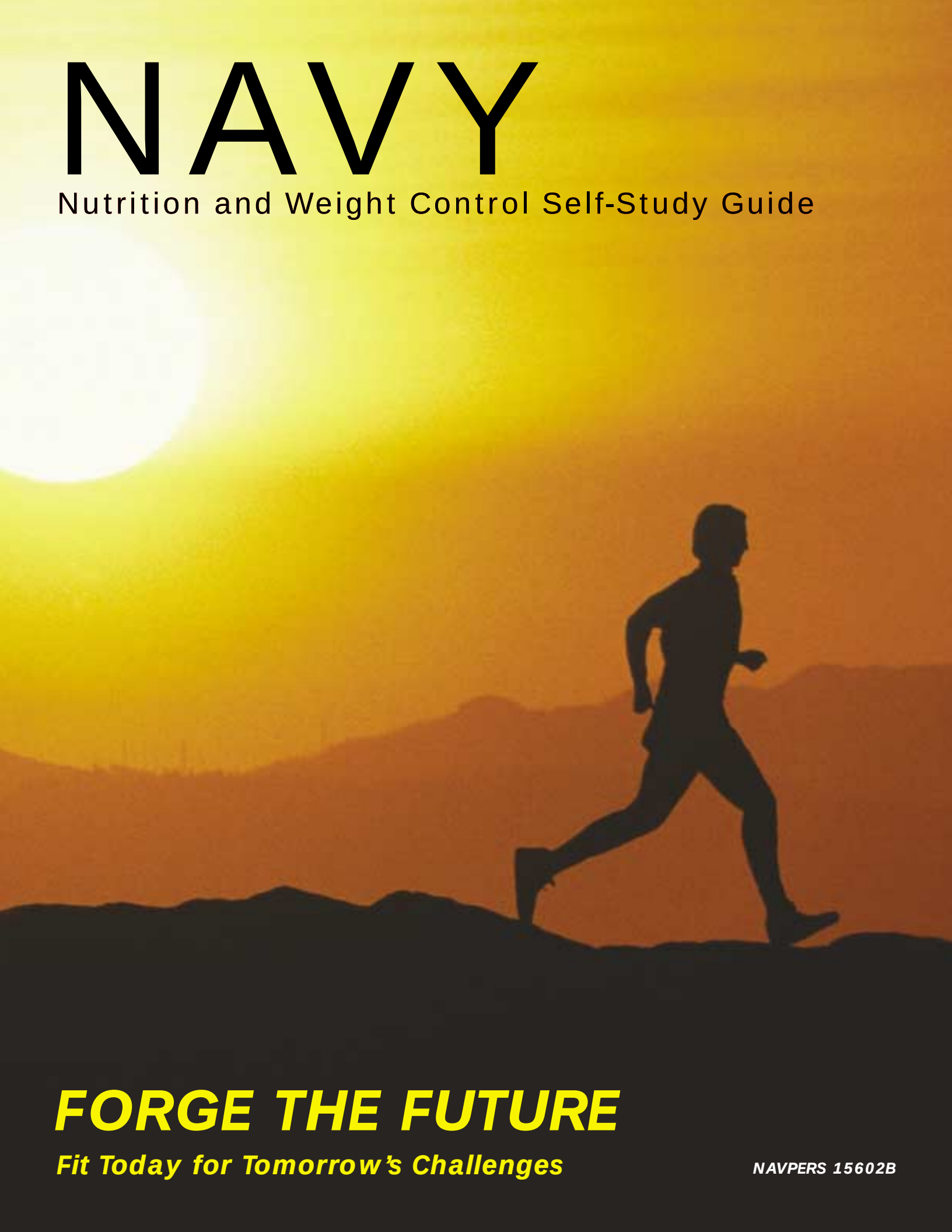
NAVY

Nutrition and Weight Control Self-Study Guide



FORGE THE FUTURE

Fit Today for Tomorrow's Challenges

NAVPERS 15602B

DEPARTMENT OF THE NAVY

BUREAU OF NAVAL PERSONNEL
WASHINGTON, D.C. 20370-5000

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From: Assistant Chief of Naval Personnel, Personal Readiness and Community Support (Pers-6)

Subj: NAVY NUTRITION AND WEIGHT CONTROL SELF-STUDY GUIDE

Encl: (1) Navy Nutrition and Weight Control Self-Study Guide

1. The Navy Nutrition and Weight Control Self-Study Guide (enclosure (1)), is the principal tool that will enable service members to vastly improve their individual health and fitness. This guide is primarily a weight management educational tool that incorporates all aspects of losing weight safely and effectively. Using this guide in combination with your command's physical conditioning program will assist you in reaching your personal goals.
2. This workbook has been developed with you, the Navy service member, in mind. Your concerns regarding exercise, proper nutrition, dining out, and eating in the general mess have been addressed. The information in this workbook is essential for adopting healthy eating and exercise habits. These materials should not be used as a one-time, "quick fix," to attain ideal weight limits. It is imperative that the information contained in this manual be referred to and implemented throughout your naval career.
3. It is every member's responsibility to maintain body fat standards and keep physically fit to ensure a strong, fit Navy. Recognizing this, health and fitness should be viewed as a personal investment that will yield benefits years beyond your naval career.

L. R. MARSH
Rear Admiral, U.S. Navy

PREFACE

To the Command Fitness Leader (CFL):

This manual is to be used with your command's fitness enhancement program (FEP) to assist members in meeting and maintaining body fat standards. A copy of this manual should be distributed to every Navy member who measures out of body fat standards. The manual is written in a self-study guide format and is self-paced. It is recommended that members complete one chapter per week. Study questions are contained at the end of each chapter.

You need to become familiar with the information in the manual. While you are not expected to be a "nutritionist", you may need to be available for questions on basic diet principles, safe weight loss, and effective exercise for reducing body fat. The appendix contains valuable information on fat content of foods, recommended readings, and frequently asked questions. This manual is not meant as a "one-time" educational guide, but rather it is expected that members will need to refer to and review this manual many times throughout their Navy career.

Ensure each member measuring out of body fat standards receives their own copy of the manual. Commands should reproduce this manual as needed. A master copy of this document can be downloaded from www.bupers.navy.mil/services/weight.html.

Complete the Command-Directed Physical Conditioning Weight Control Summary on the following page for each member using the weight control manual. Forward this form to Navy Personnel Command for each member who begins using the weight control manual due to measuring out of body fat standards.

To the Service member:

Your command fitness leader will be providing information to PERS-651 (Physical Readiness Program) when you start using the weight control manual. This information will be used to evaluate program participation as well as document your participation in the weight management education process. Your height/weight/body fat measurements will be taken from the physical readiness information management system (PRIMS) software and forwarded to Navy Personnel Command before starting on the fitness enhancement program. You may be contacted at a later time to help evaluate the effectiveness of the weight control manual.

COMMAND-DIRECTED PHYSICAL CONDITIONING WEIGHT CONTROL SUMMARY

Privacy Act Statement

Authority to request this information is derived from the most current OPNAVINST 6110.1____. Purpose of this information is to establish the level of utilization of this program and to aid in retrieval of information for further study. This information is maintained at Navy Personnel Command and may possibly assist in contacting program participants at a later date. Completion of this form is the sole documentation confirming your active participation in the weight management education process.

I. Provide the following information.

Today's date _____

Name _____
LAST FIRST MI RATE/RANK

Social Security # _____

Activity UIC _____

Command Address _____

Last official body composition from physical readiness information management system (PRIMS) software.

Date Completed (mm/dd/yy)	/ /
1. Height	
2. Weight	
3. Neck	
4. Abdomen (Men only)	
5. Natural Waist (Women only)	
6. Hip (Women only)	
7. % Body Fat	

II. Keep a signed copy of this form and mail the original to:

Navy Personnel Command
PERS-651D
5720 Integrity Drive
Millington, TN 38055-6510

III. Signature of member _____

IV. Signature of CFC _____

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CHAPTER 1

INTRODUCTION TO COMMAND–DIRECTED PHYSICAL CONDITIONING

1

Why does the Navy care about body fat?

Obesity is defined as a condition of excess fatness. The National Institutes of Health (NIH) has determined that a 20 percent increase in body weight above desirable body weight (desirable as defined by NIH) substantially increases the risk for high blood pressure, heart disease, diabetes, elevated cholesterol and triglycerides. Obesity is also considered a risk factor for some kinds of cancer and is associated with joint diseases, gallstones, and respiratory problems.

According to recent federal government statistics, 32 percent of white females, 48 percent of African-American females, 47 percent of Hispanic females, and 32 percent of men of all races were overweight or obese. Obesity has become an enormous public health problem. Health care costs related to overweight and sedentary lifestyle are now at over $100 billion a year. To summarize, increases in body weight of 20 percent or more above desirable body weight defines obesity and is a major health hazard.

The Naval Health Research Center (NHRC), San Diego, was tasked with evaluating techniques for estimating body fat. Since that time, the Navy added the height/weight tables as an initial screen, with body fat (assessed by the NHRC circumference tape measure) as a final check for those who fail the height/weight screen. Weight for height is a less precise indicator of fatness than percent fat estimated from circumference tape measure. Muscle weighs more than fat, so therefore a very muscular person may fail height/weight screening, yet may meet body fat standards. The 2-tiered system appears to work best for the Navy.

Command-directed physical conditioning is a program for those members who do not meet standards for body fat or fitness. This workbook deals primarily with excess body fat. The program is command-directed and should include physical conditioning, nutrition education, and referral to a support group whenever available. This workbook has been designed as a self-study guide to assist you in meeting body fat standards, as well as maintaining a healthy lifestyle. This workbook does not replace consultation with a dietitian. However, it should be used to introduce you to basic nutrition concepts and skills needed to lose weight safely and to maintain a healthy lifestyle. If you do not have access to a registered dietitian, the workbook is designed to be comprehensive enough to incorporate the basics of the nutrition education process.

This workbook has 9 chapters with a test at the end of each chapter, and an appendix of frequently asked questions. The workbook is designed to be self paced, yet for optimal learning, you should complete one chapter per week.

Navy Physical Readiness

Why is there no allowance for age in the Navy Physical Readiness weight and body fat standards?

It is true that many people in the United States tend to gain weight with age, but **it is not necessary that we do**. Getting fatter as we get older is not without increased health risks. According to the 1995 Dietary Guidelines for Americans, it is recommended that we not allow our weight to increase as we age. Diseases associated with aging such as Type II diabetes, heart disease, and stroke are more prevalent in the obese population. For these reasons, the Navy does not allow increases in weight or body fat with age. Getting older is not an excuse for extra pounds!

Metabolism slows about 5 percent every decade after age 30, therefore we have to decrease food intake by that much just to stay even. We tend to lose muscle and bone with age as well. We can slow down the effects of decreased metabolism and declining muscle mass if we remain physically active. Muscle tissue is more metabolically active than fat, therefore metabolism increases with increases in muscle tissue. Since less than 10% of the US population currently exercises regularly 3 times per week, it is understandable that most people believe it is a normal process to gain weight as we age. Studies done on other societies show that increases in weight with age are not widespread.

What works to lose weight?

4 components are needed to lose weight effectively and safely:

1. Moderate calorie restriction.
2. Regular aerobic exercise, combined with strength training.
3. A low-fat/high fiber diet.
4. Behavior/lifestyle change to include these 3 factors.

Many people choose to do only one component of these. They may lose weight, but at some point the weight loss may be slow and stop, and they may have trouble keeping if off. Let's illustrate some examples:

1) A person who does not watch calories, yet eats anything as long as it is low-fat or fat-free. Result: Calorie intake will be excessive and therefore, extra calories are stored as fat. **The human body will convert any calories it does not use to fat**. "Fat-free" does not mean "calorie-free!"

2) A person who diets, watching both calories and fat, may not perform regular exercise. Result: Metabolism will lower with a decrease in calorie intake. Weight will "plateau" after initial weight loss due to the body's adaptive process.

As you can see, the combination of decreased calories, exercise and low fat diet provide the most effective way to lose weight. Safe weight loss is 1-2 pounds per week for the average person. Some weight loss plans claim you can lose 5 or more pounds in a week. This would most likely be fluid loss and not true fat loss. Don't be fooled by these claims!

The diet mentality

The word "diet" implies that you are going "on" something to come "off" at a later time. A diet also implies that you are restricted from doing something, which usually leaves you feeling deprived. This is the main reason people "on diets" fail at weight loss. Unfortunately, losing weight does not mean it will stay off. Many people lose weight, but find it more difficult to keep if off. A **healthy diet** and **regular exercise** as part of your lifestyle will lead to and maintain a healthier you. This is the key. Keeping weight off is a lifestyle change.

Self-monitoring

Self-monitoring is a simple tool that can be regarded as the initial step you can take when changing food and exercise habits. It involves documenting your daily food intake and daily exercise. Awareness is the key step to changing habits. Your food and exercise patterns become clearer as you write them down. Some patterns you may want to look for:

How much fat do I really eat?
How many calories do I really eat?
When is my first meal of the day?
Do I skip meals?
Do I eat when anxious or upset?
What portion sizes am I consuming?
How many servings of fruits and vegetables do I actually consume?
How many days a week do I really exercise and for how long?
Do I do any strength training?
Do I go for long periods without exercising?

Most people tend to **underestimate** their food intake and **overestimate** their activity level.

The food record

A sample food record is provided at the end of this chapter. Make photocopies of the blank food record and use it daily. You may find this task tedious in the beginning, but continue doing it. It will become easier with time. Record keeping, for both food and exercise, is one of the most important lifestyle behaviors you will learn. Keeping a food log is one of the best predictors of weight loss and weight maintenance. **Those people who keep food and exercise records lose more weight and maintain weight loss than those people who don't keep records**. Remember, you are looking for patterns of eating and overall calorie and fat intake.

Tips:

1. Record ALL food and beverages, except water (hidden calories in beverages add up!).
2. Record the time of day for all meals and snacks (this will become more significant later on).
3. Record as soon as possible after eating (it is hard to remember at the end of the day).
4. Note portion sizes as honestly as possible (this will become easier with practice).

5. Hunger: 0 = not hungry 5 = starving!
   Speed of eating: 0 = slow 5 = very rapid
6. Note your mood when you first start eating. Sometimes we don't have the words to describe ourmoods. Here is a sample list in alphabetical order.

anxious	calm	happy	nervous
angry	excited	guilty	sad
bored	funny	lighthearted	serious

Although the food record is for your personal benefit, it is best, in the beginning, to have it reviewed by someone you feel is a source of support. This could be your spouse, a family member, a friend, or a shipmate who is also trying to lose weight. Research shows that when trying to change habits, people who have a source of support do better. While your support person may not be an expert in the field of weight loss, talking about issues with food, etc. usually helps with problem solving.

The exercise log

A sample exercise log is provided at the end of this chapter. Make photocopies of the blank calendar provided. The calendar is for one month only, and the days are blank so that you may fill in the days corresponding to the month you are recording. Record daily, the type of exercise and duration. This will allow you to look back over a week or month's time to see your actual exercise and progress. These records may be initialed by your CFC for monitoring purposes.

To weigh or not to weigh?

At times, the scale can be your best friend or your worst enemy. Although there is no one best way, most experts agree that weighing yourself often is a good idea. Weighing yourself is an important monitoring tool, but keep it in proper perspective. Your weight on a scale can vary throughout the day and well as from scale to scale. How often you need to weigh is left up to interpretation.

Many people practice the unhealthy habit of "scale avoidance" which typically occurs from Thanksgiving to New Year's Day. Experts agree this can be disastrous in that you become "blind" to weight increases. Keep in mind the scale cannot tell the difference between you and a sack of potatoes. Likewise, the scale cannot tell muscle mass from fat mass (the average Mr. Olympia weighs 300 pounds). Circumference measurements are the most reliable in telling differences in body composition (fat vs. muscle), as inches lost are usually more significant than pounds lost. Muscle mass weighs more than fat mass, but it takes up less space on your body.

