office, and Information Services Office, Ft. Bragg, NC. Furthermore, a relationship has been formed with the Ft. Bragg Army Morale, Welfare, and Recreation (MWR) office to aid in promoting the Internet-based intervention on base. MWR has multiple outlets and a variety of media formats such as fitness and family events held on base, and distribution of flyers and brochures, to disseminate information to Soldiers. MWR will continue to aid PBRC in promoting the Internet-based intervention until the end of the study. Prior to the launch of the Internet-based intervention, a detailed promotions strategy was designed and implemented. PBRC employees at Fort Bragg continue to work to promote the Internet-based intervention on base until the end of the study (July 2008).

The environmental promotion program was developed to reach Soldiers, as well as Family members and civilians. The strategy includes various venues to reach perspective users and to retain registered users. Briefings to various audiences, including key military personnel, newcomers, spouses, and Soldiers in the AWCP are held on a weekly to monthly basis. A demonstration of the website is held at sporting events, health fairs, and in general congregational areas (e.g., restaurants, mini-mall, post exchanges, etc.) where promotional items displaying the H.E.A.L.T.H. logo and URL are distributed to potential users. A link to the H.E.A.L.T.H. website is included in various post electronic newsletters, on homepages of post facilities, as well as on the Fort Bragg Intranet. In addition, H.E.A.L.T.H. *Link*, a quarterly electronic newsletter created by PBRC personnel, is distributed by Ft. Bragg personnel via mass e-mail post-wide. Promotional materials, such as flyers, banners, and brochures are used to supplement the promotions effort. See Appendix D for the detailed promotions strategy.

Phase 3: Evaluation of the Internet/Environmental Intervention (November 2004 - December 2006)

PBRC personnel will evaluate the acceptance of the Internet program at Fort Bragg by tracking the rate of participation and the success of the Internet/Environmental programs by the changes in the "failure rate" of Fort Bragg Soldiers according to the database information.

Since the launch of the H.E.A.L.T.H. website in July 2006, evaluation of the acceptance of the Internet-based program at Ft. Bragg has been ongoing. Prior to the launch, the MSFD was developed to meet the requirements of Department of Defense Instruction 1308.3, by creating a standardized method for the collection and storage of APFT and body weight/fat results. The data collected were to be analyzed to determine if an environmental/Internet-based intervention reduces the proportion of Soldiers who fail to meet U.S. Army standards for fat and fitness. This electronic database was refined and tested under the direction of the Executive Committee. Data from the APFT were collected and analyzed. Through pilot testing, the MSFD was modified to incorporate the requests and suggestions of military personnel.

As noted earlier, in 2004, the command of Ft. Bragg preferred to utilize an alternative database to collect the data and therefore, the MSFD was not allowed to be implemented across the entire Ft. Bragg base. In response, PBRC personnel formed a partnership with FusionNet and the source code from the MSFD was provided for the inclusion in the FusionNet application. Initial data collected would be provided to PBRC at scheduled intervals for analysis to determine the efficacy of the Internet-based intervention. However, due to the Global War on Terror, the fielding of FusionNet was delayed and the data to objectively evaluate the efficacy of the H.E.A.L.T.H. intervention were not collected.

An alternate approach was taken to collect data from PT Cards (DA Form 705). However, this approach resulted in poor quality data. Consensus of the PBRC research team, the Contract Officer (Andrew Young) and the Executive Committee was to abandon this approach.

At the present time, outcome data on Soldiers' self-reported height, weight, and body fatness for the study is being collected via the Internet-based intervention. Some fields are automatically collected as the Soldier goes through the Internet-based intervention algorithms and uses the interactive tools, while others are collected as a

function of the Soldier entering additional fields on the Internet-based program, e.g. PT scores.

A summary of findings through May 2007 can be found in the section labeled "Supporting Data" under the heading "Data from the Website." This section describes the types of data that are being collected and illustrates patterns of utilization by Soldiers and their dependents (civilians). Of considerable importance is the finding that website utilization dramatically increases following health promotion events. We have concluded that the website must be combined with a health promotion program in order to achieve high levels of utilization. Ideally, in the future, both components of the weight management program, i.e., website and health promotion program will be integrated into existing military activities and existing electronic resources.

Since the launch of the website in July 2006, user satisfaction data have been collected and carefully monitored. Registered users are prompted to complete a survey regarding their experience with the website. The survey assesses the users' opinion of the website's usability, organization, usefulness, easy of navigation, clarity, and feedback provided. The user is asked to rate each quality on a Likert scale from 1 (strongly disagree) to 7 (strongly agree). Results of the survey indicate very positive user satisfaction with the website. A summary of the findings can be found in the "Supporting Data" section under the heading "User Satisfaction Data."

Website utilization data are also being collected and monitored. Fluctuations in usage are examined and compared to environmental changes influenced by the health promotion program. This data collection process is ongoing and will continue until the end of the study in July 2008 under a no-cost extension.

PBRC personnel will follow the recommendations of the Executive Committee on the design of the evaluation, which will depend on the results of Phase I and Phase II.

The MSFD was developed to meet the recommendations and requirements of the Department of Defense to address the military's combat readiness problems. The data collected were to be analyzed to determine if the H.E.A.L.T.H. Internet-based intervention reduced the number of Soldiers who failed to meet fat and fitness standards set by the U.S. Army. Guided by the Executive Committee, the MSFD was developed, refined, and tested. However, the command at Ft.

Bragg preferred to utilize an alternate database to collect the data. A partnership with FusionNet was created but was not continued due to the Global War on Terror. Data from PT Cards were collected but were of poor quality, and this approach was abandoned. Outcome data for the study are now being collected via self-reported data from the Internet-based intervention, namely the H.E.A.L.T.H. website.

The Executive Committee has directed the PBRC research team throughout the development and implementation of the environmental and Internet-based intervention, the H.E.A.L.T.H. program. In collaboration with military personnel from the Nutrition Care Division at Womack Army Medical Center, the website was modeled to meet the military's weight gain prevention needs. Interactive tools and education materials related to nutrition, fitness, and lifestyle modification were developed to aid Soldiers in reaching their weight gain prevention and/or weight loss goals in order to comply with the military fat and fitness allowances. Utilization of the website is being closely monitored by a website utilization tracking system. Semi-annual meetings with Executive Committee members are held to evaluate the research as it relates to military relevance. The Executive Committee continues to evaluate the modifications to the website, as well as ensure that anonymity is maintained.

Key Research Accomplishments

- An Executive Committee was formed to guide and direct the development and implementation of the MSFD and the environmental/Internet-based intervention.
- COL Gaston Bathalon of USARIEM assisted PBRC researchers with an assessment of the demographics of Soldiers at Ft. Bragg who were in the AWCP and methods of weight control that were being used. Results show that Soldiers on the AWCP use multiple strategies to lose weight, some of which may be harmful to health (McGraw et al., 2005).
- PBRC personnel were briefed by representatives from other military branches that use Internet programs as a tool for weight management for Soldiers. The Air Force LEAN program (Poston et al., 2005) was the only other Internet-based weight management intervention that was being developed for use by military personnel.

- PBRC researchers reviewed the AWCP at the Nutrition Care Division (NCD) of Womack Army Medical Center at Fort Bragg. The Internet-based intervention was created to meet the objectives of the military weight gain prevention needs.
- The entire PBRC research team conducted a thorough review of existing Internet programs for weight management. A technical report was completed (Ryan, D.H., Davis-Martin, P., & Williamson, D., 2003).
- PBRC personnel investigated procedures for tracking weight, body composition, and APFT results at Ft. Bragg. It was determined that longitudinal data were not being stored by the Army.
- The MSFD was developed to store and track weight, body composition, and APFT results. The database was refined and pilot-tested based on the direction of the Executive Committee and other key military personnel.
- The H.E.A.L.T.H. website was developed to aid soldiers with their weight gain prevention and/or weight loss needs. The development and implementation was guided by the Executive Committee.
- The H.E.A.L.T.H. website was launched on July 24, 2006.
- A detailed promotions strategy was developed to promote the H.E.A.L.T.H. website to Soldiers at Ft. Bragg and their Family members.
- While logged into the H.E.A.L.T.H. website, registered users are prompted to complete a satisfaction survey that allows them to rate their experience with the website. Data from this survey are being collected and carefully monitored.
- Website utilization data are being collected at this time and will continue through July 2008. A one-year no-cost extension of the project was approved in April 2007.

Reportable Outcomes

- The MSFD was developed to track longitudinal data on weight, body composition, and APFT scores of Soldiers.
- The H.E.A.L.T.H. website was created to aid Soldiers in weight gain prevention and/or weight loss efforts so that they comply with the military standards for fat and fitness.

- An environmental program was developed to promote the H.E.A.L.T.H. website to Soldiers and Family members.
- Ryan, Davis-Martin, & Williamson (2003) completed a review of Internet websites related to weight management, entitled "Weight Management on the Internet: A Review of web Resources for weight loss, nutrition, and physical activity".
- Stewart & Williamson (2003) presented "Approaches at Home: Internet-based Interventions for Prevention and Treatment of Obesity" at the Department of Health and Human Services (DHHS)-sponsored conference, *Weighing Down Obesity*, in New Orleans, LA on August 8, 2003.
- Ryan, Stewart, & Williamson (2003) presented a full-day workshop on Weight Management at the DOD Population Health & Health Promotion Conference in Albuquerque, NM on August 14, 2003.
- Bathalon, G. (2004) gave an oral presentation entitled, "Abdominal girth and health readiness standards: Proposed changes to AR 600-9" at the Accessions Research Consortium in Fort Jackson, SC.
- Allen et al. (2005) presented a poster at NAASO's 2005 Annual Scientific Meeting: "Military Services Fitness Database (MSFD): A computerized Tracking System for Body Weight, Fatness, and Fitness Data of Soldiers."
- Bathalon, G. (2005) gave an oral presentation entitled, "Weight status as recruits: impact on weight management" to the National Academy of Sciences Committee on Physical, Medical, and Mental Health Standards for Military Enlistment Workshop in Washington, DC.
- McGraw et al. (2005) published an abstract entitled, "Dieting Practices of Soldiers in the U.S. Army Weight Control Program" in *Medicine and Science in Sports and Exercise*.
- Bathalon, G. (2006) gave oral presentations entitled, "The Army Weight Control Program: Soldier Characteristics and Weight Loss Tactics' and Intervention Strategies" and "The Army Weight Control Program: Intervention Strategies" at the Army Force Health Protection Conference in Albuquerque, NM.
- Bathalon, G. (2007) gave an oral presentation entitled, "Overweight Soldiers: Characteristics, Weight Loss Tactics, and Intervention Strategies" at the 46th Navy Occupational Health and Preventive Medicine Conference in Hampton, VA.

- Stewart, T. (2007) will give an oral presentation entitled, "Demonstration of an Internet/Population-based Weight Management Program for the U.S. Army" at the *Clinical Diabetes Technology Meeting on Oct. 27, 2007*.
- Stewart et al. (2007) submitted an abstract entitled, "Development and Implementation of an Internet/Population-based Weight Management Program for the U.S. Army to *NAASO: The Obesity Society*."
- Stewart et al. is preparing a manuscript entitled, "Development of an Internet/Population-based Weight Management Program for the U.S. Army" for submission to the *Journal of Diabetes, Science, and Technology*.
- Stewart et al. is preparing a manuscript entitled, "Efficacy of an Internet/Population-based Weight Management Program for the U.S. Army."
- Williamson et al. is preparing a manuscript entitled, "Military Services Fitness Database: Development of a Computerized Physical Fitness and Weight Management Database for the U.S. Army" for submission to *Military Medicine*.

Conclusions:

- There is a significant need for a centralized computer tracking system for PT data that allows for collecting longitudinal data on individualized Soldiers.
- Soldiers will use an Internet-based intervention for prevention of weight gain.
- An environmental health promotion program is necessary to promote utilization of the website.
- Until the study is completed, efficacy of the environmental/Internet-based program cannot be evaluated.
- A satisfaction survey was posted on the H.E.A.L.T.H. website. Responses from 232 users of the website indicate very positive user satisfaction with the website.

Implications:

- A population-based approach (e.g. Internet-based) program could be a key component to successful weight management for military personnel

- The Internet-based program will need to be integrated into existing programs to diminish the need for health promotion/user prompting program
- Implementation of an Internet-based program will need to receive support from the command structure and medical services to maximize impact in the military population

Future Needs:

- A comprehensive, longitudinal computer tracking system for APFT results is needed in the Army.
- Evaluation of the H.E.A.L.T.H. program using randomized controlled trial is needed to determine its efficacy in comparison to a no treatment control group.

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APPENDIX A
Summary of Travel

Date	Location	Travelers	Purpose
7/03	USARIEM Natick, MA	Donald Williamson Ray Allen David Martin	-Executive Committee meeting - review progress, discuss technical support requirements, and develop plans for implementation of the research protocol
9/03	Ft. Bragg, NC	Donald Williamson Ray Allen Marianna Politzer David Martin	-Briefing/overview of project for: BG Weightman, 1SG Barnes, SFC Rhodes, 1SG Murray, LTC Rice, CSM Penn, COL Maness, LTC Doyle, and COL Caravalho Mtgs. w/ Joann Hooker (PAO), LTC Ellison (Chief of Nutrition Care Division), Mr. Dean Spice, and Dr. Mitchell
9/03	Aberdeen Proving Ground, MD	Donald Williamson Ray Allen David Martin	-Briefing/overview of project and discussion of technical support requirements for the MSFD and HEALTH website: COL Gemryl Samuels (Director of Health Promotion & Wellness), LTC Hall, MAJ Corum, Mr. Steve Kistner (Director of Technical services, deputy to BG Bester), Ms. Judy Harris (Hooah4Health CHPPM Project Officer), and Ms. Ann Stark (Hooah4Health contractor) Mtgs. with Ms. Harris and Ms. Stark.
9/03	Ft. Bragg, NC	Ray Allen Marianna Politzer	-Mtgs. re: MSFD: 1SGs Barnes, Rhodes, Murray and Lane (DENTAC), CSM Penn Mtg. w/ Dr. Mitchell re: Environmental Intervention; mtg. w/ LTC Brenda Ellison re: use of MSFD/Health website by Nutrition Care Division
10/03	Ft. Bragg, NC	Ray Allen Marianna Politzer	Briefing/overview of project for CSM Whitley - Attended "Weigh to Stay" sessions, mtgs. w/ LTC Ellison, 1LT Harvill, and MAJ Gohdes
10/03	Ft. Bragg, NC	Ray Allen Marianna Politzer Eric LeBlanc	October PT Testing
11/03	Ft. Bragg, NC	Ray Allen Guy LaVergne	-Mtgs. w/ A & B CO 1SGs & Training NCOs. Software installation on DENTAC computers (mtg. w/ Mr. Smith)

12/03	Aberdeen Proving Ground, MD	Donald Williamson Ray Allen	-Briefing/overview of project for BG Bester
12/03	Ft. Bragg, NC	Ray Allen Marianna Politzer	Mtgs. w/ SSG Johnson (A CO), Mr. Dean Spice, SFC Washington, and SFC Lane (DENTAC) - Dr. Mitchell led informal discussion groups to solicit feedback to specific pages & features of HEALTH website.
1/04	PBRC Baton Rouge, LA	Executive Committee	-Executive Committee meeting - to update the Executive Committee as to our progress, and to discuss next steps.
3/04	Ft. Bragg, NC	Ray Allen Marianna Politzer Danielle Bellotte	-Mtg. w/ Mr. Dean Spice re: SSAA -Mtgs. w/ SFC Lane & SSGs Phillips & Johnson -Mtg. w/ Dr. Mitchell re: development of posters and brochures promoting use of the HEALTH website.
3/04	Ft. Bragg, NC	Ray Allen	-Mtgs. w/ SFC Lane & SSGs Phillips & Johnson -Major updates to MSFD, updated applications and databases for A & B Companies and DENTAC
4/04	Ft. Bragg, NC	Ray Allen Sean Marshall	April PT Testing
6/04	Ft. Bragg, NC	Ray Allen Guy LaVergne	-Mtgs. w/ A, B, and DENTAC CO training NCOs regarding the MSFD. -Continue work on the DITSCAP plan and SSAA.
7/04	Ft. Bragg, NC	Ray Allen Danielle Bellotte	-Mtg. w/ Mr. Dean Spice (IMD). -Mtg. w/ Mr. Dan Kaehler of Medpros re: inclusion of MSFD with Medpros. -Mtg. w/ SSG Millet of DENTAC re: MSFD -Mtg. w/ Dr. Elizabeth Mitchell re: promoting H.E.A.L.T.H. website. -Mtg. w/ G6 COL Timothy Kokinda, G3 COL Fredrick Hodges, XVII Airborne Corps G1 (COL Thomas Seamands), and Deputy G1 Mr. Hugh Alderson re: support of MSFD installation base wide.
8/04	Ft. Bragg, NC	Ray Allen Marianna Politzer	-Mtg. w/ MAJ Warner and SGT Paris of XVIII Airborne Corps re: FusionNet Mtg. w/ SSG Millet of DENTAC re: MSFD
8/04	Boston, MA	Executive Committee	-Executive Committee Meeting -