Still, weighing yourself daily or at a minimum weekly, is a good habit to get into, along with periodic circumference measurements. To insure consistent results, try to weigh yourself on the same scale, with the same amount of clothing, at the same time of day. A sample log is provided to record your results at the end of this chapter.

Goal setting

It is important to set goals, both short-term and long-term. Goals need to be realistic. As a general rule, you should lose no more than 1-2 pounds per week. If you set unrealistic goals, you'll be setting yourself up for failure.

It is best to determine your long-term goal first. An example would be **"to be within standards by 2 percent by the PRT."** From that goal, you can begin working backwards to set your short-term goals. For instance, the PRT is 6 months away, and you know you need to lose 30 pounds to meet your goal. Your short-term goal may be **"to lose 5 pounds per month."** You may say to yourself, "30 pounds seems like a lot, but I know I can lose 5 pounds in a month."

A special word about water

Although water consumption is not included on your food records, this does not mean it isn't important. Water does not contain calories, however it is essential to maintain good health. In fact without water, death occurs within days. Your body is approximately 40-60% water. Water is essential for the process of digestion and absorption of nutrients, and excretion of metabolic wastes. Water plays a direct role in the regulation of body temperature, which becomes especially important with physical activity in warm weather.

There is nothing "magical" with regards to weight loss and water-drinking. Drinking water will not "flush" fat out of your body, but it will keep you well hydrated. Some people report that increasing their water intake keeps them from overeating, especially at mealtime. Keep in mind, when we use the word "water," this can mean any non-caloric, caffeine-free fluid. Water is supplied from both food and liquids. Foods, mainly fruits and vegetables, contain water. There is no provision for water storage in the body; therefore, the amount lost every 24 hours must be replaced to maintain health. Normally, about 2.5 liters of water (ten 8-ounce cups) are required each day by a sedentary adult living in a normal environment.

Daily Food Record

Day: M T W T F S S

Date: _____

TIME OF DAY	MOOD	HUNGER 0-5	SPEED 0-5	WHERE EATEN	FOOD INTAKE	AMOUNT	CALORIES / FAT GRAMS

Reviewed by support person _____

EXERCISE LOG FOR THE MONTH OF _____

SUN	MON	TUE	WED	THU	FRI	SAT

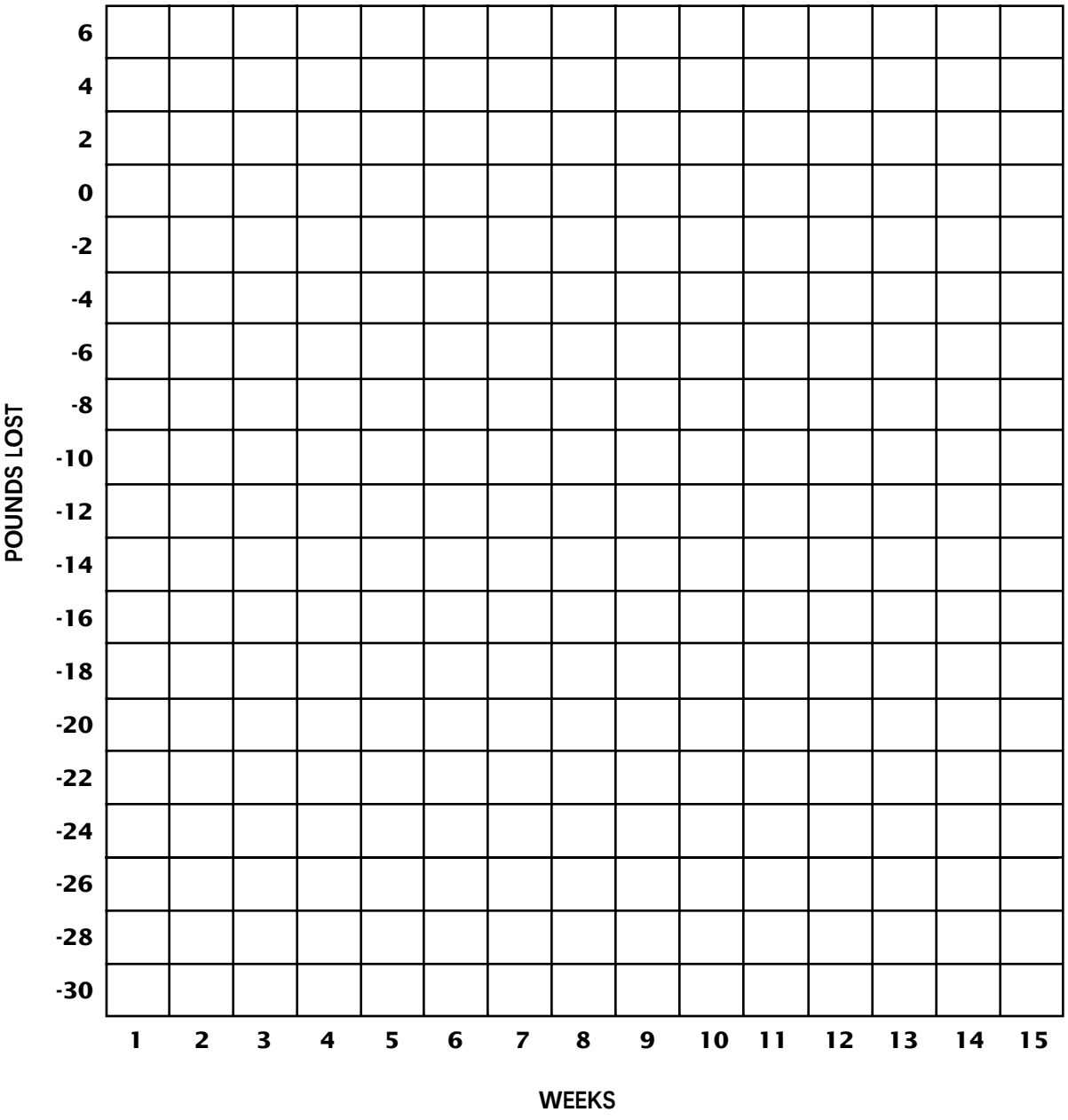
Reviewed by CFC _____

My Weight Management Goals

Starting weight _____ Date _____

Short-term goals _____

Long-term goals _____



Chapter 1 Study Questions

1. Obesity is defined as _____ % over desirable body weight.

2. Muscle tissue weight **more/less** than fat tissue. **(circle one)**

3. Experts agree that gaining weight as you get older is a normal part of aging and does not pose any increased health risks. **True or False**

4. As we get older, metabolism and lean muscle mass **increase/decrease**. **(circle one)**

5. Name the 4 components needed for a safe and effective weight loss program.

   a. _____

   b. _____

   c. _____

   d. _____

6. It is best to avoid weighing yourself when trying to lose weight. It will only get you discouraged. **True or False**

7. When trying to increase your water intake, any fluid that is non-caloric and caffeine-free can be "counted" as water. **True or False**

8. Calories are okay for a dieter as long as they are fat free. **True or False**

9. What is self-monitoring? _____

   _____

10. People tend to **over / under** estimate their food intake and **over/under** estimate their exercise intake. **(circle one)**

CHAPTER 2

NUTRITION BASICS AND THE FAT GRAM

2

Nutrition is the science of nourishment, and the study of nutrients and the processes by which organisms utilize them. The study of nutrition is based on concepts and principles that have been established and tested by the scientific method. Poor nutritional status can have a profound effect on physical capabilities and affects all functions of the human body. All living organisms need good nutrition to grow and function properly.

The nutrients in foods are:

Carbohydrates

Protein

Fat

Vitamins

Minerals

Water

Carbohydrate, protein, and fat provide the body **with calories**.
Vitamins, minerals, and water **provide no calories**.

Carbohydrate supplies the body with **4** calories per gram.
Protein supplies the body with **4** calories per gram.
Fat supplies the body with **9** calories per gram.

Carbohydrates

Carbohydrates are sugars and starches in food (usually called simple and complex carbohydrates). They provide energy and are the main fuel source in the body. Carbohydrates are found in the plant kingdom. Examples of complex carbohydrates include bread, rice, pasta, potatoes, cereals, and whole grains. Simple carbohydrates include fruits (fructose), and vegetables. Refined simple sugars include table sugar (sucrose), which is widely available in processed foods like candy, cakes, cookies, sodas, and fruit punch.

There are many different classifications of carbohydrates, and therefore, you may see many words that represent a carbohydrate or sugar. You do not need to memorize these names, but they are listed here for your information.

Carbohydrates	Chief Food Sources
Monosaccharides:	
Glucose	Fruits, honey, corn syrup
Fructose	Fruits, honey
Mannitol	Pineapple, olives, asparagus, sweet potatoes, carrots, and dietetic products
Sorbitol	Fruits, vegetables, dietetic products
Xylitol	Fruits, vegetables, cereals, mushroom, seaweed, dietetic chewing gum, and other dietetic products
Disaccharides:	
Sucrose	Cane and beet sugars, molasses, and maple syrup
Lactose	Milk and milk products
Maltose	Malt products, some breakfast cereals
Trehalose	Mushrooms, yeast
Polysaccharides:	
Cellulose and Hemicellulose	Stalks and leaves of vegetables, outer coverings of seeds
Pectins	Fruits
Gums and mucilages	Plant secretions and seeds
Inulin	Onions, garlic, and mushrooms
Mannosans	Legumes
Raffinose	Sugar beets, kidney beans, lentils, and navy beans
Stachyose	Beans
Pentosans	Fruits and gums
Starch and dextrins	Grains, vegetables (especially tubers and legumes)
Glycogen	Meat products and seafood

Dietary fiber

Fiber is composed of compounds of plant origin, such as the plant cell wall (cellulose, hemicellulose, and pectin), as well as the intracellular "cement" that holds plants together (gums and mucilages). Fiber is edible, but cannot be digested or absorbed by humans. Fiber itself is calorie free, however foods rich in fiber usually contain calories. Carbohydrates containing fiber include starches, breads, vegetables and fruit. Fiber will be discussed at length in Chapter 7.

Protein

Protein is made up of amino acids of which 20 have been recognized. Protein in the diet is broken down into amino acids during digestion. Amino acids are often referred to as the "building blocks" of protein. Protein is vital to the human body as it functions to build and repair tissue, provide a structural role in all body tissues, as well as formation of enzymes, hormones, and antibodies. Amino acids are either classified as essential or nonessential. Amino acids that can be produced in the body are called nonessential. There are eight amino acids that the body cannot manufacture and these are referred to as essential amino acids. They must be provided by food in the diet.

Food consumption surveys done by the United States Department of Agriculture (USDA) reveal that the average consumption of protein is quite generous. While protein deficiency is not a problem in the healthy American population, the World Health Organization estimates that 300 million children in the world have growth retardation due to protein malnutrition.

Complete proteins are foods containing large amounts of essential amino acids. Animal sources are complete proteins such as beef, chicken, fish, pork, eggs, milk, and cheese. Proteins that cannot supply the body with all the essential amino acids are known as incomplete proteins. These come from non-animal sources such as legumes (soybeans, peanuts, peas, beans, and lentils), grains and vegetables. Incomplete proteins are deficient in one or more of the essential amino acids.

A person who prefers foods of plant origin and avoids foods of animal origin is called a vegetarian. People choose vegetarianism for a variety of reasons such as religious, cultural, personal, or health reasons. Strict vegetarians, called vegans, live solely on plant foods. Other vegetarians eat animal products such as eggs, milk, and cheese, but no meat. Some vegetarians will include fish in their diet.

By combining two incomplete proteins, a complete protein can be obtained, if all essential amino acids will be provided by the combination of foods. Anyone choosing to avoid animal foods should seek the advice of a Registered Dietitian (R.D.) who can provide dietary counseling on meeting protein needs without animal foods (referred to as the concept of "complementary proteins").

Fat

Fat is made up of oils found in foods, and is stored in the body as triglycerides (otherwise known as body fat or adipose tissue). Fats include vegetable oils, butter, margarine, shortening, lard, and fats present in animal foods such as beef, chicken and dairy products. We need some fat in our diets. Our bodies use fat in many ways; we need it to manufacture antibodies to fight disease, fats are carriers of certain vitamins, fat deposits cushion and protect vital organs. Fat is also the body's insulation against environmental temperature changes.

Fat also lines and insulates our neurons (nerves) which allows all neural information to move through our brain and body. Without fat, we wouldn't be able to move a muscle or think a thought.

As you can see, fat should never be totally eliminated from the food we eat. Adults need a minimum daily intake of 15-25 grams of dietary fat per day to meet the body's needs. Children under the age of 2 should not have their dietary fat restricted, as it will interfere with their

growth and development (in other words, don't give skim milk to an infant or toddler).

There are three main types of fat in the foods we eat; polyunsaturated, monounsaturated, and saturated fat. Processed foods contain a combination of all three kinds of fat. Natural foods also contain all types of fat, but generally fall into these three categories.

Polyunsaturated: oils from plants (corn, safflower, etc.),certain fish, nuts.

Monounsaturated: vegetable and nut oils (olive, peanut, and canola).

Saturated: all meats and dairy products (except skim), tropical oils (coconut and palm).

Saturated fats are solid at room temperature and tend to raise blood cholesterol, which is harmful. However fat and cholesterol are not the same thing. We will discuss cholesterol in detail in chapter 7.

A healthy balance of carbohydrate, protein, and fat per day is:

Carbohydrate 55-60%

Protein 12-15%

Fat 30% or less

poly 10%

mono 10%

saturated 10%

Based on data collected in 1995 on food consumption patterns of Americans, total fat intake has decreased from 37 percent to 34 percent, with 12 percent consumed as saturated fat. Despite these positive changes in the American diet, the rate of obesity has continued to climb among all ages and ethnic groups. Clearly, Americans are getting the message about harmful effects of fat, yet calorie intakes have increased and exercise patterns are too low.

Regarding weight loss

Are fat calories worse for the weight watcher than carbohydrate and protein calories?

The answer is yes. The body metabolizes dietary fat differently than it processes carbohydrate and protein. Dietary fat (in our food) is very similar in composition to body fat, so it takes less energy to convert dietary fat to body fat (remember, 1 gram carbohydrate = 4 calories and 1 gram fat = 9 calories). Not only is it healthier to eat less fat, it is also a better way to control your weight. An important point to reemphasize is...

All calories that are consumed in excess will be converted to fat

The fat gram

By now you've heard about a fat gram, either in the media or by people around you. A fat gram is a number which tells us how much fat is in a food. By law, all packaged and processed foods must have a food label. The food label will tell you how many fat grams the food contains per serving. So how do we know how many fat grams we need per day?

General guidelines:

Males: 2000 calories X 30% fat (divided by 9) = 66 fat grams

Females: 1600 calories X 30% fat (divided by 9) = 50 fat grams

Sounds like a lot doesn't it? Remember, these are general guidelines and we will fine tune these in Chapter 4. Let's look at an average day to see how the fat adds up quickly (don't try to eat this at home!).

Breakfast:	2 cups coffee	0	grams
	2 tsp creamer	2	
	1 sausage biscuit	28	
	1 cup orange juice	0	
Lunch:	Cheeseburger, small	14	
	French fries, med	17	
	1 soda	0	
Snack:	1 soda	0	
Dinner:	5 ounce rib roast	39	
	1/2 cup mac and cheese	11	
	1 cup green beans w/1 tsp margarine	5	
	1 glass iced tea	0	
Snack:	1 bag microwave popcorn	24	
	1 apple	0	
		140	grams fat

Of course this was a hypothetical day, but you can see that fat grams can easily be tallied in a matter of minutes. Although manufactured products are required to have a food label (Chapter 6), many foods that you purchase will not have a food label such as raw meats (beef, chicken, fish), fruits, and vegetables.

Appendix A contains most common foods, and fast foods with fat grams listed. **Keep this handy!** After a period of time, you will have committed many foods to memory. It is definitely an educational experience! Some people find it easier to count fat than to count calories. In chapter 4, we will discuss managing your food plan.