			to review progress made to the H.E.A.L.T.H. website and MSFD.
10/04	Ft. Bragg, NC	Ray Allen Danielle Bellotte	-Mtg. w/ Dr. Elizabeth Mitchell re: Marketing H.E.A.L.T.H. website and her departure. Correspondence w/ XVIII ABN CORP G-6, re: components of MSFD to be incorporated w/ FusionNet -Mtg. w/ SGT Albert Gaskins regarding components of Weigh to Stay that could be included in the H.E.A.L.T.H. website.
11/04	Las Vegas, NV	Executive Committee	-Executive Committee Meeting - to review progress made to the H.E.A.L.T.H. website and MSFD.
1/05	Ft. Bragg, NC	Ray Allen Sean Marshall	-Mtg. w/ SFC Mark Brooks (A CO), SSG Alfonza Chatfiled (B CO), and SSG Jonathan Millet (DENTAC) re: MSFD update and changes, meet new TNG NCO's. -Begin Alpha testing H.E.A.L.T.H. website. -Meet w/ 1SG(R) Robin Barnes re: marketing website. -Brief SGM Heath and CSM Dennis Carey XVIII ABN Corp re: request copies of PT cards for data collection. -Mtg. w/ Mr. Dean Spice (IMD) re: continuing support of database downloads. -Mtg. w/ MAJ Warner and SGT Paris of XVII ABN re FusionNet updates and MOA. -Teleconference w/ PBRC, USARIEM, and NCD re: pilot testing of H.E.A.L.T.H. website.
3/05	Ft. Bragg, NC	Ray Allen Carolyn Brinkley	-Interview w/ 1SG(R) Robin Barnes re: environmental promotion position. -Mtg. w/ MAJ Graff, MAJ Metzger, CPT Walker, CPT Harvill and SGT Gaskins) re: discuss the role of NCD in the beta testing of H.E.A.L.T.H. website. -Mtg. w/ Dean Spice re: discuss future support of MSFD at WAMC Companies. -Mtg. w/ MAJ Warner and SGT Paris XVIII ABN G-6 re: Develop data spreadsheet staff as an alternative collection of

			baseline and subsequent longitudinal AWCP and APFT data (other than through FusionNet) for validating HEALTH.
6/05	Ft. Bragg, NC	Ray Allen	- Complete data entry software for July PT data entry trip.
7/05	Ft. Bragg, NC	Ray Allen Carolyn Brinkley Danielle Bellotte Sean Marshall	- Enter Army Physical Fitness Test Scorecard data obtained from XVIII Airborne Corps units into PBRC database (PTCard). - Discuss ability to link the PTCARD database with XVIII Airborne Corps G6 FusionNet database using encrypted unique identifier (last 4 of SSN and initials of first and last name) with SGT Parris. - Meet with newly assigned WAMC NCD staff regarding H.E.A.L.T.H. - Briefing to the XVIII Airborne Corps Acting Command Sergeant Major by 1SG (RET) Robin Barnes, Health Promotion Specialist (PBRC).
9/05	Ft. Bragg, NC	Ray Allen Carolyn Brinkley	- Launch the H.E.A.L.T.H. 'Jumpstart' pilot test in collaboration with NCD staff. - Outline guidance for second XVIII Airborne Corps APFT card tasking (base line data point #3). - Determine status of FusionNet. - Finalize plans for dissemination of environmental promotional plan. - Prepare upcoming Army Executive Committee Meeting.
10/05	Boston, MA	Executive Committee	-Executive Committee Meeting- to update the Executive Committee of the progress made on H.E.A.L.T.H.
11/05	Ft. Bragg, NC	Ray Allen Carolyn Brinkley	- Finalize tasking to XVIII Airborne Corps to obtain APFT data from 1 July 2005 - 31 December 2005 via hard or electronic copy. - Finalize purchase order with MWR and develop additional concepts for advertisement of H.E.A.L.T.H. - Debrief NCD staff regarding

			the H.E.A.L.T.H. 'Jumpstart' pilot project. - Review NCD Beta test of H.E.A.L.T.H.
12/05	Ft. Bragg, NC	Ray Allen Carolyn Brinkley Tiffany Stewart	- Reviewed website and worked on iterations of it for launch - Met with COL Joanna Reagan, of NCD, and discussed website features/function and how we could integrate it into Weigh To Stay once study was launched.
07/06	Fayetteville, NC	Donald Williamson Tiffany Stewart Ray Allen Guy LaVergne Robert Newton, Jr. Sandra May Kim Bowen	-Executive Committee meeting and website launch
01/07	Fayetteville, NC	Donald Williamson Sandra May	-Discuss promotion and HR issues
02/07	Fayetteville, NC	Sandra May	-Interview applicants for project coordinator position
04/07	Fayetteville, NC	Tiffany Stewart Sandra May	-Meet with new project coordinator and discuss promotional strategy

APPENDIX B
Abstract
Dieting Practices of Soldiers in the U.S. Army Weight Control Program

S.M. McGraw, G.P. Bathalon, B.K. Ellison, J.D. Graff, L.M. Burrell, R.E. Carr, C.M. Ross, D. A. Williamson, A.J. Young, FACSM. U.S. Army Research Institute of Environmental Medicine, Natick, MA, Womack Army Medical Center, Fort Bragg, NC, and Pennington Biomedical Research Center, Baton Rouge, LA

Military personnel exceeding percent body fat standard (% BF) prescribed by Army regulation are placed on the Army Weight Control Program (AWCP). Failure to meet % BF may lead to separation from the Army. In FY03, Department of Defense separated over 3,000 personnel for failure to meet % BF, of which 90% were Army personnel. The behaviors that Soldiers adopt to comply with AWCP are not well documented. **PURPOSE:** To describe dieting practices of Soldiers on the AWCP. **METHODS:** 1,164 Soldiers who had been referred to the Ft. Bragg hospital for weight control counseling (970 males and 194 females) completed a survey on dieting practices (mean \pm SD) with an age and BMI of 26 ± 6 y and 31 kg/m^2 , and 27 ± 7 y and 29 kg/m^2 , respectively.

RESULTS: Males reported being 33 ± 21 lbs over maximum screening weight and $2.6\% \pm 2.8$ over % BF, while females were 24 ± 18 lbs over maximum screening weight and $1.5\% \pm 3.8$ over % BF. 56% of males and 51% of females reported never dieting before joining the U.S. Army with the number of reported dieting attempts increasing with increasing years of military service. Top reasons reported for weight gain include: changes in exercise (60%) and/or eating habits (53%), stress (51%), and injury/medical issues (45%). Weight loss strategies included: reducing food amount (77%), increasing exercise: aerobic (74%) and/or strength training (69%) and consumption of fruits/vegetables (63%). Other strategies such as skipping meals (71%), use of 'fat burners' (55%), sauna/rubber suit (46%), appetite suppressants (36%), fasting (31%), and laxatives (21%), were also reported. Strategies that respondents would have liked to have had access to included: gym workouts (91%), sessions with a personal trainer (72%) or dietitian (62%), weight loss medications (60%), having a weight loss partner (62%), low fat/calorie food choices in dining facility (57%); personal workbook (43%), and internet (29%), and PDA-based intervention programs (28%). **CONCLUSION:** Soldiers on the AWCP use multiple strategies to lose weight, some of which may be harmful to health. Further research on desired strategies may prove beneficial.

APPENDIX C "my Weight" for Soldiers

ARMY HEALTH
Healthy Eating Activity Lifestyle Training Headquarters

New AR600-9
Are you ready for PT testing?! Check out the [NEW AR 600-9](#) and see how you measure up!

Home | my H.E.A.L.T.H. | Army Weight Standards | Nutrition | Fitness | Contributors | Help

Welcome: **soldier**
[Log-Out](#)

my Weight

Weight Summary

Your current height is:	5 feet 2.00 inches
Your current weight is:	125 lbs
Your AR600-9 Screening Table Weight is:	140 lbs
The AR600-9 recommended weight is:	133 lbs
Underweight:	104 lbs

To maintain your current weight, you need to consume **1,850 calories** per day.
Your current weight is below your Screening Table Weight.

Based on your current weight for height:

- Your weight is below your weight for height allowance as specified in [AR600-9](#).
- We recommend that you maintain your current weight.

Depending on your weight loss goals, choose an option below to continue.

**** Recommendations are based on AR 600-9 dated 27 November 2006. ****

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Upon initial registration on the website, the Soldier is prompted to report height, weight, age, and level of physical activity. The Soldier has the option to report body fat and circumference measurements as well. From this self-reported assessment, a prescription is formulated from algorithms to determine the Soldier's need for weight loss or weight maintenance based on AR 600-9. The "my Weight" page of the website provides a summary with a graphic illustration, of the Soldier's current weight as it relates to military allowances, maximum recommended weight in order to stay within military recommendations, as well as calories needed to maintain current weight or lose weight. The weight loss regimen is determined by the amount by which he/she exceeds his/her screening table weight.