Chapter 2 Study Questions

1. Three calorie containing nutrients found in food are:

   a. _____

   b. _____

   c. _____

2. List two types of carbohydrates and give 2 examples of each.

   a. _____

      1. _____

      2. _____

   b. _____

      1. _____

      2. _____

3. One gram of fat supplies the body with _____ calories.

4. Three types of fats are:

   a. _____

   b. _____

   c. _____

5. Children under the age of _____ should **not** have their fat intake restricted.

6. Saturated fats are found in what types of food? _____

7. A realistic goal for fat intake is _____ % of calories.

8. Men should have no more than _____ grams of fat per day, and women should have no more than _____ grams of fat per day.

9. One 8 ounce cup of 2% milk contains _____ fat grams (refer to Appendix A).

10. One ounce of cheddar cheese contains _____ fat grams (refer to Appendix A).

CHAPTER 3

EXERCISE TO LOSE WEIGHT

As Covert Bailey, biochemist and well-known lecturer in the study of obesity once said;

"The ultimate cure for obesity is exercise"

Enough said, on to Chapter 4...

But seriously, there is more to know about exercise for weight loss than you may think. Believe it or not, some people exercise ineffectively. Some people are working so hard at it, they are not getting anywhere at all.

A person's total daily caloric output is the sum total of the energy required in resting metabolism, thermal effect of food, and the calories burned during physical activity. Let's look at each of these factors and how it relates to weight loss.

Resting metabolism

Scientists would define metabolism as the chemical reactions that make the energy in foods available to the various physiological systems of the body. For instance, energy is required for muscular activity, the growth of skin, hair, nails, maintenance of body temperature, and even absorption of food from the intestinal tract. A way to measure the rate of metabolism is to measure the rate at which oxygen is utilized by the body. This is called basal metabolic rate, or simply BMR (the terms basal metabolic rate and resting metabolic rate are used interchangeably). It acts as "the body's thermostat," much like the thermostat in your house. Resting metabolic rate accounts for approximately 60-75 percent of daily caloric output.

Also affecting resting metabolism is the influence of body size. BMR is proportional to the surface area of the body, in that larger individuals burn more calories than smaller individuals for similar activities. Differences in body composition also affect BMR. Fat tissue is metabolically less active than muscle or lean body mass. Athletes with greater muscle development show a greater increase in metabolism over the non-athletic individual. Muscle accounts for approximately 20 percent of resting metabolism. Women, who have more fat in proportion to muscle than men, have metabolic rates 5-10 percent lower than men of the same weight and height. When based on the same amount of lean body mass, metabolic rates for men and women are similar. The same phenomenon is observed with aging. In general, as people age, lean body mass decreases with increases in fat-mass. A 2 percent decrease in BMR with every 10 years of life is usually observed through adulthood.

Putting this information together, we can conclude that in the overweight person, there is too much body fat and not enough lean muscle mass. How do we change the ratio of fat to muscle? Some people believe that we can turn fat into muscle and vice versa. This is **not** true. Muscle tissue is made up of long protein-like fibers, whereas fat tissue is round receptacles designed to store fat. Excess calories in the diet causes fat cells to grow in size as they store more fat. Conversely, fat cells shrink when you burn more calories than you eat. Muscle fibers increase when worked (hypertrophy), and muscle fibers decrease when not used (atrophy).

Physical activity

Physical activity can have the most profound effect on caloric output. On average, physical activity accounts for 15-30 percent of total caloric output. Most of us can generate substantial increases in metabolism (up to 10 times the resting value), during sustained exercise such as running and cycling. Bottom line: **the more physically active the person, the more active their metabolism.**

Thermal effect of food

An increase in metabolic rate is stimulated by eating due to the energy-requiring process of digesting, absorbing, and metabolizing the various nutrients. This accounts for approximately 10 percent of total caloric output. This process is sometimes referred to as the "specific dynamic action" or "dietary-induced thermogenesis." It reaches a maximum within 1 hour after a meal. Therefore, skipping meals tends to decrease metabolic rate so you burn calories at a lower rate (in other words, you lower your thermostat). Not eating enough can be as bad as eating too much! (we will discuss this concept more in Chapter 4).

NUTRIENTS AND THEIR ROLE DURING EXERCISE

Carbohydrate

Glucose is the end product of carbohydrate digestion. The metabolism of glucose produces energy for the body. Glucose that is not needed for energy is stored in the form of glycogen; a source of potential energy that is readily available when needed. Most glycogen is stored in the liver and muscle cells. When these cells are saturated with glycogen, the excess glucose is converted into fat and is stored as fat tissue.

The utilization of glucose for energy is a complex system. For our purposes, we will focus on **anaerobic** and **aerobic** metabolism. Anaerobic means in the absence of oxygen. This energy system breaks down glucose for energy mainly during high intensity exercise that lasts between 10 to 90 seconds (400 meter run, 100 meter swim, longer sprint, wrestling, weight lifting, fencing).

During aerobic metabolism, both glucose and fat can be broken down in the presence of oxygen. This will predominate during exercise lasting longer than 2 minutes. Longer duration exercise promotes increased use of fat (jogging, running, brisk walking, cross-country skiing, biking).

We are always utilizing some combination of carbohydrate and fat, both at work and during exercise. The major determinants of what proportion of fat vs. carbohydrate we use are:

1. availability of carbohydrate (limited supply) and fat (virtually unlimited!)
2. intensity of exercise
3. duration of exercise
4. cardiovascular fitness level
   (Fit people are better at using fat as a source of fuel. Also, exercise has a glycogen-sparing effect. The more we exercise, the more we tend to switch over to using fat for fuel rather than our glycogen stores).

Fat

During light and moderate exercise, a combination of fat and glucose is used for energy. Fat utilization increases over time with more fat being burned after 30 minutes of exercise. <u>This is an important point</u>. To burn fat, you need to do <u>moderate</u> exercise in periods of 30 minutes or greater.

Protein

Very little protein is used as an energy source during exercise. Protein may be used as an energy source **if** a person is dieting too severely. When you restrict calorie intake to lose weight, the body senses starvation and begins a "survival" reaction. Part of the process will take a body protein (like muscle tissue), break it down and turn it into glucose in the liver. **Strict** dieting therefore, can lead to a loss of lean muscle tissue, not just fat loss. This is why starvation diets don't work. The only way to avoid this is to restrict calories moderately.

On the flip side of this, excess protein in the diet can be converted to sugar and then stored as fat. Many bodybuilders make this mistake by consuming excess protein in the form of protein powders and supplements, thinking they need protein to build muscle (protein supplements can lead to kidney damage if taken in large quantities). Only working a muscle with weights will cause a muscle to grow!

Types of exercise:

1. Aerobic exercise
2. Strength training

Aerobic exercise is any activity which requires large amounts of oxygen, uses large muscle groups, is rhythmic, and can be sustained over time. It increases the body's demand for oxygen, thereby adding to the workload of the heart and lungs which increases the heart rate. It strengthens the cardiovascular system and allows the body to burn fat for energy.

Examples of aerobic exercise are running, jogging, walking, swimming, cycling, cross-country skiing, rowing, and aerobic dance. Regardless of what you choose to do, the **frequency** and **duration** are most important. For fitness, the experts recommend aerobic activity a minimum of three times per week. If weight loss is your goal, you should to do it **five times** per week. Duration needs to be at least **30 minutes** in duration, but for optimal fat loss, 40-45 minutes of exercise is more effective.

How can I tell if exercise is too intense or vigorous?

There are two ways to determine how intense you are exercising. One is the **target heart rate method** and the other is the **Perceived Exertion Scale**. While target heart rate is a measure of exercise intensity based on your pulse, the Perceived Exertion Scale is a subjective measure based on how you feel.

The target heart rate method is commonly used to measure exercise intensity, and relies on checking heart rate (called pulse). Target heart rate is defined as 65-80 percent of your maximum heart rate. This will provide the desired effect of aerobic fitness and fat burning by exercising in this training zone during exercise. Many people make the mistake of believing that aerobic fitness is achieved by raising heart rate. This is not true. Aerobic fitness is achieved by increased oxygen consumption over time, but heart rate is a convenient indicator of oxygen consumption. The following equations are recommended by the American College of Sports Medicine:

Males:

205 - (1/2 age) = _____

_____ X .65 = _____

_____ X .80 = _____

Females:

220 - age = _____

_____ X .65 = _____

_____ X .80 = _____

Example: 32 year old male

205 - 16 = 189

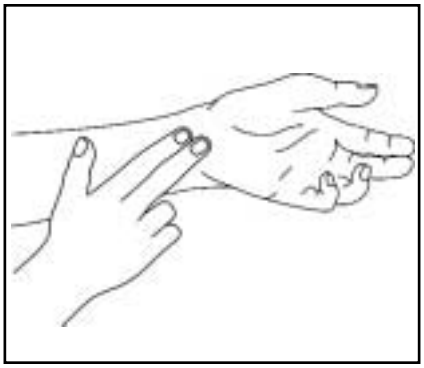
189 X .65 = 123

189 X .80 = 151

Target heart rate for 32 year old male is 123 - 151 beats per minute.

You may be thinking, "How am I supposed to check this while I am exercising?" It's simple. All you will need is a watch with a second hand. Count your pulse for 15 seconds and multiply by 4. Your pulse can be found in 2 places. A carotid pulse can be found by running 2 fingers along the side of your neck from the back of your ear to the side of your Adam's apple.

A radial pulse can be found by placing 2 fingers on the inside of your wrist (at the base of the thumb).



Example: Our 32 year old Sailor has been jogging for 10 minutes. He wants to make sure that he is exercising in his zone. He stops jogging, counts his pulse for 15 seconds, and resumes jogging. He counted "35" beats, so he multiplies by "4" and gets 140 beats per minute which is his target zone.

Another good way to do this, is to figure out your target heart rate and divide by 4 ahead of time. This way you don't have to multiply by 4 when exercising (if the 15 second count is low, speed up exercise, or if it is too high, slow down).

Question:

If exercise is supposed to be continuous, why do you stop to check your pulse?

Answer:

Most people cannot feel a pulse and exercise at the same time (they usually count their feet hitting the ground instead). You may stop exercising for brief periods as your heart rate will not drop significantly in the 15 seconds you stop for. Remember to resume exercise as soon as you have counted.

Question:

What if the pulse rate for the individual was 195 beats per minute?

Answer:

They need to SLOW DOWN. If jogging, change to a brisk walk and recheck after a few minutes.

Question:

I can't jog for a full 30-40 minute period, but my heart rate doesn't get high enough by just walking.

Answer:

Some people need to do a combination of walking and jogging. For instance, jog for 2 minutes, walk for 3 minutes, jog for 2 minutes, walk for 3 minutes, etc. After a person becomes more physically conditioned, a longer jogging period can be attempted with shorter walking periods. Remember to check heart rate periodically to monitor progress.

Question:

I don't think I can figure this out. This is too much of a bother.

Answer:

In the beginning, checking heart rate may require some thinking and you may feel silly. After daily practice, checking heart rate will become automatic with every PT session. You might want to invest in a heart rate monitor. These are available at most sporting good stores and military exchanges. Heart rate monitors consist of a one piece, lightweight waterproof chest transmitter with a wrist receiver. The chest transmitter monitors your heart rate to electrocardiograph (EKG) accuracy. The wrist receiver picks up the signal and displays your heart rate on your wrist watch.

Heart rate monitors range from very basic heart rate readings to high-tech memory capability with interface to a personal computer for further analysis and storage. The price of these monitors has come down in recent years, but the price is generally more expensive than a regular wrist watch. The high-tech monitors, which are generally more expensive, are used primarily for athletic training, coaching, and research.

The Perceived Exertion Scale is based on studies that show that our own subjective estimate of effort (how hard we are exercising) is highly correlated to actual heart rate, oxygen consumption, and lactic acid produced during exercise. In layman's terms, we should be listening to ourselves during exercise. If the exercise feels too difficult, it probably is. The scale slides with you as you become more physically conditioned. For instance, a fairly out of shape individual may find a 8.5 mile run pace as "very hard", while competitive runner may find the same pace "fairly light". In other words, the scale adapts no matter what shape you are in.

Perceived Exertion Scale

How does the exercise feel?	Rating
	6
Very, very light	7
	8
Very light	9
	10
Fairly light	11
	12
Somewhat hard	13
	14
Hard	15
	16
Very hard	17
	18
Very, very hard	19
	20

Note: Rating X 10 is approximately equal to the heart rate (for example, "Hard" = 15 X 10 or 150 heart rate).

Using this scale with our 32-year old Sailor, as long as his exercise effort is at the "somewhat hard" to "hard" level, he should be in his target heart rate zone. You'll need to remember to ask yourself periodically during your exercise sessions "how do I feel?"

If this all seems to complicated, you are your own best judge when it comes to your exercise sessions. Some general rules:

1. You should be able to carry on a conversation while exercising.
2. You should not be gasping for air during exercise.
3. Exercise should not leave you exhausted.

Warm-up, stretching, and cool-down

A warm-up is crucial as warm muscles are less likely to tear (muscle strain). A warm-up can include a 5 minute jog in place or a brisk walk. After warm-up, stretch. Stretch slowly, and never bounce. Never stretch to the point of pain. A stretch should last 20-45 seconds. Your command fitness coordinator can assist you in good stretching exercises. A cool-down period is also important, as you want your heart rate to gradually come down to facilitate equal blood distribution to prevent blood pooling and fainting.

Strength training

What exactly is strength training? Some people call it weight lifting. Strength training is based on the principle that muscles adapt to the stress or resistance placed upon them. Why are we discussing this here with weight loss? Strength training can significantly increase your progress with fat reduction in one simple concept: **More muscle = higher resting metabolism!**

Strength training can be accomplished a couple of ways:

1. Using your body as weight resistance (sit-ups, push-ups)
2. Use weight machines or free weights in a gym

For the person who is new to strength training, start out with exercises that use your body weight as resistance, or begin with some of the resistance machines available at your MWR gym. Beginning a strength training program using free weights may increase the risk of injury, unless certified trainers and careful supervision is available. A program using resistance machines (such as Nautilus or Life Fitness), 2-3 times per week for 20-30 minutes is a nice addition to a PT program designed for fat loss and toning.

The exercise log

The exercise log is an important tool for you to keep track of your progress (it is very hard on a Friday to remember what you did on Monday!). The goal for frequency of exercise is no less than 3 times per week, but research shows better results with 5 days of week of exercise with 40-45 minutes duration, and strength training 2-3 sessions per week.

BARRIERS TO EXERCISE

"I don't have the time"

The most common excuse for not exercising regularly is **no time**. Most people tend to find time for the things they enjoy. Does your work, family, travel, etc. prevent you from keeping up your exercise goals? This is when we need to work in small amounts of exercise wherever we can. Although we have stressed that 40-45 minutes of aerobic activity is optimal for weight loss, other small bursts of physical activity add up and are relevant. They are not meant to replace cardiovascular conditioning, but do help by using calories. Let's illustrate this:

> In 1980, a study done at the University of Pennsylvania School of Medicine observed the use of stairs vs. escalators in places where they were close to each other (ie. subway stations, airports, shopping malls). They found that overweight individuals were less likely to take the stairs. They also placed a poster at the bottom of the steps to remind people of the cardiovascular benefits of taking the stairs. The researchers found that twice as many lean individuals used the stairs (after being reminded by the poster) while a small percentage of overweight individuals changed their habits even when reminded.

What does this tell us? It tells us that we can develop better habits in our lives to include "movement" in a society where everything we use is automated. How many times do you drive around the parking lot looking for that close space? Why not walk a little further? Do you live a few miles from work? How about riding a bike on good weather days? Think about ways to sneak exercise into your daily routine.

Don't let yourself be talked into common excuses. If these sound familiar to you, think about resolving your relationship with exercise. How important is it in your life? Why are you exercising? What to expect exercise to do for you? What motivates you to exercise?