APPENDIX C (Continued)
"my Weight" for Civilians

ARMY HEALTH
Healthy Eating Activity Lifestyle Training Headquarters

Time Management Section – NEW!
Are you managing your time or is your time managing you? Visit the new **Time Management** module and learn how to manage your time more effectively and reduce your stress.

Home | my H.E.A.L.T.H. | Army Weight Standards | Nutrition | Fitness | Contributors | Help

Welcome: **CivilianMan**
[Log-Out](#)

my Weight

Weight Summary

Your current height is:	5 feet 10.00 inches
Your current weight is:	185 lbs
Your current BMI is:	26.5
Your recommended BMI is:	18.5 - 24.9

To maintain your current weight, you need to consume **2,250 calories** per day.

Your BMI 



Under Weight	Normal Weight	Approaching Overweight	Obese
---------------------	----------------------	-------------------------------	--------------

-  **Indicates unhealthy weight ranges** : BMI less than 18.5 or 30 or more
-  **Normal Weight** : BMI between 18.5 and 24.4
-  **Approaching Overweight** : BMI between 24.5 and 24.9
-  **Overweight**: BMI between 25 and 29.9

Depending on your weight loss goals, choose an option below to continue.

**** Recommendations are based on AR 600-9 dated 27 November 2006. ****


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As with Soldiers, civilians (Soldiers' Family members) are prompted to report height, weight, age, and level of physical activity upon initial registration. However, the prescription for weight maintenance/loss is formulated based on body mass index (BMI) rather than AR 600-9. A similar summary, including a graphic illustration of the results, is provided to civilians based on BMI rather than guided by military standards.

APPENDIX C (Continued) Jumpstart

ARMY HEALTH.
Healthy Eating Activity Lifestyle Training Headquarters

Time Management Section – NEW!
Are you managing your time or is your time managing you? Visit the new **Time Management** module and learn how to manage your time more effectively and reduce your stress.



[Home](#) | [my H.E.A.L.T.H.](#) | [Army Weight Standards](#) | [Nutrition](#) | [Fitness](#) | [Contributors](#) | [Help](#)

Welcome:
CivilianMan
[Log-Out](#)

JumpStart to H.E.A.L.T.H.


It only takes a few minutes to set up your information and **JumpStart** your way into a nutrition and fitness plan designed around you. ARMY H.E.A.L.T.H. makes it easy to set and achieve goals by asking you a few questions about your current lifestyle concerning health, nutrition, and fitness.

Session 1 is required and will lead you through all the questions necessary to set up your personalized plan.

Session 2 is optional but full of informative articles about nutrition and fitness topics. Test your knowledge by taking a short quiz at the end of each section and earn a Certificate of Completion!

[Return to Last Page Visited](#)

SESSION 1



Program Setup

SESSION 2



Articles,
Quizzes &
Certificates

**Session 2 is required to receive a 'Certificate of Completion'*

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After completion of a self report physical assessment, both Soldiers and civilians are guided to the Jumpstart section of the website. In this section, informative articles are provided to educate the user in proper nutrition and physical fitness. These articles were written by experts in their field. A nutrition and a fitness quiz are available after each section to assess the knowledge gained from reading these articles. A certificate of completion is generated after the quizzes are taken and a passing score is achieved.

APPENDIX C (Continued)
"my Meal Plan"

ARMY HEALTH
Healthy Eating Activity Lifestyle Training Headquarters

Home
my H.E.A.L.T.H.
Army Weight Standards
Nutrition
Fitness
Contributors
Help

Welcome:
testredirect
[Log-Out](#)

my H.E.A.L.T.H. Tools

Nutrition/Fitness
[my H.E.A.L.T.H.](#)
[my Calendar](#)
[my Meal Plan](#)
[my Workout Plan](#)

Worksheets
[Target Heart Rate Calculator](#)
[Strength Workout Card](#)
[Cardio Workout Card](#)
[Problem Solving Worksheet](#)
[Printable Daily Food Log Sheet](#)
[Behavioral Contracts](#)

Links
[JumpStart](#)

Reports
[Weight History](#)
[Calorie History](#)

Monday, May 22, 2006
my Meal Plan

Print | Copy This Plan | Create My Own Meal Plan

				Kcals	Pro(g)	Fat(g)	Carbs (g)
Breakfast							
Cereal, ready-to-eat, NFS	1 cup			141	3.2	0.8	32.9
Milk, calcium fortified, cow's, fluid, skim or nonfat	8x[1 fl oz]			87	8.4	0.4	12.0
Raisins	1 miniature box (.5 oz)			42	0.5	0.1	11.1
Orange juice, freshly squeezed	6x[1 fl oz]			84	1.3	0.4	19.3
<input type="button" value="Add to Breakfast"/>				Breakfast Totals	353	13.3	1.7 75.3
Lunch							
Spaghetti with tomato sauce and chicken or turkey	1 cup			267	18.5	5.9	33.7
Roll, whole wheat, NS as to 100%	1 pan, dinner, or small roll (2" square, 2" high)			76	2.4	1.8	12.9
Broccoli, cooked, from fresh, fat not added in cooking	0.5x[1 cup, fresh, cut stalks]			22	2.3	0.3	3.9
Margarine, whipped, tub, salted	0.5x[1 tablespoon]			34	0.0	3.8	0.0
<input type="button" value="Add to Lunch"/>				Lunch Totals	399	23.3	11.7 50.6
Dinner							
Tortellini, cheese-filled, no sauce	0.5x[1 cup]			177	7.8	4.2	27.1
Caesar salad (with romaine)	1 cup			167	5.4	13.9	6.1
Caesar dressing, low-calorie	1.5x[1 tablespoon]			25	0.1	1.0	4.2
Corn, yellow, cooked, from canned, fat not added in cooking	0.67x[1 cup]			89	2.9	1.1	20.4
<input type="button" value="Add to Dinner"/>				Dinner Totals	458	16.2	20.2 57.8
Snack							
Banana, raw	1 medium (7" to 7-7/8" long)			109	1.2	0.6	27.6
Peanut butter	1 tablespoon			95	4.0	8.2	3.1
<input type="button" value="Add to Snack"/>				Snack Totals	203	5.2	8.7 30.7
Total				1,414	58.0	42.3	214.4

To **lose 1 pound per week** you should try to consume **1,400** kilocalories this day. You should consume **14 fewer kilocalories** to reach your prescribed kilocalorie level.

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The "my Meal Plan" provides pre-designed or "flipbook menus" created to aid the user in food selection. These menus contain a variety of meals (including breakfast, lunch, dinner and a snack) each of which has been pre-calculated to contain the numbers of calories required to enable the user to achieve the total daily caloric intake necessary for weight maintenance or weight loss. Users are able to "flip" to different selections of menus for each meal if they prefer a selection other than what is initially provided in the plan and the calorie content is preserved by the program supplying other choices with the same caloric content. Serving sizes are provided. These flipbook plans also include suggestions for vegetarian diets, healthful fast food options, and meal replacements in order to replace meals with shakes and snack bars if that is more convenient or desirable for the user. The user also has the option of either entering foods eaten throughout the day or planning meals for the following days. Individual foods are selected from the USDA database.

APPENDIX C (Continued)
"my Workout Plan"

ARMY
H.E.A.L.T.H.
Healthy Eating Activity Lifestyle Training Headquarters

New AR600-9
Are you ready for PT testing?! Check out the **NEW AR 600-9** and see how you measure up!

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soldier
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my H.E.A.L.T.H. Tools

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View
 Add
 Change
 Remove
 Cancel
 Save

my Workout Plan

Monday, April 30, 2007

[Print](#) | [Copy Exercises to Another Day](#)

The following exercises have been prescribed by a fitness expert and are the best exercises to help achieve your health and fitness goals. Check an exercise when completed to **track** your progress.

Be sure to read these [guidelines](#) before beginning your workout plan.

For more instruction on how to use this page, click [?](#).

Strength Exercises

	Category	Exercise	Sets	Weight (lbs)	Reps			
<input type="checkbox"/>	Legs	45-Degree Leg Press Machine	3		10			
<input type="checkbox"/>	Chest	Push Ups On Floor	3	N/A	25			

[+ Add a strength exercise](#)
[X Clear strength exercises for this day](#)

Cardio Exercises

	Cardio Exercise	Duration	HRR		
<input type="checkbox"/>	Walking	40-60 min	50-60		

[+ Add a cardio exercise](#)
[X Clear cardio exercises for this day](#)

[Print](#)

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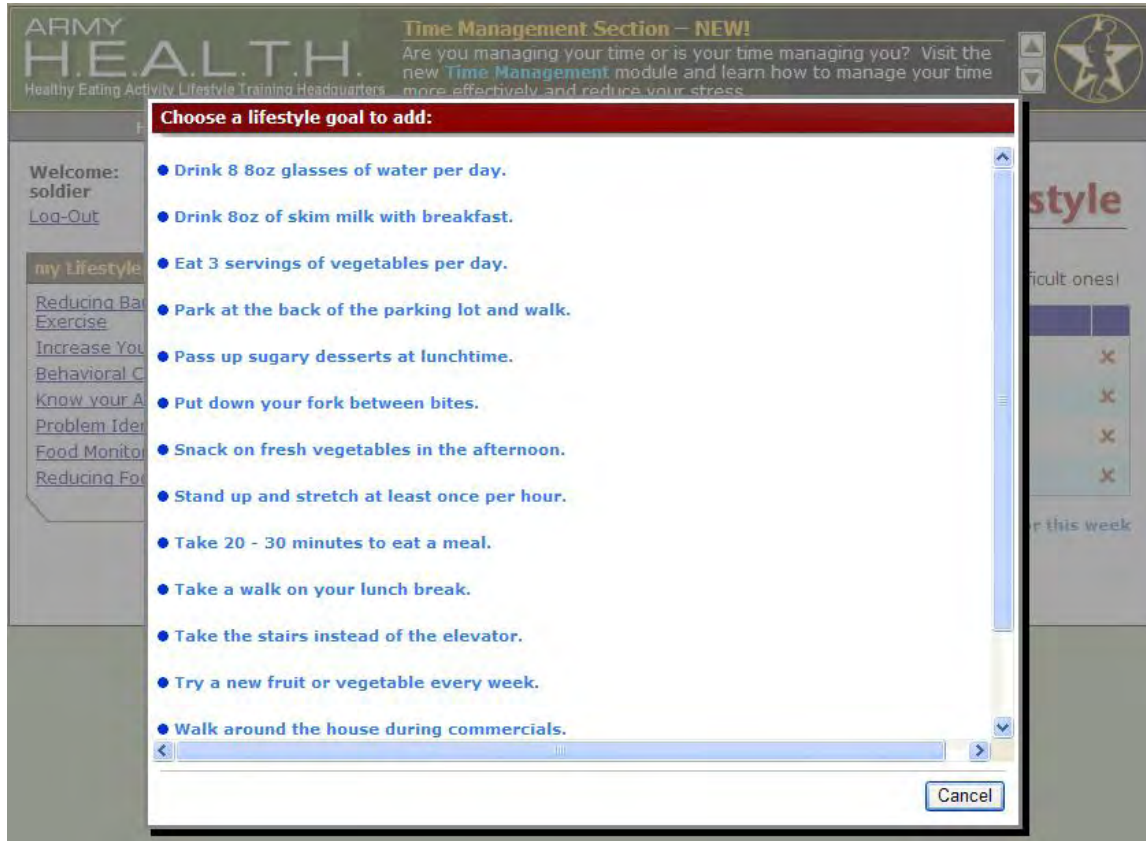
Based on an assessment of the user's current fitness level and needs, the user is provided with a personalized workout plan on the "my Workout Plan" page. These recommendations are accompanied by a statement of caution indicating that if a user has individual limitations or health issues, they should consult their doctor prior to use of the exercise program. This plan is prescribed in a daily format. When the user returns to the site, he or she is prompted to revisit the initial assessment page, to re-evaluate his or her fitness level and needs, and provide updated workout plans according to fitness needs at any point in time.

APPENDIX C (Continued)
"my Workout Plan"

The screenshot shows a Microsoft Internet Explorer window titled "Daily Exercise Schedule - Microsoft Internet Explorer". The address bar shows "http://". The page content includes a date "5/24/2006" and a heading "Strength Workouts". Below the heading is a dropdown menu with the text "Choose from these alternatives if you don't like the given exercise" and an "Update" button. The main content area features the exercise title "Chest Press with Dumbbells on Stability Ball - Alternate Arm". To the left of the description is a vertical scrollbar. The description text reads: "Description: Sit on the stability ball with dumbbells in your hands. Slowly roll onto the ball until your shoulder blades are on the middle of the ball. Raise your hips up with your feet shoulder width apart. Start with dumbbells in hands, elbows bent, at shoulder level. Extend one dumbbell straight up above your chest while keeping the other dumbbell at shoulder level. Slowly lower the extended arm while extending the opposite arm. Repeat for the desired number of repetitions. 1 repetition = performing the exercise once on the right and once on the left." Below the description are the fields "Reps: 8-12 reps with each arm" and "Benefits: Strengthening of pectorals". To the right of the text are two photographs showing a person performing the exercise on a blue stability ball. The top photo shows the person in a starting position with both arms bent and dumbbells at shoulder level. The bottom photo shows the person with one arm extended upwards and the other bent at shoulder level. The browser's status bar at the bottom left shows "javascript:Show" and the bottom right shows "inet".

The user can view photos and instructions of each exercise prescribed in the workout plan. Specific exercises are shown for each body area (e.g. arms, legs) each day. The photos and instructions for each exercise can be printed out on a daily basis.

APPENDIX C (Continued)
Lifestyle Modification Goals



An important component of the website is lifestyle modification. The health experts guiding the development of the H.E.A.L.T.H. website recognize that behavioral/lifestyle change is the most effective method of achieving long-term weight goals. The user is required to choose a minimum of one and a maximum of five goals per week. These lifestyle modification goals assist Soldiers and Family members in identifying and discontinuing unhealthy eating and exercise habits. Topics such as exercise/food monitoring and behavioral contracting were originally presented as modules, but are now embedded throughout the site as a "natural" part of the plan as a whole.

APPENDIX C (Continued)
"my H.E.A.L.T.H."

ARMY H.E.A.L.T.H.
 Healthy Eating Activity Lifestyle Training Headquarters

Time Management Section – NEW!
 Are you managing your time or is your time managing you? Visit the new **Time Management** module and learn how to manage your time more effectively and reduce your stress.

Home | my H.E.A.L.T.H. | Army Weight Standards | Nutrition | Fitness | Contributors | Help

Welcome: **soldier**
[Log-Out](#)

Monday, April 30, 2007

my H.E.A.L.T.H.

Use **myH.E.A.L.T.H.** tools on the left to change your meal plans, workout plans, and view your calendar.

my H.E.A.L.T.H. Tools

[my H.E.A.L.T.H.](#)
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Quick View Meal Plan

Breakfast

- Oatmeal, cooked, instant, fat not added in cooking - 0.75 x 1 cup, cooked
- Apple juice - 0.5 x 1 cup
- Biscuit, baking powder or buttermilk type, made from mix - 1 medium (2" dia)
- Margarine, tub, salted - 0.75 x 1 tablespoon

Lunch

- Beef, roast, roasted, lean only eaten - 2 x 1 oz, boneless, cooked, lean only
- Roll, white, hard - 1 large (include Kaiser)
- Cheese, processed, American or Cheddar type, nonfat or fat free - 1 slice, NFS (.75 oz)
- Margarine, tub, salted - 0.67 x 1 tablespoon
- Pickle, cucumber, sour - 1 spear
- White potato, chips, restructured, baked - 1 cup
- Fruit cocktail, cooked or canned, in light syrup - 0.25 x 1 cup

Dinner

- Steak, NS as to type of meat, cooked, lean only eaten - 3 x 1 oz, boneless, cooked, lean only
- Sweetpotato, baked, peel not eaten, NS as to fat added in cooking - 1 medium (2" dia, 5" long, raw)
- Roll, wheat or cracked wheat - 1 pan, dinner, or small roll (2" square, 2" high)
- Margarine, tub, salted - 0.67 x 1 tablespoon
- Broccoli, cooked, from frozen, fat not added in cooking - 1 cup, flowerets
- Cheese, Cheddar or Colby, lowfat - 1 slice (1 oz)

[Print Meal Plan](#)

Activities

- Chest • Legs • Walking

[Print Workout Plan](#)

Lifestyle Goals [Change Goals!](#)

Include whole grains at breakfast.

Engage in at least 45 minutes of exercise.

Eat 2 servings of fruit per day.

★ [Update your weight in 4 days.](#)

★ [Update your workout assessment in 3 days.](#)

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The "my H.E.A.L.T.H." page that provides a daily summary of a meal plan selected or created by the user, the fitness prescription, and lifestyle modification goals. Upon initial registration, a sample meal plan is provided but can be used "as is," modified, or deleted. Prompts were added to remind the user to update weight, body fat, food, and physical activity, as well as lifestyle modification goals every seven to thirty days, depending on the information needed.