"It's too cold"

Most of us live in variable climates which often makes it difficult to keep up our exercise routine. Trying to go out for your daily jog with overcast skies and temperatures in the low 30's can de-motivate even the most faithful runner. Keep in mind that you wouldn't avoid building a snowman, sledding, or snow skiing just because it was cold outside. You would just dress appropriately. The same holds true for exercise in cold weather

The most important thing to exercising in the cold is proper cold weather attire. A rule of thumb is one light layer of clothing for every 10-15 degrees below 70. Fabrics such as polypropylene absorb moisture while keeping you warm and dry. Cotton, on the other hand, gets wet and stays wet with perspiration. Polypropylene is best worn next to the skin under a waterproof, windproof outer layer such as Goretex. If waterproof attire is not needed, a fabric such as fleece provides warmth without weight. A hat is essential in cold weather as heat is rapidly lost from the head. Gloves or mittens made of wool, fleece, or polypropylene are also a necessity in cold temperatures.

After you are suited up and ready to head out, what if you still don't feel like it? (as mentioned earlier, cold dreary weather can be a de-motivator). Consider exercising with a friend or shipmate. A buddy system can help in cold weather.

"It's too hot"

If your average summer day is 89 degrees and 90 percent humidity by 9:00 am, then you have probably said "It's too hot" a few times. Hot weather can be very risky, even life-threatening if safety precautions are not followed. Dehydration and heat stroke are the main concerns. Proper fluid intake is essential. Don't wait until you are dehydrated to increase your fluids. In addition to being well hydrated before you head out, you'll need 1/2 cup water replacement every 15 minutes.

Wear loose fitting, comfortable fabrics that are breathable such as cotton, and avoid dark colors. Wear only one layer of clothing such as a T-shirt and shorts. Exercising in a plastic suit is dangerous, as they cause profuse sweating and loss of vital fluid, and prevent necessary cooling of the body.

Avoid exercising in the middle of the day when temperatures are the hottest. Plan your exercise in the early morning or evening. Pay attention to the various flags, black and red, which are flown to indicate heat index and to control physical activity. These flags indicate the wet bulb globe temperature (WBGT) which is an index of a combination of readings from three temperatures: dry, humid, and radiant heat. These three temperatures in combination provide a more accurate reading of heat stress intensity.

Red flag (WBGT of 88-90 degrees) indicates physical activity is advised only for members who have been working out in similar heat for a period of 2-6 weeks or more.

Black flag (WBGT of 90 degrees or higher) which indicates vigorous outdoor exercise, regardless of conditioning or heat acclimatization, is not advisable. In some areas of the country, hot humid conditions increase the risk from air pollution. No amount of acclimatization can make this safe.

Still too hot? Add water to your routine. Swimming, water-walking provide a cool alternative to hot weather. Another option is exercising in an air conditioned gym or fitness center.

Staying motivated

Some people say it is hard staying motivated to keep exercising. One problem that we see is boredom doing the same exercise over and over on a daily basis. For example:

> John uses the treadmill at the gym Monday, Wednesday, Thursday, and Friday for 25 minutes. He would like to do longer, but he is so bored, he decides to give up all together (or finds projects at work and home that prevent him from getting to the gym).

When it comes to exercise, variety is the key. Athletes call it cross-training. You may think, "but I'm not an athlete, how can I cross-train?" Cross-training is simply varying your routine to work different muscle groups as well as maintaining variety. For instance, running and cycling use the same muscles in different ways. Another example:

> Susan jogs on Monday and Wednesday, does aerobics on Tuesday and Thursday and walks or bikes with her family on the weekends.

Being outdoors is a great way to vary your routine; jog or bike a different route. Top athletes vary their routines often to prevent the boredom that comes with repetition.

One final word

What is the best exercise? It is one you can continue for a long period of time-A LIFETIME!

Chapter 3 Study Questions

1. In your own words, define metabolism _____

   _____

2. What 3 factors account for a person's total caloric output?

   a. _____

   b. _____

   c. _____

3. Muscle accounts for _____ % of metabolism.

4. In your own words, what is the thermal effect of food?

   _____

5. Intense physical exercise uses _____ as the primary fuel source.

6. Light and moderate exercise uses _____ as the primary fuel source.

7. For optimal fat loss and weight control, define the goals of exercise.

   a. _____

   b. _____

   c. _____

   d. _____

8. Target heart rate can be monitored by counting your pulse for _____ seconds and adding a zero.

9. If strength training is not aerobic, why is it important for weight loss?

10. What is cross-training?

CHAPTER 4

CALORIES AND THE EXCHANGE SYSTEM

Believe it or not, being successful at weight loss is all about calories!

1 pound FAT TISSUE = 3500 Calories

When someone consumes 3500 Calories more than they burn, they gain 1 pound of fat. When someone uses up 3500 Calories more than taken in, they lose about 1 pound of fat.

So what exactly is a calorie?

A calorie is a measure of energy available to the body. With food, we talk about the amount of calories something contains. With exercise, we talk about how many calories we burn. To lose weight, we need to have a calorie **deficit**, which means you burn more calories than you take in.

Intake = 2000 Cal

Output = 3000 Cal

= Weight loss

Intake = 4000 Cal

Output = 2000 Cal

= Weight gain

Intake = 3000 Cal

Output = 3000 Cal

= No change

With this concept in mind, let's determine your calories needed in a day. We first start by determining your target body weight. This is not the weight you need to obtain for Navy height/weight standards. Navy height/weight standards represent **maximum** allowable weight and not necessarily the healthiest weight goal.

Step 1: Determine target weight

The following table represents optimal weight for fitness, health, and uniform appearance for most people. A good, healthy body fat percentage for males is 14 - 16 percent, and for females is 24 - 26 percent.

Height should be measured in stocking feet, preferably standing against a wall with a horizontal bar or rectangular block of wood lowered to rest flat on the top of the head (self-reported heights are frequently inaccurate since adults begin losing height after age 40).

TARGET WEIGHT

Height	Males	Females
58	103	110
59	108	114
60	113	117
61	118	121
62	123	124
63	128	128
64	133	132
65	138	135
66	143	139
67	148	142
68	153	146
69	158	150
70	163	153
71	168	157
72	172	160
73	177	164
74	182	167
75	187	171
76	192	175
77	197	179
78	202	183
79	207	187
80	212	191

Since we have not made an allowance for frame size (small, medium, or large), this "target weight" may not be the weight that you want to achieve. You may need to weigh a little more or a little less depending on your frame size (generally, 10 percent is subtracted for small frame, and 10 percent is added for large frame individuals).

Your target weight _____

Step 2: Determine calories needed to achieve target weight

First, change pounds (lbs) into kilograms (kgs)

Your target weight in lbs divided by 2.2 = kgs _____

Target weight (kgs) X 25 = _____ (calories needed per day for weight loss)

Target weight (kgs) X 30 = _____ (calories needed per day for weight maintenance)

After determining calories, we can go one step further and figure fat grams.

Step 3: Determine fat calories

Calories needed daily X 30% = _____ (maximum fat calories)

X 25% = _____

X 20% = _____ (minimum fat calories)

Step 4: Translate fat calories into fat grams

Fat calories divided by 9 = Grams fat per day

Your personal fat budget: _____ grams per day

Notice that a range is given for percent of calories from fat. There is no "rule" that fat calories need to be any less than 30 percent to lose weight, but many people choose to keep fat grams around 20-25 percent of total calories. Keeping fat grams less than 20 percent is unrealistic, possibly unhealthy, and is not recommended.

One way to keep track of your calories is to write down what you eat and simply tally calories up at the end of the day. This tends to become a time consuming effort, especially if you are not sure of calorie content of food. Also, this does not ensure that you will get a healthy distribution of nutrients.

We will illustrate 2 methods of meal planning. Both are equally effective. Choose that plan that appeals to you.

1. The Exchange System
2. The Food Guide Pyramid

The Exchange System

Originally designed for diabetics, the exchange system is a widely used method of meal planning. Foods are divided into six groups or "exchanges" on the basis of their carbohydrate, protein, and fat content. Similar foods are placed in the same group. Many commercial weight loss programs use exchanges.

The six exchange groups are:

STARCH GROUP
MEAT GROUP
VEGETABLE GROUP
FRUIT GROUP
MILK GROUP
FAT GROUP

Starch group - each exchange = 80 calories

1/2 cup Pasta or barley
1/3 cup cooked Rice, beans or peas
1 small Potato (or 1/2 cup mashed)
1/2 cup starchy Vegetables (corn, peas, lima beans, winter squash)
1 slice Bread
1/2 English muffin, bagel, or hamburger/hot dog bun
1/2 cup cooked Cereal (oatmeal, grits)
3/4 cup dry Cereal, unsweetened
6 Crackers, saltine-type
3/4 oz Pretzels
8 Animal crackers
3 cups Popcorn, butterless (popped, no fat added)

Starch foods prepared with fat (add 1 fat exchange)

1 Biscuit, 2 1/2 inch across
1/2 cup Chow mein noodles
1 (2 oz) Corn bread, 2 inch cube
6 Cracker, round butter type
10 French fried potatoes, 2 inch to 3 1/2 inch long
1 Muffin, small, plain
2 Pancake, 4 inch across
1/4 cup Stuffing, bread (prepared)
2 Taco shell, 6 inch across
1 Waffle, 4 1/2 inch square
4-6 Whole-wheat crackers with fat added

Meat group

(Meat and meat substitutes include a wide variety of choices ranging from very lean or high-fat. The protein content per ounce is approximately the same for all categories at 7 grams of protein, but it is the fat content that is different)

* indicates a high sodium food

Very lean meat (contains 0-1 grams fat, 35 calories)

1 oz Chicken or turkey, white meat, no skin
1 oz Cornish hen, no skin
1 oz Fresh or frozen cod, flounder, haddock, halibut, trout; tuna fresh or canned in water
1 oz Clams, crab, lobster, scallops, shrimp, imitation shellfish
1 oz Duck or pheasant (no skin), venison, buffalo, ostrich
1 oz Processed sandwich meats with 1 gram or less fat per ounce, such as deli thin, shaved meats, * chipped beef, turkey ham
2 Egg whites
1/4 cup Egg substitutes, plain
* 1 oz Hot dogs with 1 gram or less fat per ounce
1 oz Kidney (high in cholesterol)
1 oz Sausage with 1 gram or less fat per ounce
(counts as one very lean meat and one starch exchange)
1/2 cup Dried beans, peas, lentils (cooked)

Lean meat (contains 3 grams fat, 55 calories)

1 oz Beef: USDA Select or Choice grades of lean beef trimmed of fat, such as round, sirloin, and flank steak; tenderloin; roast (rib, chuck, or rump), steak (T-bone, porterhouse, cubed, ground round

1 oz Pork: Lean pork, such as fresh ham; canned, cured, or boiled ham; * Canadian bacon; tenderloin, center, loin chop

1 oz Veal, lean chop, roast
1 oz Lamb, roast, chop, leg
1 oz Poultry: Chicken, turkey (dark meat, no skin), chicken white meat (with skin), domestic duck or goose (well-drained of fat, no skin)
6 medium Oysters
1 oz Salmon, fresh or canned; catfish
1 oz Tuna, canned in oil, drained
1 oz Goose, no skin; rabbit
1/4 cup 4.5 percent fat cottage cheese
2 Tbs Grated Parmesan
1 oz Cheeses with 3 grams of less fat per ounce
* 1 1/2 oz Hot dogs with 3 grams or less fat per ounce
1 oz Processed sandwich meat with 3 grams or less fat per ounce, such as turkey pastrami or kielbasa
1 oz Liver, heart (high in cholesterol)

Medium-fat meat (contains 5 grams fat, 75 calories)

1 oz Beef: Most beef products fall into this category (ground beef, meatloaf, corned beef, short ribs, Prime grades of meat trimmed of fat, such as prime rib
1 oz Pork: Top loin, chop, Boston butt, cutlet
1 oz Veal: cutlet, ground or cubed, unbreaded
1 oz Poultry: Chicken dark meat (with skin), ground turkey or ground chicken, fried chicken (with skin)
1 oz Fish: Any fried fish product
1 oz Feta or mozzarella cheese
1/4 cup Ricotta cheese
1 Egg (high in cholesterol, limit to 3 per week)
1 oz Sausage with 5 grams of less fat per ounce
1 cup Soy milk
4 oz or 1/2 cup Tofu

High-fat meat (contains 8 grams of fat, 100 calories)

1 oz pork spareribs, ground pork, or pork sausage
* 1 oz regular cheese such as American, cheddar, Monterey Jack, or Swiss
1 oz processed sandwich meats with 8 grams or less fat per ounce, such as bologna, pimento loaf, or salami
1 oz sausage, such as bratwurst, Italian, knockwurst, Polish, or smoked
* 1 Hot dog, turkey or chicken
3 slices bacon

Count as one high-fat meat plus one fat exchange:

1 hot dog, beef, pork, or combination
2 Tbs peanut butter (contains unsaturated fat)

Vegetable group - each exchange = 25 calories

1/2 cup cooked vegetables
1 cup raw vegetables
* 1/2 cup tomato/vegetable juice

Fruit group - each exchange = 60 calories

1 fresh medium fruit
1 cup berries or melon
1/2 cup canned fruit in juice or without sugar
1/2 fruit juice
1/4 cup dried fruit
1/2 banana

Milk group - each exchange = 90 calories

1 cup skim milk
1 cup 1% milk
8 ounce carton non-fat or 1% yogurt
(**add 1 fat exchange if**: 1 cup 2% milk
8 ounce carton low-fat yogurt)

Fat group - each exchange = 45 calories

1 tsp margarine, butter, oil, or mayonnaise
2 tsp diet margarine or diet mayonnaise
1 Tbs salad dressing
* 2 Tbs reduced-calorie salad dressing

Free foods -- foods that contain less than 20 calories per serving can be eaten without counting into daily total.

Fat-free or Reduced-fat foods

1 Tbs cream cheese, fat free
1 Tbs creamers, nondairy, liquid
2 tsp creamers, nondairy, powdered
1 Tbs mayonnaise, fat-free
1 tsp mayonnaise, reduced-fat
4 Tbs margarine, fat-free
1 tsp margarine, reduced-fat
nonstick cooking spray
1 Tbs salad dressing, fat-free
2 Tbs salad dressing, fat-free, Italian
1/2 cup salsa
1 Tbs sour cream, fat-free, reduced-fat
2 Tbs shipped topping, regular or light

Sugar-free or Low-sugar foods

1 candy, hard, sugar-free
gelatin dessert, sugar-free
gelatin, unflavored
gum, sugar-free
2 tsp jam or jelly, low-sugar or light
2 Tbs syrup, sugar-free
sugar substitutes

Sugar substitutes, alternative, or replacements that are approved by the Food and Drug Administration (FDA) are safe to use.

Common brand names include:

Equal (aspartame)
Sprinkle Sweet (saccharin)
Sweet One (acesulfame K)
Sweet-10 (saccharin)
Sugar Twin (saccharin)
Sweet 'n Low (saccharin)

Drinks

*1 Tbs bouillon, broth, consomme'
1 Tbs bouillon, broth, low-sodium
1 Tbs cocoa powder, unsweetened
coffee
club soda
diet soft drinks, sugar-free
drink mixes, sugar-free
tea
tonic water, sugar-free

Condiments

1 Tbs catsup
horseradish
lemon juice
lime juice
mustard
* 1 1/2 large pickles, dill
* soy sauce, regular or light
1 Tbs taco sauce
vinegar

Seasonings

flavoring extracts
garlic
herbs, fresh or dried
pimento
spices
hot pepper sauce
wine, used in cooking
worcestershire sauce
(seasonings containing high amounts of sodium, but are calorie-free include garlic salt, celery salt, and lemon pepper)

Combination foods - (do not fit into any <u>one</u> exchange group)

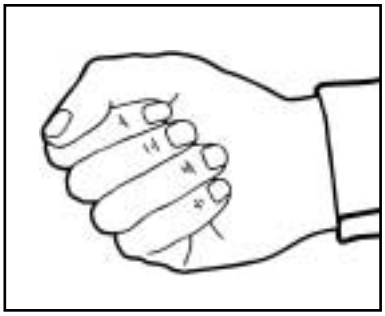
casseroles, homemade	1 cup = 2 starch, 2 meat, 1 fat
cheese pizza	2 slices = 2 starch, 1 meat, 1 fat
tuna noodle casserole, macaroni and cheese, chili with beans	1 cup = 2 starch, 2 medium-fat meats
pot pie	1 (7 oz) = 2 starch, 1 medium-fat meat, 4 fats
bean soup	1 cup = 1 starch, 1 very-lean meat
cream soup	1 cup = 1 starch, 1 fat
split pea soup	1/2 cup = 1 starch
tomato soup	1 cup = 1 starch
vegetable soup	1 cup = 1 starch

A word about measuring

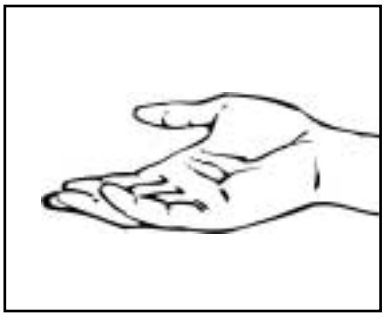
Measuring is essential for portion control. For instance, some people eat the right foods, they just eat too much. Most of us just place food on our plates without realizing how much we actually eat. Measuring cups, spoons, and a plastic kitchen scale are recommended. Starches and milk are measured with measuring cups, whereas meat is weighed on a scale (after cooking).

If unable to measure, here are some guidelines:

1 cup = 1 fist

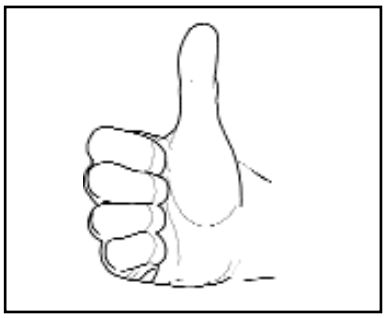


3 ounces meat, poultry, or fish = woman's palm

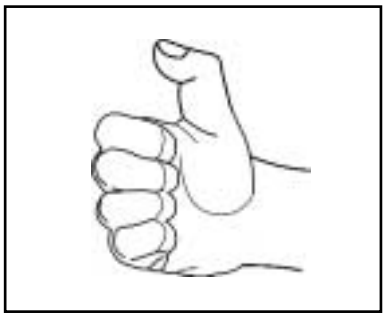


or a deck of cards

1 Thumb = 1 ounce



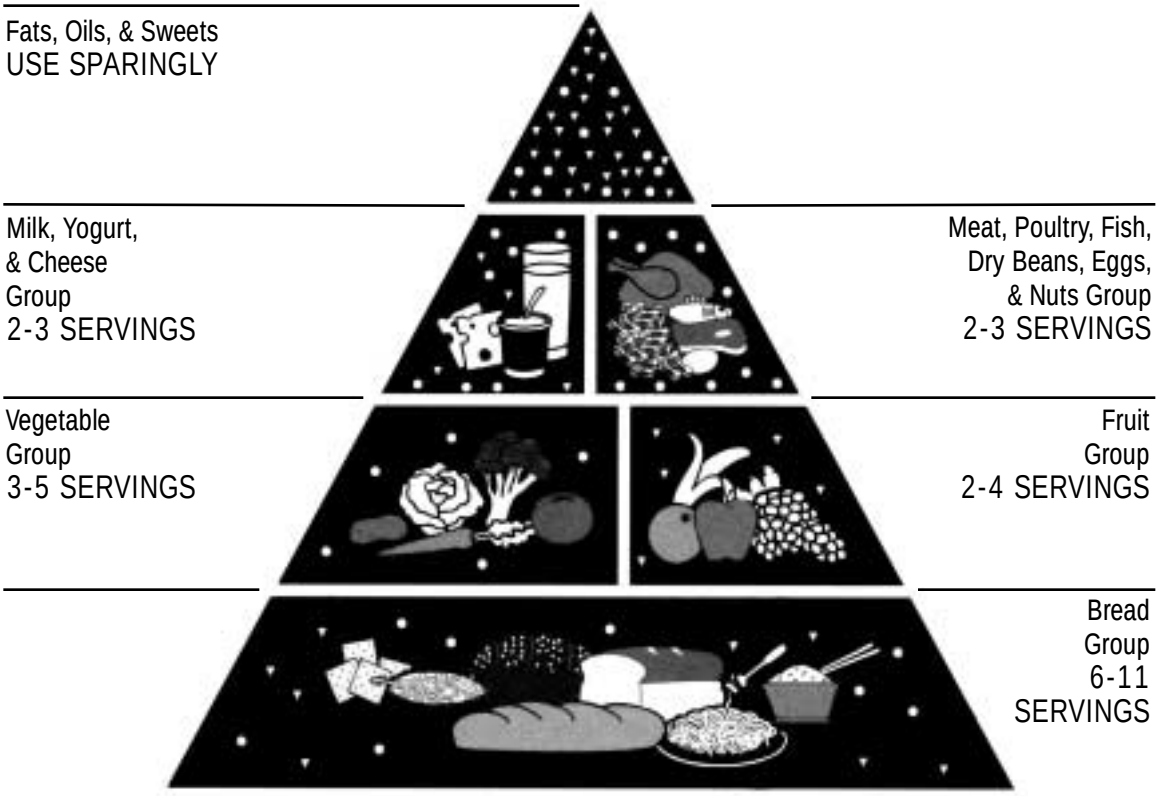
1 Thumb Tip = 1 teaspoon



Now that you know your calorie level, how many exchanges can you have?

	1200	1400	1500	1600	1800	2000	2200	2400
starch	5	6	7	8	9	0	11	12
meat	4	5	5	5	6	6	7	8
vegetable	2	2	2	2	3	4	4	4
fruit	3	4	4	4	4	4	4	4
milk	2	2	2	2	2	3	3	3
fat	2	2	3	3	3	4	4	5

Some people may find the concept of exchanges too confusing. If this sounds like you, you may want to try using the food guide pyramid to plan your meals. This still incorporates the concept of exchanges (portion control), but is more visual and emphasizes what foods to increase in your diet and what foods to limit.



What counts as a serving?

Breads, Cereals, Rice, and Pasta

1 slice of bread
1/2 cup of cooked rice or pasta
1/2 cup of cooked cereal
1 ounce of ready-to-eat cereal

Vegetables

1/2 cup of chopped raw or cooked vegetable
1 cup of leafy raw vegetable

Fruits

1 piece of fruit or melon wedge
3/4 cup of juice
1/2 cup of canned fruit
1/4 cup of dried fruit

Milk, Yogurt, and Cheese

1 cup of milk or yogurt
1 1/2 to 2 ounces of cheese

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

2 1/2 to 3 ounces of cooked lean meat, poultry, and fish
Count 1/2 cup of cooked beans, or 1 egg, or 2 tablespoon of peanut butter as 1 ounce of lean meat (about 1/3 serving)

Fats, Oils, and Sweets

Limit Calories from these for weight loss

Suggested servings for the Food Guide Pyramid:

Total calories	Bread group	Vegetable group	Fruit group	Milk group	Meat group	Fat grams
1200	5	3	2	2	2	35
1400	6	4	3	2	2	40
1600	7	5	4	2	2	45
1800	8	5	4	2	3	50
2000	10	5	4	2	3	55
2200	11	5	4	3	3	60
2400	12	6	5	3	3	65

As you can see, the food guide pyramid is just a variation of the exchange system. Choose the method of portion control and meal planning that appeals to you.

Ideally, calories should be spread evenly throughout the day. You may choose to eat 3, 4, 5, or 6 times per day. There is no one best way. Think about your lifestyle, work schedule, family schedule, and decide what works best for you.

The one pattern you **should not** follow is one many Navy service members choose which is eating NO breakfast, maybe lunch (or maybe not), and the bulk of daily calories consumed from 4 p.m. and on into the evening. Research shows that approximately 90% of people with a weight problem skip at least one or two meals daily, with breakfast being the most frequently missed. In doing this, 2 things occur:

1) Metabolism will lower due to the body's survival mechanism sometimes called "anti-starvation" mechanism. Latest research shows a temporary increase in metabolism of up to 50 percent after eating breakfast.

2) People will generally make up for the calories they missed by overeating in the evening.

To illustrate this point, we can take an excerpt from Covert Bailey's Fit or Fat:

"When the body is deprived of food, the body is stressed and tries to lay down extra fat for reserve. In other words, **fasting encourages the body to become fatter**. A study of rats illustrates this phenomenon. Fifty rats were separated into two groups. Both groups were given exactly the same daily quantity of food. Group A rats ("Nibblers") could eat the food all day long, but Group B rats were allowed only a half-hour to consume all the food ("One Big Mealers"). It took the One Big Mealers a little while to get used to it, but once

they realized that no more chow was coming for twenty-three and half hours, they gobbled up all of their allotment in the half hour. The amount of food was small, and both groups lost about the same amount of weight.

At the end of six weeks, the rats were allowed to return to a normal amount of food, and the One Big Mealers were allowed to be Nibblers again. Both groups gained weight, but the One Big Mealers gained more weight. The researchers analyzed the enzymes in rats that are responsible for the depositing of fat. The Nibblers had no increase in fat-depositing enzymes. In contrast, these enzymes in the One Big Mealers had increased nearly ten-fold during the low-calorie diet period. Even though the rats were losing weight because their total caloric intake was low, their bodies seemed to be saying, 'the minute more food comes along, I'm ready to lay down extra fat just in case this stress happens to me again!'"

Bottom line

Don't skip meals, especially breakfast. A common excuse for skipping breakfast is, NO TIME. If you are one of those people who are rushed in the morning, PLAN AHEAD! Breakfast does not have to be a big production, but it does require some advance thinking, usually the night before. Many people eat something they can pack and carry with them to eat at work after morning PT. IF YOU HAVE TIME TO DRINK A CUP OF COFFEE, YOU HAVE TIME TO EAT BREAKFAST. Good examples are:

fruit
yogurt
bagel
sandwich
cereal and milk
low-fat or fat free breakfast bars
Low-fat or fat free muffins

(More ideas will be discussed in Chapters 8 and 9).

So which is more important, calories or fat? The answer is BOTH. Calories count--no matter what form they come in:

7 Big Macs = 3500 stalks of celery

but to optimize body fat loss, make sure your calories are low fat.

Chapter 4 Study Questions

1. One pound of fat equals _____ calories.

2. My personal calorie level is _____ and my fat allowance is _____

3. In your own words, what is the exchange system?

_____

_____

4. Name the 6 exchange groups?

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

5. Measuring foods and beverages is important for _____

_____

6. If unable to measure, 3 ounces of meat, poultry, or fish is equivalent to _____

   or _____

7. One cup is equivalent to _____

8. Skipping meals, especially breakfast is not recommended because _____

_____

_____

9. A free food can be eaten anytime. **True or False**

10. My exchange plan is:

_____ starch

_____ meat

_____ vegetable

_____ fruit

_____ milk

_____ fat

CHAPTER 5

BEHAVIOR MODIFICATION

5

Now that we've discussed the "mechanics" of weight loss, let's discuss the **why**. A lot of people know what it takes to lose weight, but when it comes to actually following through, they have a problem. This all has to do with behavior--and why we do the things we do.

Webster's definition of behavior is "the way a person behaves or acts; an organism's response to stimulation or environment." Behavior modification can be defined as techniques used to change an unwanted or destructive behavior. Techniques generally involve 2 components:

Self-monitoring

Stimulus control

Self-monitoring is what we have been doing from the beginning--using the food and exercise log. This is done to analyze patterns in food intake and exercise habits, and to make you aware of these habits. **Stimulus control** involves the modification of the setting that may lead to unhealthy eating habits or lack of exercise.

Dr. Kelly Brownell, a well-known expert in the psychology of weight management, defines the ABC's of behavior. **Antecedents** are the events, feelings, and situations which occur before eating. **Behavior** refers to the eating itself and the related events and feelings. These usually occur together in a series of steps called the "Behavior Chain." **Consequences** are the events, feelings, and attitudes that occur following eating which determine if the eating will happen again. Think of the ABC's of **your** eating. Do this when you review your food log. We will use the ABC approach in this chapter and study questions.

People may overeat for a variety of reasons. You may have your own "triggers" or high risk situations for eating. A common trigger for many people is at the end of the workday. Most people usually do well with controlled eating during the day, but when returning home, especially after a stressful day, or a day when maybe breakfast or lunch was skipped, unplanned eating in large amounts occurs. This is sometimes referred to as the "arsenic hour," in other words, it's deadly!

Another common trigger is drinking alcohol. Not only does the alcohol contribute its own calories (chapter 9), but it also has behavioral effects. Even low levels of alcohol acts as a disinhibitor. This frequently appears as disregard for self imposed rules ("sure I'll split a pizza, I'm not really on a diet"), or increased risk taking ("let's see who can drink a six pack the fastest"). Also, alcohol quickly impairs short term memory ("I don't know, did I have a second piece of cake?").

If you drink, the odds are that you will not be able to use these behavior modification skills as your blood alcohol level rises. Bottom Line: Alcohol dissolves many a weight control plan! All eating behaviors are learned. This means that to change eating behaviors, you must **re-train** yourself to develop new eating behaviors. However, before you can begin to change, you must first become aware of your current eating patterns.

Complete the following self-assessment to identify your eating habits. Be honest with your answers.

ASSESSMENT OF EATING HABITS

FACTOR	EATING BEHAVIOR / DO YOU.....?	YES	NO
Meal Time	1. Eat at regular meal times daily? 2. Eat in a relatively consistent pattern day to day? 3. Eat 3 meals a day? 4. Skip meals? 5. Snack between meals?		
Length	6. Eat rapidly? (Less than 20 minutes per meal?)		
Place	7. Eat in more than one room at home? 8. Eat in more than one place in your kitchen 9. Eat standing up or lying down often times? 10. Eat while involved in other activities (i.e. reading, writing, watching TV, working?)		
Social Environment	11. Eat more food when alone? 12. Eat more with others? If yes, why?		
Mood	13. Eat under stress? 14. Eat in response to moods? Which moods?		
Amount	15. Take second helpings? 16. Ever leave an "unclean" plate? 17. Add more "extras" - butter, jam, salad dressing gravies, sauces?		
Type of Food	18. Frequently (daily) eat high-calorie foods (fried foods, creamy foods, desserts, soft drinks, alcohol?) 19. Frequently (daily) eat low-calorie foods (fresh fruits and vegetables?) 20. Drink 6-8 glasses of fluid daily?		

A "yes" answer to any of these questions: 4 through 15, 17, 18, and a "no" answer to any of these questions: 1, 2, 3, 19, 20, means you must re-train these behaviors for successful weight loss. These next few techniques will be especially important for you.

Eating occurs in a series of steps which we can view as a chain of events with many links. We will call this the behavior chain and we will focus on how to break the chain at the weakest link. We will use John, our 32-year old sailor as an example. After reviewing his food diary, John realizes he has a problem with nighttime snacking, especially potato chips while watching television.

DAILY FOOD RECORD

DAY: M T W T F S S

TIME	MOOD	HUNGER 0-5	SPEED 0-5	WHERE EATEN	FOOD INTAKE	AMOUNT
0800	rushed	1	3	work	coffee, black donut, glazed	2 2
1130	OK	3	2	work	low-fat frozen entree diet soda	1 12 oz
1645	stress	5	5	kitchen	chocolate-chip cookies	6
1730	OK	3	2	kitchen	baked chicken steamed rice green beans diet soda	1 pc 1 C 1 C 8 oz
2000	OK	1	3	den	potato chips	1/2 bag

Let's put the events that lead up to this in a series of steps. John buys the chips, finishes dinner, heads to the den to watch TV, gets the urge to snack, goes to the kitchen, sees the chips, brings them to the den, eats rapidly, and then feels very guilty, which leads to more eating. There are 8 links in John's behavior chain. We can develop techniques for changing behavior at each one of these links.