APPENDIX C (Continued)
 "my Calendar"

ARMY HEALTH
 Healthy Eating Activity Lifestyle Training Headquarters

New APFT Calculator online!
 Track or manage your APFT scores! Go to **my Health** and click on **my APFT** to get started today!

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Legend

Progress Strength

- Complete
- Partial
- No Progress
- Scheduled

Progress Cardio

- Complete
- Partial
- No Progress
- Scheduled

Progress Menu

- Complete

my Calendar

April 2007

my Calendar is a month-at-a-glance view of your meal and workout planning. Select a link in the calendar to get a detailed view of your plans for any day you need to see.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

The "my Calendar" page provides a month-at-a-glance comprehensive view of meals planned, cardio and strength exercises, and lifestyle modification goals scheduled for the month. Illustrative icons allow the user to track adherence to their nutrition, fitness, and lifestyle goals.

APPENDIX C (Continued)
"my APFT"

ARMY HEALTH
 Healthy Eating Activity Lifestyle Training Headquarters

New Articles
 Don't be fooled by those **food** and **fitness** claims that sound too good to be true! Find out from the experts what's true and what's not!

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APFT Tracking

Use this tool to track and manage your APFT scores.

Click the **Add an APFT record** link to add a new Physical Fitness Test to your list. To view or edit an existing APFT record, click that record's date. To delete an existing APFT record, click the **X** icon in the right-most column of that record's row.

[+ Add an APFT record](#)

Date	Diag	PU Score	SU Score	Event	Event Score	Total Score	
2007-04-02		100	54	2-Mile Run	100	254	X
2007-03-27		87	69	2-Mile Run	100	256	X

An APFT Tracking tool has been implemented, which allows the Soldier to track and manage APFT scores. The Soldier is able to use this tool to calculate APFT scores and to store historical data from APFT tests.

APPENDIX C (Continued)
Family Section

ARMY HEALTH.
Healthy Eating Activity Lifestyle Training Headquarters

New AR600-9
Are you ready for PT testing?! Check out the **NEW AR 600-9** and see how you measure up!

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LoginID:
Password:
[Register](#) | [Forgot Password?](#)

Links

- [Nutrition](#)
- [Physical Fitness](#)
- [Lifestyle](#)
- [Time Management](#)



Time Management



Time Management
-- By PBRC Time Management Specialists

Do you often feel that you never have enough time to do all that you want to do? If so, this--more than likely--causes you to feel overwhelmed, frustrated and/or stressed.

[Read the Story..](#)

Nutrition



Trans Fat
-- By PBRC Nutrition Group

In recent years, trans fats have become a hot topic in the health and fitness industry. You may have heard of them, but what exactly are trans fats and what foods contain them?

[Read the Story..](#)

Physical Fitness



No Pain No Gain
-- By PBRC Fitness Specialists

In America, lack of exercise is an important contributor to four of the six leading causes of death: heart disease, cancer, stroke, and diabetes. In all, a sedentary lifestyle accounts for more than 250,000 premature deaths annually.

[Read the Story..](#)

Lifestyle



BMI
-- By PBRC Lifestyle Specialists

An estimated 65% of U.S. adults aged 20 years and older are either overweight or obese, defined as having a BMI of 25 or higher (CDC). BMI stands for Body Mass Index, and is a screening tool used to identify possible weight problems for adults.

[Read the Story..](#)

The Family section of the website can be utilized by spouses, Family members of the Soldier, or civilians in general. Articles in the Family section were written to educate the user on the most up-to-date information regarding nutrition, fitness, lifestyle modification, and time management as it relates to the Family. Including the Family fosters additional support for the Soldier to lead a healthy lifestyle.

APPENDIX D
Fort Bragg Promotion Strategy

Promotion	Description	Dates	Current Placement	Plan of Action
Links	Link to H.E.A.L.T.H. website placed on various websites/homepages of health programs, units, intranet, MWR. Link placed on e-newsletters.	Update message every quarter weeks (during campaign change and distribution of e-newsletter).	<ul style="list-style-type: none"> • MWR • Nutrition Care; Clinic/Weigh to Stay • Dragon Net (Ft. Bragg Intranet) • Picerne Construction • Hospital Heartbeat (electronic newsletter) • Preventative Medicine (electronic newsletter) • Walking for Wellness (electronic newsletter) • The Nightingale Gazette (electronic newsletter) • Womack Daily News Bulletin (electronic bulletin) 	<ul style="list-style-type: none"> • Monitor links; • Update advertisement on a quarterly basis
Television	:30 announcement on Cable Channel 7 see in post housing and offices that have cable access.	Update message every 30 days, especially at change of campaign.	<ul style="list-style-type: none"> • Cable Channel 7 (only seen on post) 	<ul style="list-style-type: none"> • Monitor spot • Update spot as needed
Flyers	Full-page, full-color flyer. Gives basic description of website; includes URL and access code.	Continuous placement	<ul style="list-style-type: none"> • WAMC • Newcomers Packets for WAMC Employees • AAFES – North and South Post Exchange • YMCA • 18th Airborne Corp Dining Facility • 82nd & 19th Replacement Briefings • 18th ABN Special 	<ul style="list-style-type: none"> • Restock as needed • Post fliers where allowed or distribute/ provide fliers at each event <p>**Be aware of new opportunities in which to distribute fliers</p>

			<p>Emphasis Program</p> <ul style="list-style-type: none"> • Medical One-Stop (in-processing) • Senior Spouses Briefings Information Update (monthly) • Weigh-to-Stay • Pregnant Soldiers Class (monthly) • Smoking Cessation Class (monthly) • Diabetes Class (monthly) 	
Welcome Packets	Provides information about Ft. Bragg to newly arriving soldiers.	Weekly (expires 7/07)	<ul style="list-style-type: none"> • Placement of inserts in weekly Welcome Packets for 82nd Airborne and 18th Airborne Corps. 	<ul style="list-style-type: none"> • Monitor supply of flier inserts.
Posters	Full-color posters. Gives basic description of website; includes URL and access code	Continuous/Change out quarterly	<ul style="list-style-type: none"> • Placement in 3 clinics and USARIEM 	<ul style="list-style-type: none"> • Monitor placement of posters at each clinic.
Banners	Ad placed on 36' X 84' vinyl banners.	Continuous	<ul style="list-style-type: none"> • Placed in USARIEM. • 2 "Fit for Bragg" posters displayed at Funk Gym 	<ul style="list-style-type: none"> • Monitor placement of banners
H.E.A.L.T.H . Link newsletter	Electronic newsletter featuring current nutrition and fitness information, a featured exercise, recipes, and upcoming additions/adaptations to the website.	Quarterly	<ul style="list-style-type: none"> • Delivered by mass e-mail 	<ul style="list-style-type: none"> • Deliver post-wide via mass e-mail

In Motion Magazine	Campaign-specific ½ page full-color ad in MWR's <i>In Motion</i> magazine.	Quarterly (See chart for ad due dates.)	<ul style="list-style-type: none"> • Winter, Spring, Summer, Fall 	<ul style="list-style-type: none"> • Update quarterly ad to reflect new campaign.
Briefings	Oral overview of website	Weekly/Monthly	<ul style="list-style-type: none"> • Nutrition Care Briefings – Weigh to Stay; Pregnant Soldiers Class (monthly); Smoking Cessation Class (monthly); Diabetes Class (monthly) • 82nd & 19th Replacement Briefings • Medical One-Stop (in-processing) • Senior Spouses Briefings-Information Update (monthly) • Family Readiness Group 	<ul style="list-style-type: none"> • Hold monthly/bi-monthly briefings <p>**Explore other opportunities to promote the H.E.A.L.T.H. website on post.</p>
Voice on Hold	Recording while on hold	Update quarterly	<ul style="list-style-type: none"> • Clark Health Clinic 	<ul style="list-style-type: none"> • Monitor VOH • Draft script on quarterly basis.
Business Cards	3 ½ X 2” business cards with URL and code	Continuous	<ul style="list-style-type: none"> • Placed on tables and distributed at events 	<ul style="list-style-type: none"> • Distribute business cards at events, briefings, contact meetings, etc. • Place on tables at clinics and at Womack display table.
Coasters	12,000 3 ½ X 3 ½” coasters placed in NCO club	Until supply is exhausted	<ul style="list-style-type: none"> • NCO club 	<ul style="list-style-type: none"> • Monitor placement of coasters
Promotional	t-shirts, coffee mugs,	Continuous	<ul style="list-style-type: none"> • Distributed at events 	<ul style="list-style-type: none"> • Monitor supply

Items	water bottles, gym towels, mouse pads, pens		and briefings	of promotional items
Mini-mall	Set up table in mall; demonstrate website using printed materials	Hold demonstration on the 1 st and 15 of every month	<ul style="list-style-type: none"> Mini-mall on posts 	<ul style="list-style-type: none"> Set up table Demonstrate website using printed materials Create awareness for need of H.E.A.L.T.H. website Distribute fliers, business cards, and promotional items
Sports USA	Set up table in restaurant; demonstrate website if Internet connection is available	Hold demonstration bi-weekly	N/A	<ul style="list-style-type: none"> Set up table Demonstrate website Distribute fliers, business cards, promotional items
Family Readiness Group	TBD	TBD	TBD	TBD
Events				
Promotion	Description	Dates	Number Expected to Attend	Plan of Action
Jingle Bell Jog	Jog open to Soldiers and civilians	December 1, 2006	500	<ul style="list-style-type: none"> Set up table Create awareness for website Distribute fliers, business cards, and promotional items
Family Health Day	Sponsored by the YMCA	April 14, 2007	1000	<ul style="list-style-type: none"> Set up table Create

				<p>awareness for website</p> <ul style="list-style-type: none"> • Distribute fliers, business cards, and promotional items
60 th Anniversary Celebration for Medical Specialists Corps	Collaborate with the Nutrition Care Division.	April 25, 2007	100	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and promotional items
Children's Fest	Festival including rides for kids; family event; partnering with Nutrition Care	April 28, 2007	4000	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and promotional items
Picerne Neighborhood Health Fair	Health fair at fitness facilities at Picerne Development located on post.	May 10, 2007	450	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and promotional items
Army 10-Miler	<p>MWR-sponsored event. MWR will:</p> <ul style="list-style-type: none"> ○ Allow PBRC to display a banner during the event ○ Allow PBRC to have a table to distribute 	June 7, 2007 and June 2008	1000	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and

	promotional materials during the event			promotional items
Fitness Fest	MWR-sponsored event. MWR will: <ul style="list-style-type: none"> ○ Allow PBRC to have a table to distribute promotional materials during the event ○ Allow your company to display a banner during the event 	June 2007	50-100 (Based on Fit for Bragg)	<ul style="list-style-type: none"> ● Set up table ● Create awareness for website ● Distribute fliers, business cards, and promotional items
Operation Celebrate Freedom	MWR-sponsored event. MWR will: <ul style="list-style-type: none"> ○ Provide a display area for the duration of the event under a tent. Tent, tables, chairs, and electricity will be provided. Up to 4 vehicles are authorized for display. ○ Your company will be announced as one of the presenting sponsors during the live simulcast on the day of the event. ○ Hang Exhibitor banner for duration of the event. 	July 4, 2007 July 4, 2008	500	<ul style="list-style-type: none"> ● Set up table ● Create awareness for website ● Distribute fliers, business cards, and promotional items
Retiree Appreciation Day	Event held at medical facility for retirees	September 29, 2007	100	<ul style="list-style-type: none"> ● Set up table ● Create awareness for website ● Distribute fliers, business cards, and promotional items
BOSS's Summer	MWR-sponsored event; Event for single soldiers	TBD	200	<ul style="list-style-type: none"> ● Set up table ● Create

Blast				awareness for website <ul style="list-style-type: none"> • Distribute fliers, business cards, and promotional items
Octoberfest	MWR-sponsored event; 2-week event	TBD	1000	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and promotional items
Holiday Tree Lighting	MWR-sponsored event Tree lighting event during holidays	TBD	1000	<ul style="list-style-type: none"> • Set up table • Create awareness for website • Distribute fliers, business cards, and promotional items

Supporting Data

Body Weight and Body Fat Data from the MSFD. Data from the APFT test were collected via the MSFD from WAMC's Alpha, Bravo, and Dentac companies. Dates covered in this pilot testing: October 2003, April 2004, October 2004, April 2005, and October 2005. A total of 1710 Soldier's records were recorded by the MSFD. Of this number, 684 Soldier's data were collected for at least 3 time points (423 Male and 261 Female).

Figures 1 and 2 depict the findings from this two year longitudinal study of changes in Soldier's body weight, fatness estimates, and pass/fail status. Figure 1 summarizes mean body weight over five time periods for the entire sample (n = 684), men (n = 423) and women (n = 261), separately. It is evident that there is a general trend for gradual weight gain for the sample, and for men and women over time. These changes are statistically significant ($p < .05$).

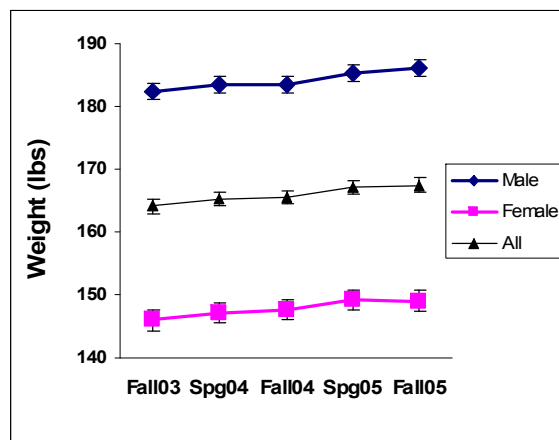


Fig 1: Body weight over two years by gender

Figure 2 summarizes the same information, expressed as a deviation from the maximum allowable screening weight. This approach corrects for gender and changes in age. Over the course of two years, women averaged between 3.5 - 5.5 lbs over their screening table weight, while men averaged between 3 - 6 lbs under their screening table weight. Over time, males on average approached their screening table weight while women continue to exceed their weight by a greater number of pounds.

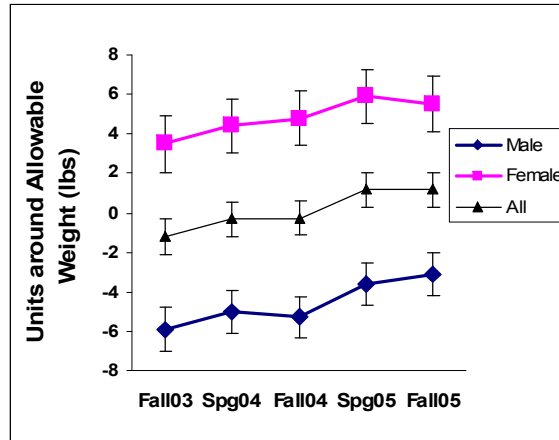


Fig 2: Body weight deviation over two years by gender

Figure 3 summarizes mean body fat percent estimates for men categorized as those who passed versus failed, i.e., fatness exceeded criterion. Overall, the two groups differed and the overfat (fail) group had approximately 5% to 6% extra fat tissue in comparison to men who were taped but failed.

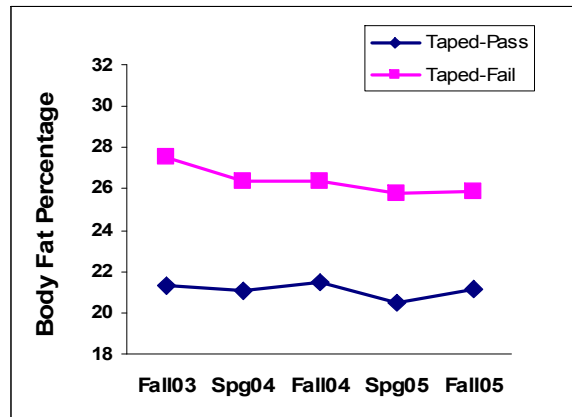


Fig 3: Male body fat percent means over time.

Figure 4 depicts the mean fatness estimates for women. Those who failed (exceeded the fatness criterion) had approximately 5% to 8% excess body fat in comparison to those who failed. A positive finding was that fatness estimated of male and female Soldiers who failed, were lower in Fall 2005 in comparison to Fall 2003. Collectively, these data illustrate the potential power of

computerized database for capturing and summarizing population trends of body weight, and fatness.

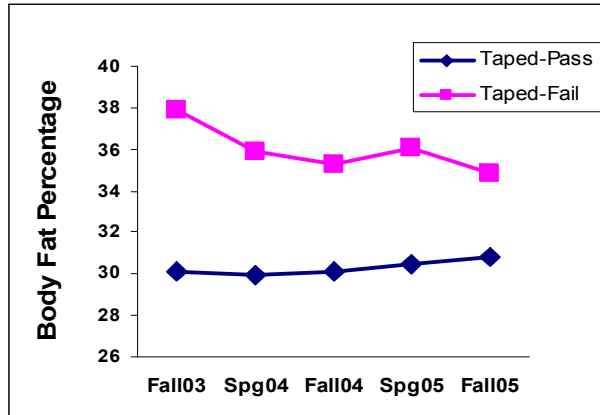


Fig 4: Female body fat percent means over time.