Behavior	**Technique**
John and wife shop together on Saturday, John buys chips	▪ Shop from a list ▪ Make wife aware that chips are not part of diet plan
Leave chips on counter	▪ Store in dark container ▪ Store in an inaccessible place
Finish dinner and goes to den to watch TV, gets urge to snack	▪ Have a list of alternatives to eating available ▪ Wait 5 minutes, urge may pass ▪ Separate hunger from cravings
Goes to kitchen	▪ Have low-cal snack readily available ▪ Avoid the kitchen after dinner, turn off light as reminder
Bring bag of chips to den	▪ Place a few chips in bowl and take to den (a bowl that only holds a single servings of chips)
Eat while watching TV	▪ Do nothing else while eating

Eat rapidly until full	▪ Eat one chip at a time, or break chip into smaller pieces ▪ Take sip of low cal, non-alcoholic beverage between bites ▪ Try to spread 1 serving to at least 15 minutes
Feels guilty for eating	▪ Realize that it takes 3,500 calories to gain a pound of fat ▪ Plan to increase exercise for next few days ▪ Review food log and develop ttechniques to avoid future events

Upon further review, John notices a large percent of his fat allowance coming from breakfast. He realizes that he made an unhealthy choice because he was in a hurry, and left home without breakfast. Let's see what could be done differently.

Behavior	**Technique**
Woke up late	▪ go to bed earlier ▪ set 2 alarm clocks
Running late; left home without breakfast	▪ plan breakfast the night before ▪ place fruit, bagel, yogurt, or sandwich in a bag to take to work
Donuts sitting by coffee pot at work, gets urge to eat	▪ find alternative food selection if possible ▪ limit self to 1/2 or 1 donut, eat slowly

At quick glance, John's lunch appears healthy enough, but what could have been done differently? A small frozen TV dinner was certainly not enough food to satisfy him until dinner at 5 p.m.. By adding fruit, a salad, low-fat cookies or pudding, or pretzels, John would feel fuller and would hold off that hungry feeling to prevent the "arsenic hour." The afternoon hunger, combined with a stresses mood, resulted in a chocolate chip cookie binge right before dinner. Another idea is for John to plan a mid-afternoon snack.

Review your food record and think of your own situation. Are there techniques you could apply to your unplanned eating episodes? If you think of techniques prior to the situation, you will be able to go into action with your planned technique. Having a plan is half the battle.

Self talk

Sometimes we sabotage our own weight loss efforts by negative thoughts and feelings. If you recognize yourself in any of the following statements, take heed. Identifying behaviors is the first step to changing them.

"I'm paying for it, so I might as well finish it"

- If at a restaurant, ask for a doggie bag; if at home, wrap up the rest for leftovers.
- Is putting food into your mouth instead of down the disposal going to end world hunger?

"I've already blown it today, so I'll start again tomorrow"

- It takes 3,500 calories to gain a pound of fat
- Adding more calories is only going to make the situation worse
- Your body doesn't think in terms of days, but calories over a period of time

"Just this once won't hurt"

- Is this truly a rare occurrence, or is this more frequent than you would like to admit?
- How will you feel after eating--is the guilt you may feel worth it?

"I'm so _____ (angry, stressed, bored, depressed, tired, etc.), and this food will make me feel better"

- Evaluate what is causing the emotion and try techniques to deal with emotions without food (take a walk, play your favorite hobby, etc.)
- Food may temporarily be satisfying, but a binge may only add to feelings of guilt or depression

Rewards

It is important to have short-term rewards while waiting for long-term effects. Referring to our example in Chapter 1, we set a goal of 5 pounds of weight loss per month. An example of a reward may be "I will buy a new pair of running shoes." Think about setting rewards when you set your short and long-term goals. You may even want to write them down. A reward does not need to involve spending money, however. You may want to do something you enjoy such as a leisurely afternoon in the park or sleeping in on a Saturday.

Social support

Most people do better if they involve others. As discussed in Chapter 1, a support person can be a spouse, a family member, friend, or shipmate. It needs to be someone who understands what you are going through or at least, has a desire to help you reach your goal. Open communication is the key. Talk with your support person and discuss what concerns you. If you live in the same house with this person, it is essential to have open discussions about your plans and intentions. Sometimes we assume spouses or friends are "mind readers." You may wish to say:

"I'd prefer it if you wouldn't eat ------ in front of me"

"I'd prefer if you wouldn't buy ------ from the grocery store"

"I'd like for you to tell me when I am doing ------"

If your shipmate is your support person, the same applies. Open communication is essential. Think about how your shipmate can help you best.

"Would you like to exercise with me after work?"

"If you bring in donuts for work, please leave them on your desk. I have a hard time resisting."

"Don't ask me to go to ------ for lunch. You know I have a hard time staying on my meal plan there."

You may want to use formal support groups available in the civilian community. Some are free of charge, while others range from a nominal fee to fairly expensive. Be careful of any weight loss plans or groups that charge a large amount of money. Paying money does not ensure results. Check with a Navy Dietitian at your nearest Naval Hospital for information on support groups in your area.

Conclusion

Change takes effort and gradual changes that are rewarding last the longest.

Chapter 5 Study Questions

1. List 4 of your own triggers for eating (or high risk situations).

   a. _____

   b. _____

   c. _____

   d. _____

2. Take one of your high risk situations or triggers and list the chain of events before, during, and after. Be specific.

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

   g. _____

   h. _____

   i. _____

   j. _____

3. Describe behavior changing techniques for each of the above events. You can list more than one technique.

   a. _____

   b. _____

   c. _____

   d. _____

e. _____

f. _____

g. _____

h. _____

i. _____

j. _____

CHAPTER 6

FOOD LABELING

6

In 1990, Congress passed legislation requiring manufacturers to have standardized food labels on all products. The food label was chosen in 1992 and was required to be on all products by May 1993 (however some extensions were granted until 1994). The word "standardized" is very important. Prior to this legislation, many manufacturers used unrealistic portion sizes to make their products look better. Also, there was great confusion among labeling terms such as "light." "Light" may mean fewer calories to one manufacturer and lighter in color to another. In addition, not all manufacturers chose to label their products. For instance, you would never have seen cookies with a food label before this law. Today, however, it is easy to check the fat and calorie content of what you eat.

Also, the focus of the new food label has changed. Fifty years ago, Americans were concerned with vitamin and mineral deficiencies, as well as malnutrition. Today these deficiencies are extremely rare, and people are dying of heart disease, strokes, cancer, and diseases related to obesity. For this reason, the new food label focuses on calories, fat, cholesterol, and sodium. Some vitamins and minerals are still listed, but are not as prominent on the new food label.

Despite these changes, the food label is still a bit confusing to some people. Let's discuss the different parts of the food label:

Serving size

Similar products havesimilar serving sizes. Sizes are based on amounts people actually eat

Nutrients

Lists those nutrients important to health due to heart disease, blood pressure,cancer, obesity

Nutrition Facts

Serving Size 1/2 cup (114g)
Servings Per Container 4

Amount Per Serving	
Calories 90	Calories from Fat 30
	% Daily Value*
Total Fat 3g	5%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 300mg	13%
Total Carbohydrate 13g	4%
Dietary Fiber 3g	12%
Sugars 3g	
Protein 3g	
Vitamin A 80% •	Vitamin C 60%
Calcium 4% •	Iron 4%

* Percent Daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

% Daily Value

Shows how a food fits into a 2000 calorie diet

- lists 2 vitamins
- lists 2 minerals

- Reference diet for 2000 and 2500 calories

What is most important for losing weight?

Serving size

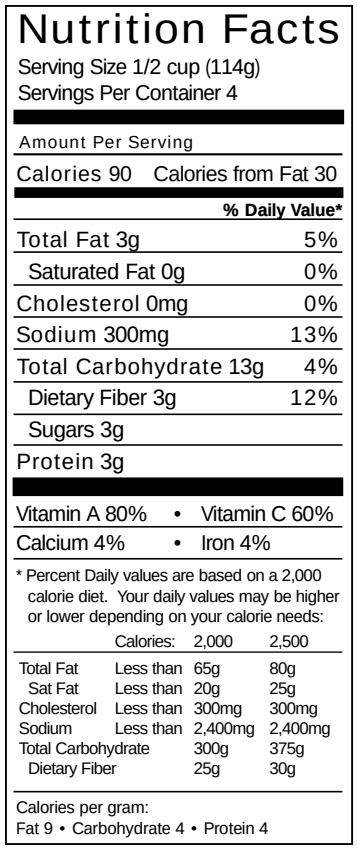
Is it realistic ?
How many portions will I eat?

Calories

How many does 1-serving contain?
Can it fit into the exchange groups?
(90 cals = 1 milk)

Total fat

How many fat grams am I eating? Can I work this into my fat budget?



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Protein 3g	
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Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

% Daily value

This is only helpful if your diet is 2000 cals per day.

As you can see, there are many items we left off. Does this mean they are not important? Not entirely; but if simplicity is the goal, these 4 items are the best to focus on, without getting confused by trying to read all parts of the food label. We can go further by explaining each part of the food label.

Calories from fat

This tells you how many calories are provided by fat (fat grams X 9). If you are already counting your total fat grams, this is redundant, but it may give you better perspective on how much fat there really is.

Total carbohydrate

Carbohydrates are important nutrients, but counting how many grams of carbohydrate you have is getting a bit technical. If you watch calories and fat, this is sufficient. For people who need to know carbohydrate in grams, this information may be useful (many diabetics check carbohydrate content). Certain athletes such as marathon runners may find this information useful as well when a meticulous diet is part of a training regimen. For the average weight watcher, counting carbohydrates is not necessary.

Sugar

Most of us know sugar as "the bad guy", but sugar is a part of total carbohydrate and is not anymore fattening than complex carbohydrate. So why is it bad? Sugar (sucrose or table sugar) has no nutritional quality except calories, whereas complex carbohydrates contain fiber and some B vitamins. We call sugar "empty calories." Next time you look at a regular soda can, see how many grams of sugar it contains. Another food to check for sugar is breakfast cereal. All cereal generally has some added sugar; but compare a pre-sweetened cereal to a whole grain cereal next time you are shopping. Cereals that contain added sugar tend to be more expensive. And remember, extra sugar in the cereal means extra calories.

Protein

As long as you have a varied diet with adequate servings of dairy products, meat, poultry, fish, beans and legumes, there should be no reason for you to count protein in grams. Some people may wish to compare protein content to an ounce of meat or milk. Remember from Chapter 4 that one ounce of meat, fish, or poultry contains 7 grams of protein. A 8-ounce serving of milk (all types) or yogurt contains 8 grams of protein.

Nutrient label descriptions

What about the front of the package. Can you believe every thing you read to describe the product, and what exactly do all those terms mean? With the new labeling laws, all terms must be applied uniformly to ensure they mean the same to the consumer.

"Free"

The product contains no amount (or physiologically inconsequential), of one of these components: fat, saturated fat, cholesterol, sodium, sugars, or calories. For instance, "fat free" means less than 0.5 grams per serving and "calorie free" means less that 5 calories per serving.

"Low"

This food could be eaten frequently without exceeding dietary guidelines for one or more of the following components: fat, saturated fat, cholesterol, sodium, and calories. The following terms apply:

Low fat	3 grams or less per serving
Low saturated fat	1 gram or less per serving
Low sodium	Less than 140 mgs per serving
Very low sodium	Less than 35 mgs per serving
Low cholesterol	Less than 20 mgs per serving
Low calorie	40 calories or less per serving

"Lean and extra lean"

Describes the fat content of meat, poultry, seafood, and game:

Lean Less than 10 grams of fat, less than 4 grams of saturated fat, and less than 95 mgs of cholesterol per serving and per 100 grams.

Extra lean Less than 5 grams of fat, less than 2 grams of saturated fat, and less than 95 mgs of cholesterol per serving and per 100 grams.

"High"

One serving of the food contains 20 percent or more of the Daily Value for a particular nutrient.

"Good Source"

One serving of the food contains 10 percent to 19 percent of the daily value for a particular nutrient.

"Reduced"

A nutritionally altered product contains 25 percent less of a nutrient or of calories than the regular, or reference product.

"Less"

A food, whether altered or not, contains 25 percent less of a nutrient or of calories than the reference food.

"Light"

A nutritionally altered product contains one-third fewer calories or half of the fat of the reference food, or the sodium content of the low-calorie, low-fat food has been reduced by 50 percent.

"More"

One serving of the food, altered or not, contains a nutrient in a quantity that is at least 10 percent of the Daily Value more than the reference food.

About daily values

Daily Values are based on a reference diet of 2,000 calories. This would be the approximate calorie intake for an average male. Women, elderly, athletes, and very tall, very small, or very active people may need more or less calories. This makes the percent Daily Value of little use to a large number of people. Keep this in mind when evaluating food labels.

One final note

If you look at what describes a "low-fat" food, it is something that contains 3 grams of fat or less per serving. Low- fat milk (or 2 percent milk) contains 5 grams of fat per serving. At the present time, milk is exempt from food labeling laws as the Nutrition Labeling and Education Act exempts products covered by food standards. That may change soon as the Food and Drug Administration (FDA) is proposing eliminating the standards of identity for low-fat and skim milk products. Under the proposal, milk products containing 1.5 percent to 2 percent milk fat could no longer use the term "low-fat", but instead could be called "reduced-fat milk". Milk containing 1 percent milk fat could be labeled "low-fat milk" (it contains 1.5 grams of fat per serving).

Cholesterol, sodium, and fiber will be discussed in Chapter 7.

Chapter 6 Study Questions

1. Why do we have food labeling laws? _____

_____

2. What is meant by a "standardized" food label? _____

_____

3. Why were food labeling laws changed in recent years? _____

_____

4. What does % Daily Value mean? _____

_____

5. Name the 3 most important items on the food label if weight reduction is your goal.

   a. _____

   b. _____

   c. _____

6. % Daily Value is based on a _____ calorie diet.

7. "Calories from fat" on the food label tells you _____

_____

8. What is the difference between sugar and a complex carbohydrate? _____

_____

9. What is an "empty calorie" food? _____

_____

10. A food label of microwave popcorn has 8 grams of fat per serving, and serving size is 3 cups, and there are 4 servings per bag. How many fat grams are you consuming if you eat the whole bag?

_____

CHAPTER 7

CHOLESTEROL, SODIUM, AND FIBER

7

Cholesterol

Cholesterol is a white, waxy substance. It is naturally found in all foods of animal origin -- meat, poultry, fish, milk and milk products, and egg yolks. Cholesterol is needed by the body for many important functions, like making cell membranes and producing hormones. Plant foods do not contain cholesterol.

Not all cholesterol is beneficial to the body, as you are probably aware. Cholesterol may be deposited on the walls of arteries making the passageway narrower and the vessels harder and less pliable. Since heart disease and strokes are the number one killer of men and women, you need to be concerned about it. Certain factors put you at risk for developing heart disease. These include smoking, high blood pressure, obesity, sedentary lifestyle (lack of exercise), high blood cholesterol levels, family history of heart disease, diabetes, and age.

The American Heart Association recommends having cholesterol tested by the age of 20, and then every 5 years thereafter, if normal. The Navy routinely checks cholesterol levels in all active duty members at the periodic physical and separation physical

Total Cholesterol:
Desirable - less than 200 mg/dl
Borderline high - 200-239 mg/dl
High risk - greater than 240 mg/dl

In our blood, cholesterol is combined with carrier proteins, called lipoproteins. There are two types: LDL cholesterol (low density lipoproteins) and HDL cholesterol (high density lipoproteins). Both types of lipoproteins contain cholesterol, but in different amounts, and both LDL and HDL cholesterol contribute to the total cholesterol level. LDL cholesterol is sometimes referred to as "bad cholesterol" as it tends to deposit cholesterol on artery walls. HDL cholesterol is referred to as "good cholesterol" because it seems to acts as a scavenger and carries cholesterol away from body tissues. Exercise has been found to increase HDL levels.

LDL Cholesterol
Desirable - less than 130 mg/dl
Borderline high - 130-159 mg/dl
High risk - greater than 160 mg/dl

HDL Cholesterol
Desirable - greater than 60 mg/dl
High risk - less than 35 mg/dl

It is important to know that cholesterol numbers alone cannot predict who will develop heart disease. Instead, we need to look at a variety of factors that increase your risk for heart disease. Some of these are factors that cannot be changed, and others are factors that can be prevented.

Modifiable Risk Factors	Nonmodifiable Risk Factors
Cigarette smoking	Age (males - greater than 45
High blood pressure	females - greater than 55)
Obesity	Male sex
Physical inactivity	Family history of premature coronary heart disease
Diabetes	

Up to 75 percent of the cholesterol in our bloodstream is made by our liver, the rest comes from cholesterol and saturated fat in our diet. Some people have a "genetic" predisposition to having high cholesterol, as their liver makes too much cholesterol. Regardless of the reason for the high cholesterol level, a prudent diet is recommended for all Americans.

Eating too much fat, especially saturated fat, increases cholesterol production. From Chapter 2 we learned that saturated fat is mostly animal fat or solid fat. All Americans, regardless of their cholesterol level, are recommended to follow a low fat diet of less than 30 percent calories, as previously discussed. Most foods that raise blood cholesterol are not necessarily high in cholesterol, but are high in saturated fat. Believe it or not, we can eat up to 300 mg per day of cholesterol and still be on a low cholesterol diet. There are a few foods that are very high in cholesterol, and recommendations for those foods are as follows:

Egg yolks - 4 per week or less
Liver or other organ meats - 3 oz per month or less

Otherwise, when we talk about eating a low-cholesterol diet, what we really are talking about is eating a low-fat diet, especially low in saturated fat. Recommendations for getting fat out of your diet include:

Limit or avoid high fat meats:
(see Chapter 4 for complete list of meats)

Beef:

- Brisket
- Corned beef
- Ground hamburger (less than 85 percent lean such as 75-80percent lean)
- Club or rib steaks
- Pastrami
- Spare ribs
- Meats labeled "Prime"

Pork:

- Bacon
- Deviled ham
- Cold cuts
- Hot dogs
- Loin
- Spare ribs
- Sausage
- Luncheon meats (bologna, salami)

Guidelines for limiting fat:

1. Limit meat (or equivalent) to 4-6 oz per day (this is all that is need for most adults, but refer to your individual meat exchanges in Chapter 4).
2. Trim all fat and skins prior to cooking. (For poultry, remove skin before eating as long as it is not fried).
3. Avoid frying, especially deep fat frying.
4. Limit hard cheese, use low fat natural cheese, skim milk cheese low fat cottage cheese.
5. Limit cream cheese, cheese spreads, dips, sauces, cheese products such as macaroni and cheese, cheese snacks, and cheese Danish.
6. Use skim milk or 1% milk. 2 cups are recommended per day.
7. If you are using whole milk now, gradually wean yourself to 2% then to 1% or skim milk.
8. If you are using 2% milk, gradually wean yourself to 1% or skim milk (most people are unaware of the high fat content of whole milk and 2% milk). Guidelines for other family members:

   Age 1 - 2: whole milk
   Age 2 - 6: 2% milk
   Age 6 and older: 1% or skim milk

   (even though 2% milk says the words "low fat" on the label, it does not meet the new guidelines of low fat. The Dairy Industry has won a special exemption from the federal government from the new labeling laws. For something to use the words "low fat" it needs to contain less than 3 grams of fat per serving).
9. Fruits and vegetables contain no cholesterol and are virtually fat free. However, avocados and olives do contain fat and should be used in small amounts.
10. Limit seasoning vegetables with bacon fat, fat back, salt pork, oil, margarine, shortening, and butter. Instead use lemon, herbs and spices to season.
11. Grains contain no cholesterol and minimal fat. Many products made with grains have fat added to the product. You should limit eating these foods:

    croissants
    donuts
    fried tortillas
    buttered rolls
    cheese or egg breads
    sweet rolls
    commercially prepared muffins
    biscuits
    waffles
    buttered popcorn (and most microwave popcorn)
    cakes
    potato chips
    corn chips

granola type cereal
French fries
fried rice
high fat crackers like cheese, butter, or wheat crackers.

12. Best choices for starchy foods are:
    plain bread
    hard rolls
    baked or mashed potatoes
    cooked pasta or noodles without sauces or butter
    (tomato based sauces are a good alternative).
13. All fats are high in calories with little or no nutritional value. Therefore only very small amounts of fat should be used. Soft margarine (spreadable) is preferred to a hard margarine or butter (the harder the fat, the more saturated).
14. Nuts and seeds are cholesterol free, but are naturally high in fat and should be limited (especially if weight reduction is the goal).
15. Limit gravy, except homemade using meat juices only. Homemade gray can be make low-fat by refrigerating the meat juice, then skimming off the layer of fat after it hardens.
16. Limit creamy salad dressing (blue cheese, buttermilk).
17. Limit sour cream and cream cheese, and use low fat or non-fat alternatives when possible.
18. Limit pies, cakes, and cookies (check fat grams in Appendix A).
19. Angel food cake, sherbet, and fruit ices are good alternatives. Homemade cakes and cookies using recipe modification may be used (see Appendix B).
20. Limit ice cream; use low fat or non-fat frozen yogurt as an alternative.

One final word

Most people think that you need to avoid shellfish to follow a low cholesterol diet. This is **not true**. All fish, including shellfish is very low in fat, especially low in saturated fat (most fish and shellfish contain approximately 1 gram of total fat and less that 1/2 gram of saturated fat!) Cholesterol levels are also fairly low compared with beef, pork, and chicken, with the exception of shrimp. Shrimp does contain higher levels of cholesterol than red meat. However, because shrimp is so low in total fat and saturated fat, it is acceptable to include it as part of a low-fat, low cholesterol diet.

As with other meats, avoid frying! Fish and shellfish are also rich in Omega-3 fatty acids which have been shown to be protective against heart disease. Greenland Eskimos have 100 times **less** risk of heart disease than Americans due to their high fish consumption (also, there are no cows or fast food restaurants in their environment).

Sodium:

Sodium is a mineral which is present in the body in all body fluids and tissues. Sodium and chloride are two minerals which make up what we know as table salt (sodium chloride). The human body needs a certain amount of sodium in the diet to maintain health. The problem is that most Americans greatly exceed the recommended levels of sodium intake.

Currently 30 percent of Americans have high blood pressure. Excessive sodium in the diet can contribute to the development of high blood pressure or worsen existing blood pressure. In conditions such as heart disease or high blood pressure, a low-sodium diet is a prescribed part of treatment. There is on-going debate as to whether persons without high blood pressure need to restrict sodium.

In a major study done recently in 52 areas of the world, it was found that "the higher the intake of sodium, the higher the blood pressure." The American Heart Association recommends that healthy Americans get no more than 3,000 mg of sodium per day to help prevent high blood pressure. So, does eating salt make you fat? Salt contains no calories, yet a high sodium diet can cause a temporary water weight gain, but keep in mind this is not true "fat" gain.

Sodium occurs naturally is almost all foods. One teaspoon of table salt contains 2,300 mg sodium. Some foods are highly salted during processing. To help reduce your sodium intake, follow these guidelines:

1. Add only a moderate amount of salt in cooking. Adding salt shouldn't be an involuntary action with meals. Taste, then season if needed.
2. Try alternative seasonings such as lemon, lime, herbs, and spices. Use chopped onions or fresh garlic to season meat, poultry, or fish dishes. Powders such as garlic, onion or celery are alternatives to using garlic, onion, or celery salt.
3. Limit smoked, cured, salted, koshered or canned meat, fish, and poultry such as ham, bacon, sausage, cold cuts, corned beef, pastrami, sardines, smoked salmon, hot dogs, hard cheeses, processed cheeses, and cheese spreads.
4. Limit foods which contain visible salt such as salted crackers, nuts, potato chips, corn chips, and pretzels.
5. Limit pickled vegetables or those marinated in brine such as sauerkraut, pickles, or olives.
6. Limit instant foods such as canned or dehydrated soups, convenience foods such as TV dinners, or noodle mixes.
7. Limit salty seasonings such as monosodium glutamate, onion salt, garlic salt, seasoning salt, soy sauce, or Worcestershire sauce.
8. Fresh or frozen fruits and vegetables may be used liberally.
9. Meats, fish, or poultry should be fresh or frozen.

Although not all people are equally susceptible to the effects of sodium (some individuals appear to be more affected by it than others), it appears beneficial for most Americans to moderately restrict their sodium intake (all people become more "sodium sensitive" with age).

Fiber:

Dietary fiber is found only in plant food and is the "indigestible" part of the plant. There are 2 types of fiber - **soluble fiber** and **insoluble fiber**. Soluble fiber is beneficial at lowering cholesterol levels. Sources include fruits, vegetables, especially apples, oranges, carrots, oat bran, barley, and beans. Insoluble fiber tends to increase the bulk of food and helps speed the passage of food through the digestive tract. Sources include fruits with edible skins, whole grains and breads, and whole grain cereals. 25-30 grams of fiber per day is recommended. Most Americans only get 10-15 grams of fiber per day.

Being "indigestible," fiber itself contains no calories. A diet rich in fiber is associated with a variety of health benefits such as decreased cholesterol, decreased risk for some types of cancer, especially colon cancer (the second leading cause of cancer death in the United States). Fiber can also assist with weight loss by providing bulk to the diet and allowing you to get the satisfaction of chewing and the feeling of fullness. Also, it is believed that if you are eating more fruits, vegetables, and whole grains, you will be eating less high fat, calorically dense foods.

In a recent study reported in the Journal of the American Medical Association, 43,000 men were studied over a 6 year period to determine the effects of a high fiber intake and the risk of coronary heart disease. **The results were dramatic**. There was a 29 percent reduction in coronary heart disease for every 10-gram increase in cereal fiber. Although it has been well documented that soluble fiber (the type found in fruits, vegetables, and oats) reduces risk of heart disease by cholesterol reduction, this study shows that insoluble fiber (found in breakfast cereals and wheat bread) can have the same positive health benefits.

The good news is that increasing fiber is so easy. Start each day with a high fiber breakfast cereal. Look on the label fiber content. You want a minimum of 2 grams of dietary fiber per serving. Refined, sugary breakfast cereals usually contain no dietary fiber, and some are so sweet, they could be considered "candy in milk." Fiber-rich cereals range from 2 grams of fiber to 16 grams of more per serving. Go easy when increasing your fiber intake. Complaints of abdominal discomfort are common with drastic changes in fiber intake. Increase gradually; include a 2 gram per serving cereal and advance to the 7 to 8 gram per serving cereals over time.

Guidelines for increasing fiber in the diet:

1. Eat 3-5 servings of cooked or raw vegetables daily.
   If unable to get a cooked vegetable, eat salad with a variety of raw vegetables.
2. Eat 2-4 servings of fruit daily. Choose whole fruits over juice.
3. Choose whole grain breads over white bread when possible. The word "whole" on the package tells you it is a good source of fiber (as opposed to just "wheat bread").
4. Choose a whole grain cereal vs. refined or processed cereal. Good choices are shredded wheat, bran flakes, oatmeal, or raisin bran.
5. Eat more beans, peas, and lentils.
6. Increase fiber intake gradually. Remember excess is not best. When increasing fiber, also increase fluid intake.

Chapter 7 Study Questions

1. Cholesterol is only found in animal foods. **True or False**

2. A total cholesterol level for a 25 year old male of 223mg/dl is considered.

   _____

3. Most foods that raise blood cholesterol are not necessarily high in cholesterol, but are high in _____

4. Name 3 ways to reduce the fat in your diet.

   a. _____

   b. _____

   c. _____

5. Why should a person reduce salt or sodium in the diet, if there is no history of high blood pressure? _____

   _____

6. Name 3 ways to reduce salt or sodium in your diet.

   a. _____

   b. _____

   c. _____

7. Why is fiber recommended for people trying to lose weight?

   _____

8. Name 4 foods which are good sources of fiber.

   a. _____

   b. _____

   c. _____

   d. _____

9. Name 3 ways to increase fiber in your diet.

   a. _____

   b. _____

   c. _____

10. When you increase your fiber intake, you should also increase your _____

    _____ intake

CHAPTER 8

EATING IN THE GENERAL MESS

Is it possible to lose weight and eat in the general mess? Yes, and it doesn't mean living on cottage cheese and carrot sticks. This chapter will give you the tools you will need to eat healthier, as well as empowering you to recommend changes in the Navy food you are eating.

You are probably wondering who makes the decisions for what you eat. You do, but let's take some time to learn who decides what you are served. Because of the wide variety of galleys worldwide, planning menus by experts is not feasible for the Navy. Menus for messes are planned locally by the Mess Specialist using the Armed Forces Menus Standards, and must use recipes developed by the Armed Forces Recipe Service. Not including hospitals and clubs, the Navy has over 600 general messes, 80 percent of which are afloat. The Navy must rely heavily on peer education for menu planning. Primary considerations for menus are cost, crew preference, and making sure meals contain enough calories and nutrients for a crew that is usually young, usually hard working, and usually male.

In June of 1992, DOD mandated 1 percent milk as the primary milk of choice. The Navy also added to the supply system, fat-free and low fat salad dressing, low fat ground turkey, and low fat beef patties, and encouraged messes to offer alternatives to fried items. Computer Assisted Menu Planning (CAMP) is now available to all Navy messes. This computer program is a new tool for menu planning which walks the user through the menu planning process. It checks for color, texture, fat, variety, and vitamins A and C. It also contains a personal weight profile which can assist patrons in calculating individual calorie and fat levels.

Food Service personnel want to please the customer. Some ways for service members to request preferences are at point of service. Another option is the suggestion box. The food service officer is required to provide an answer to all suggestions in 48 hours. Most ships have a menu review board with a representative from each division, and this is an excellent way to provide feedback to the food service division. The chain of command and command master chief are also methods that can be used.

Some galleys are more progressive than others at offering and promoting low fat choices. While none are expected to offer "health spa" food, they should be able to provide the following, if they know their customers are interested.

- percent milk as the primary milk choice
- Entrees or sandwiches that have less that 15 grams of fat per serving (see list that follows) and post which choices fit into a low fat meal plan
- Side dishes with less than 5 grams of fat; cooked vegetables without added fat
- Potato bar with healthy toppings (cottage cheese, raw veggies, etc.)
- Pasta bar
- Meatless entrees such as spinach lasagna
- Different varieties of baked fish entrees 2-3 times per week
- Baked chicken on the speedline
- Fresh baked breads
- Fajita bar with low-fat turkey or chicken

Breakfast items:

- Waffles or pancakes with toppings other than butter or syrup (take melted butter off steam table). Recommend fuit toppings such as applesauce or sliced fruit.
- Toasted English muffins or bagels instead of donuts
- Low-fat sandwiches such as roast turkey breast with low-fat thousand island on pita bread, whole wheat, or rye.
- Vegetarian sandwiches
- Yogurt with fruit
- Whole grain cereal, hot cereals and grits without added butter
- Leave one egg yolk out of a 2 egg omelet
- Position fresh fruit, cereals, yogurt, breads before the grill at breakfast
- Leave fat out of vegetables
- Label low-fat entrees with red hearts or other identifying marks
- Label fat grams on entrees

What constitutes a low-fat diet?