Data collected from the Website. The H.E.A.L.T.H. website automatically collects and stores a variety of information. These data are based upon self-report. This information will be used to describe different types of users, e.g., frequent versus infrequent users, and it will be used to evaluate utilization of the program and satisfaction with the website and functions of the program. Figure 5 shows that 851 (85%) of Soldiers who registered on the website were not in the Army Weight Control Program (AWCP). However, 49% (530) of Soldiers reported a BMI of 25 to 30 kg/m² as shown in Figure 6.

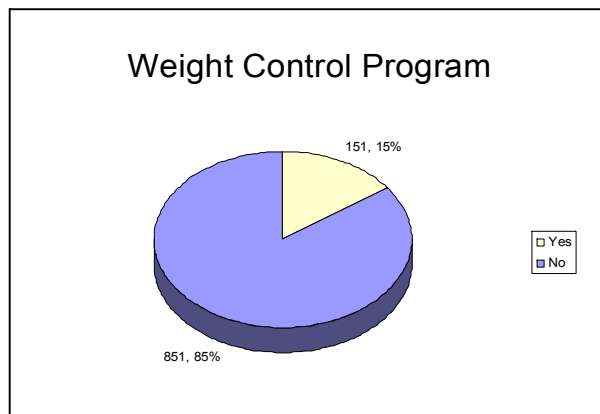


Fig 5: Soldiers in the Army Weight Control Program (AWCP)

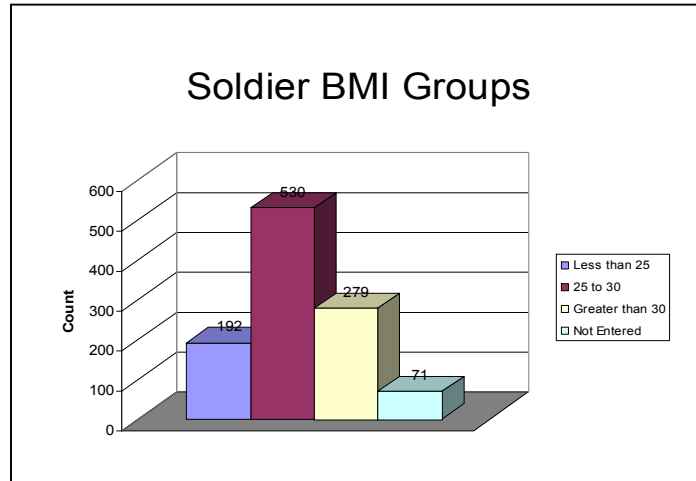


Fig 6: Soldiers self-reported BMI (kg/m²)

Since the launch of the Internet program, utilization data has been continuously collected by week and for the last 21 days for Soldiers and civilians and carefully monitored. Figures 7 and 8 depict the number of new and returning Soldiers by week and new and returning civilians by week, respectively. A returning user is defined as one who has logged onto the website more than one time. During the weeks of October 9 and October 16, a sharp increase in the number of new and return Soldiers and civilians occurred due to a mass e-mail delivered post-wide that provided the link to the H.E.A.L.T.H. website with an invitation to login. This increase indicates that a health promotion program is necessary to increase usage of an Internet-based program.

Soldiers: By Week

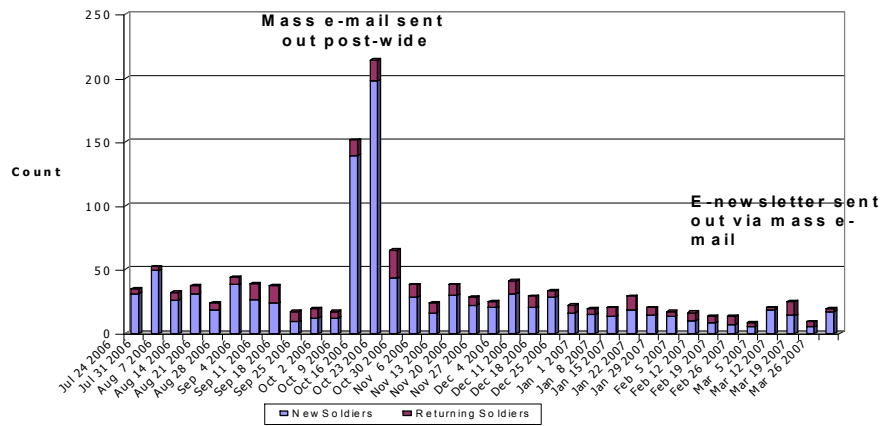


Fig 7: Utilization of the H.E.A.L.T.H. website by Soldiers (by week)

Civilians: By Week

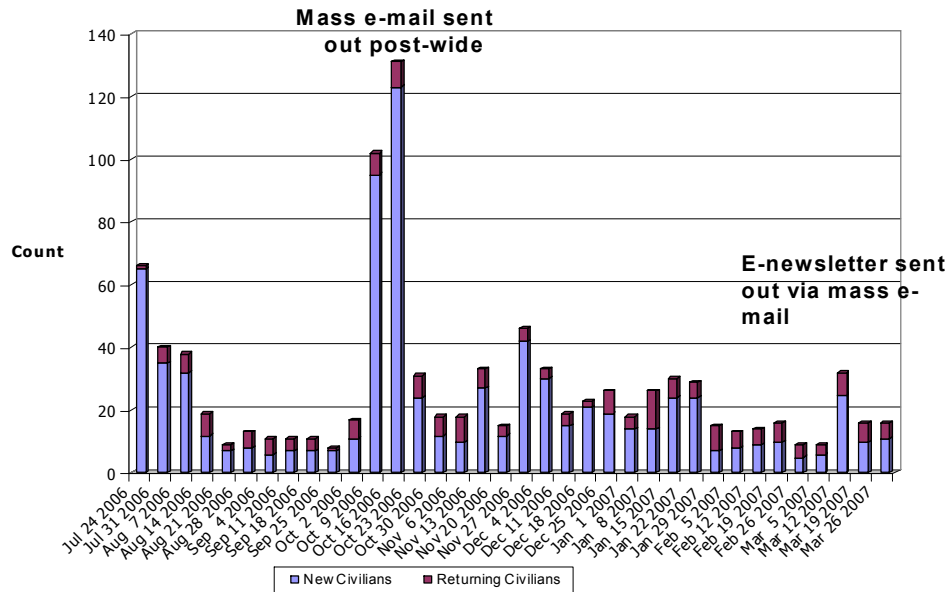


Fig 8: Utilization of the H.E.A.L.T.H. website by Civilians (by week)

User Satisfaction Data. Table 2 shows the average scores of Soldier and civilian responses to questions related to their experience on the H.E.A.L.T.H. website. Each question is rated on a Likert scale from 1 (strongly disagree) to 7 (strongly agree). Average scores indicate very positive user satisfaction regarding their experience with the website. It is important to note that two of the questions are "scored in reverse" so that lower ratings, e.g., 1 or 2, indicate positive responses. In general, the average ratings for each question indicated that Soldiers and Civilians reported that they "Agreed" with the statements.

Table 2. Average scores of Soldier and civilian responses to the user satisfaction survey

Question#	Question	Average Soldier Score	Average Civilian Score
1	The website was easy to use ("user-friendly").	5.39	5.84
2	The website was personalized. It provided customized feedback to me.	5.43	5.92
3	The website was useful and helped me in my attempts to improve my health.	5.45	5.83
4	I felt confused while using the website.	2.9	2.17
5	I felt lost while looking for information.	2.78	2.17
6	The use of graphics on the website helped me track my progress at changing my habits.	4.89	5.62
7	Did you find that creating an account on the website was helpful?	5.37	5.87
8	The website was well organized.	5.42	5.87
9	The website was easy to move around in.	5.4	5.86
10	The links were helpful.	5.38	5.81
11	The instructions on the website were clear.	5.4	5.86
12	Graphics and charts were attractive and visually pleasing.	5.49	5.71
13	Text was presented in a simple and straightforward way.	5.6	5.89
14	The website was easy to read.	5.59	5.9

Employee's Paid from the U.S. Army

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Julia Volaufova
Archana Acharya
H. Raymond Allen
Robin Barnes
Danielle Bellotte
Leah Blaise
Kim Bowen
Carolyn Brinkley
Megan Franklin
Chris Goff
Hongmei Han
Alicia Hymel
Nancy Kora
Eric Leblanc
Leslie Lewis
Laura Libassi
Sean Marshall
Corby Martin
David Martin
Pamela Martin
Sandra May
Matt McGucken
Elizabeth Mitchell
Robert Newton, Jr.
Timothy Nguyen
Laren Ortego
Sridhar Pallapotu
Mariana Politzer
Shelly Prince
Ryan Russell
Donna Ryan
Melinda Sothern
Tiffany Stewart
Angelina Stratton
Lisa Thompson
Heather Walden
Donald Williamson
Emily York-Crowe