As we learned from Chapter 2, a low-fat diet is approximately 60-65 grams of fat for men and 50 grams of fat for women. A practical way of dividing it up would be:

	Men	**Women**
Breakfast	10	10
Lunch	25	20
Dinner	25	20
	60 grams	50 grams

A rule of thumb often used by dietitians is to select entrees that contain less than 15 grams of fat. Vegetables and side dishes should be prepared without added margarine, cheese, or rich sauces. Salads and desserts should total 5 grams of fat or less. Beverages should be calorie free (water, sugar-free soda, unsweetened iced tea).

12 ounce soda = 150 calories (9-12 teaspoons sugar)
12 ounce "bug juice" = 160 calories

The following entrees and sandwiches in the Navy recipe system contain approximately 15 grams of fat or less per standard serving.

Beef Items

Beef fajitas
Beef roast, lean, no gravy
Braised beef cubes
Fajita pita, except breaded
Liver, no gravy
Beef manicotti
Pizza, all except French bread (1 slice)
Tamale pie
Yakisoba
BBQ beef cubes
El rancho stew
Pepper steak
Stuffed beef rolls, 1 roll, no gravy
Creole macaroni
Hamburger steak
Oriental pepper steak
Ravioli
Spaghetti, all styles
Stuffed green peppers
Tamale pizza
Beef teriyaki
Beef brogul
Hamburger pizza
Salisbury steak, no gravy
Syrian stew
Beef tenderloin
Texas hash

Pork

Chalupa
BBQ ham
Ham and macaroni
Ham and scalloped potatoes
Ham (all styles)
Ham loaf
Roast/fresh ham
Pork tenderloin (no gravy)

Poultry

Baked chicken
Chicken adobo
Chicken cacciatore
Herbed baked chicken
Sweet and sour chicken
Chicken vega
Turkey roast (2 T gravy)
Turkey w/BBQ sauce
BBQ chicken
Chinese 5 spice
Teriyaki chicken
Turkey pot pie
Baked chicken with noodles/rice
Hot and spicy chicken
Game hens (no skin)
Turkey curry
Turkey salad
Chicken chow mein (on rice)
Mexican baked chicken
Hot turkey sandwich

Fish and Seafood

Baked fish
Baked fish w/garlic butter
Baked trout fillets
Broiled lobster (w/o butter)
Creole fish fillets
Baked stuffed fish
Herb baked fish
Jambalaya
Macaroni-tuna salad
Pan fried fish
Salmon loaf
Salmon cakes
Seafood newburg
Spicy baked fish
Stuffed flounder/sole creole
Shrimp chop suey
Baked fish almondine
Baked scallops
Baked tuna and noodles
Crab cakes
Creole scallops
Cajun baked fish
Creole shrimp
Lemon baked fish
Oven fried fish
Parmesan fish
Scallops salmon and peas
Scallops tuna and peas
Shrimp scampi
Shrimp (not fried)
Tuna salad
Onion baked fish

Sandwich with approximately 15 grams of fat

BBQ beef or pork
Denver sandwich
Ham salad
Chicken fillet (unbreaded)
Mushroom, onion, pepper pita pizza
Sloppy joe
Hamburger (no cheese or mayo)
Tuna salad
Chicken salad
BLT (no mayo unless low fat)
Egg salad sandwich
Moroccan pocket
Roast turkey sandwich (no gravy)
Ham (no mayo unless low fat)
Cheese pita pizza
Turkey salad sandwich
Roast beef (no gravy)

Cheese

Broccoli quiche
Pizza (1 slice)
Cheese manicotti
Spinach lasagna
Onion and mushroom quiche

Soups with 5 grams of fat

Bean soups, split pea
Corn chowder
Creole
Logging
Manhattan clam chowder
Potato
Tomato; all styles
Broccoli
Doubly good
Pepper pot
Vegetable
Spanish
Minestrone

Side dishes with 5 grams of fat or less

Potatoes; all recipes **except**
- au gratin
- French fried
- shoe string
- cheese baked
- scalloped
- hash brown
- lyonnaise
- o'brien

Vegetables; any steamed with
- no added butter,
- margarine, cream sauce
- cheese, sautéing

Rice; all recipes
- except fried

Beans; all recipes except
- refried with cheese

Rolls or bread w/o butter

Salads and dessert, added together should total 5 grams of fat. Select one choice that is 5 grams, and one that is fat free.

Salads that are fat-free

All raw and canned vegetables
(except olives and avocado)
Served with fat-free or oil free dressing
lemon, or vinegar
Most gelatin salads

Salads with approx. 5 grams fat

Apple celery
3 bean
Beet
Coleslaw with vinegar dressing
Cottage cheese

Salad items that are loaded with fat:

Bacon, bacon bits, cheese, chow mein noodles, eggs,mayonnaise, regular salad dressings, olives, croutons, sunflower seeds

Desserts that are fat-free

Fruit; fresh or canned
Fat-free frozen yogurt
Fruited gelatin (no whipped topping)
Popsicles, fudgesicles, ices
Angel food cake

Desserts with approximately 5 grams of fat

Pudding (canned or made with skim milk)
Sherbet
Soft serve (1 cup limit)
Low-fat frozen yogurt (1 cup limit)
Pie filling (no crust) with whipped topping
Fruit crisps

Breakfast Items

Fat free and filling

Juice
Fruit, canned or fresh
Dry cereal
Hot cereal; no margarine or butter
Skim milk
English muffin with honey (no margarine)
Bagel with fat-free cream cheese or jelly
Toast with jelly

Items with 5 grams of fat

1 egg (hardcooked)
Biscuit with jelly (no margarine or gravy)
1 teaspoon butter, margarine, peanut butter
2 teaspoon of cream cheese

Now that we have guidance for foods available in the mess hall, let's put all this information together with some examples of good and bad menu planning.

Comparison of Fat Content of various meals

Breakfast

Typical	**Low Fat**
Orange juice	Orange juice
Cheese omelet	Banana
Sausage (2 links)	Cereal, dry
Hashed brown potatoes	English muffin
Raised doughnut	1 pat butter
2% milk (1 cup)	Jelly
Coffee w/2 tsp nondairy creamer	1% milk (1 cup)
	Coffee
FAT: 60 grams	**FAT: 10 grams**

Lunch

Typical	**Low fat**
Bean w/bacon soup	Chicken noodle soup
Bacon cheeseburger	Hamburger on bun
French fried potatoes	Baked pork and beans
Tossed green salad	Tossed green salad
Thousand island dressing	Low fat thousand island dressing
Chocolate ice cream	Fruit
2% milk (1 cup)	1% milk (1 cup)
FAT : 69 grams	**FAT : 22 grams**

Dinner

Typical	**Low fat**
Batter fried chicken	Roasted chicken, no skin
French fries	Rice pilaf
Cream style corn	Cream style corn
Tossed green salad	Tossed green salad
w/bacon bits, shredded	2 Tbs low fat French dressing
cheese, boiled egg, olives	1 pat butter
2 Tbs French dressing	Fruit
Dinner roll	Gelatin
2 pats butter	
Apple pie	
FAT : 114 grams fat	**FAT : 18 grams fat**

Grand Total:

Typical day : 243 fat grams

Low fat day : 50 fat grams

As you can see, your food selection makes a big difference in your weight loss efforts. Please choose carefully, as knowledge is power! Also, assert your likes and dislikes. Your food service personnel will appreciate the feedback.

One final note, the Navy is unique from civilian life in that the food prepared for you is all-you-can-eat. Going back for seconds or thirds is not unusual. You can have all the low fat selections available, but they don't do a bit of good if extra helpings are a common occurrence.

If tempted to continue eating after your first plateful is gone, use your behavior modification strategies. In particular, make your first plateful last at least 20 minutes if possible. Slow down, put your fork down between bites, or sip a non-caloric beverage while eating. Listen to your hunger cues; are you really still hungry or are you craving more food for its flavor or texture? As a last resort, leave the mess hall for another activity if second helpings are too tempting.

Chapter 8 Study Questions

1. Department of Defense has mandated _____ percent milk as the primary milk of choice for the military.

2. Describe 2 ways you could tell the food service staff your preferences for low-fat menus items.

   a. _____

   b. _____

3. Name 4 healthy alternatives to decrease fat when eating in the galley.

   a. _____

   b. _____

   c. _____

   d. _____

4. What is a practical way to divide up a 60 fat gram day into breakfast, lunch, and dinner?

   _____

   _____

5. A 12-ounce soda contains _____ teaspoons of sugar.

6. An entree is considered low fat if it contains less than _____ grams of fat.

7. Name 3 beef items from the Armed Forces Recipe Service that contain 15 grams of fat or less per standard serving.

   a. _____

   b. _____

   c. _____

8. A hamburger can easily fit into a low fat meal plan. **True or False**.

9. Name 4 salad bar items loaded with fat.

   a. _____

   b. _____

   c. _____

   d. _____

10. Describe a healthy, low fat breakfast.

_____

_____

CHAPTER 9

EATING AWAY FROM HOME

Did you know that one-third of the American food dollar is spent eating out, and 40 percent of that is spent in fast food restaurants? If you are trying to eat healthy and lose weight, you may think it is impossible to eat in restaurants. Eating away from home is fun and should not be limited if it is something you enjoy. People need to educate themselves on what is healthy and what is not.

All-you-can-eat (Also called buffet)

Just as the name implies, there are no limits, no boundaries, no portion control. This is an open invitation to STUFF YOURSELF! Sure there may be some healthy foods available on the buffet, but they will most likely be outnumbered by everything that is **high fat, high calorie** and tempting. The best bet is to avoid these types of restaurants! While this may not always be realistic, there are some strategies for dealing with buffet.

1. View the buffet without a plate the first time. Decide what you want to eat (or what fits into your meal plan). Then take your plate to the buffet line.
2. Start with the salad items first. Load up on the raw vegetables. These are usually placed at the beginning of the salad bar line.
3. As you progress through the line, you'll notice many mixed dishes, such as noodle or pasta casseroles, and tuna and chicken salads. These are usually loaded with fat and calories (due to the mayonnaise) so go easy with these.
4. Probably the biggest culprit on the salad bar line is the salad dressing, with blue cheese and thousand island the worst possible choices. See if they have their dressings labeled, and select a low-calorie or low-fat choice. When in doubt, choose an Italian-type dressing, or oil and vinegar (easy on the oil, liberal with the vinegar). Add a small amount (a tablespoon or less). Another option is to put dressing in a small container on the side, and dip your fork in the dressing with each bite. This usually adds the right amount.
5. Eat slowly; try and let each plate last 20 minutes.
6. Buffets contain anything from American cuisine to ethnic dishes. The following categories provide guidance on the various types of restaurants you may encounter.

Ethnic Cuisine

Chinese

There is no doubt that Chinese food as it is eaten in China is much healthier than in America. "True" Chinese cuisine focuses more on carbohydrates such as rice and vegetables, yet in America, Chinese dishes are more heavy in meat and fat. It is still easy to get a healthy, tasty meal when dining out at a Chinese restaurant. The most common cooking method is stir-frying in a wok. Wok cooking can be very healthy since smaller amounts of liquid oils are used. Peanut oil is commonly used in cooking which is a monounsaturated fat, which helps lower cholesterol. Try to choose steamed white rice instead of fried rice whenever possible.

Several meats which are high in fat and should be avoided include duck, beef, and pork. Many other menu items such as sweet and sour dishes, which are breaded and deep-fried should be avoided, as well as egg rolls, fried shrimp, and fried won ton.

Many people are concerned about MSG (monosodium glutamate) in Chinese food. It's true that traditional Chinese dishes are liberally seasoned with MSG and high-sodium soy sauce (a tablespoon of soy sauce contains 1,000 mg of sodium!). Most Chinese dishes are made to order so requesting less soy and no MSG should not be a problem (many restaurants note "no MSG" on their menus). Try not to avoid soy sauce altogether as the dish would be very bland.

Green flag:

- simmered, steamed, roasted
- stir-fried in mild sauce
- hot and spicy tomato sauce
- cooked in light wine sauce
- in lobster sauce
- bean curd (tofu)
- served on a sizzling platter
- served with assorted vegetables

Red flag:

- fried, deep fried
- breaded and fried
- duck
- egg foo young
- crispy (usually means fried)
- plum sauce
- sweet and sour sauce
- hoisin sauce, soy sauce
- with cashews or peanuts

Have it your way:

"Could I have this made without MSG?"

"Have the chef use less oil in the preparation."

"Would it be possible to use less salt and soy sauce?"

"What type of oil is used for stir-frying?" (if lard or other animal fat it used, ask if peanut oil can be substituted)

"May I substitute chicken for duck in this dish?"

"Please don't garnish with cashews or peanuts"

"Can you leave off the crispy fried won ton?"

"May I have a doggie bag?"

Good choice:

Soups: Hot and sour, Won Ton, Sizzling rice (chicken or shrimp)

Poultry: Chicken chop suey, Sizzling sliced chicken, Yu Hsiang Chicken, Velvet chicken, Moo Goo Gia Pan,

Seafood: Shrimp with broccoli, Szechuan (shrimp or fish fillets), Moo shi shrimp

Meat: Beef and broccoli, Twice cooked pork, Roast pork, Beef chow mein,

Noodles: Chicken lo mein, Vegetable lo mein

Mexican

Mexican food is one of the most popular ethnic cuisines in America. If you think Mexican food is off limits when trying to lose weight, you may be partially right. The typical Mexican menu is loaded with fat and calories, and it takes a savvy, well-informed consumer to make some healthy choices. On a positive note, Mexican cuisine focuses less on protein than the typical American diet (compare one to two ounces of meat in an enchilada to an eight to ten ounce steak). Traditional staple ingredients of the Mexican diet are corn, beans, and chilies. By themselves, these items can be the beginnings of a healthy diet, yet combined with cheese and lard (chili con queso, taco shells), the results can be disastrous.

Read the menu carefully. If the menu item doesn't have a description, ask your waiter or waitress to describe the item, and the preparation. Toppings such as sour cream and guacamole can be the main culprit in many dishes. It's easy to request that those be left off or at least put on the side. Salsa is fat-free and very low in calories, so use it liberally to season your foods. Salsa does contain sodium so if your diet restricts salt or sodium, use in small amounts.

Green flag:

- shredded chicken
- spicy beef
- served with salsa or salsa verde
- topped with shredded lettuce, diced tomatoes, and onions
- served with or wrapped in a corn or flour tortilla
- grilled
- marinated
- picante sauce
- simmered
- mole sauce
- enchilada sauce

Red flag:

- served with guacamole
- topped with sour cream
- topped or filled with cheese
- shredded cheese
- served in fried tortilla shell
- chorizo (Mexican sausage) or bacon
- topped with black olives
- crispy
- fried or deep fried
- layered in refried beans
- served over tortilla chips

Have it your way:

"Please hold the guacamole"

"Please hold the sour cream"

"Please remove the tortilla chips and salsa from the table"

"Please serve my salad without the tortilla shell. Bring an order of soft corn tortillas on the side"

"Please hold the cheese"

"Please put extra lettuce, tomatoes, onions on the plate"

"May I substitute shredded chicken for beef?"

"May I have a doggie bag?"

Good choice:

Appetizers: Black bean soup, Chili con carne, Gazpacho

Mexican entrees: Fajitas, Enchiladas, Soft taco, Burrito, Chili verde, Mole pollo, Camarones de hacha, Arroz con pollo

Side dishes: Mexican rice, Black beans, Tortillas(corn or flour), Salsa

Italian

Italian cuisine is a favorite for many Americans, and the good news is that much of it is healthy. Still, you will need some information before navigating your way through the menu. Pasta, which is the staple of Italian cuisine, is rich in carbohydrates, low in fat. On the down side, portion sizes of Italian dishes tend to be large, which means added calories. Bread and butter is usually left on the table while you wait for your food. While bread is generally low in fat, butter is not, and you could consume several hundred calories before your main dish arrives! Some restaurants will let you order one meal with two plates to split between two people.

There are over 20 different types of pastas. Pastas are created from flour, water, and/or eggs. Some pastas are topped with a sauce (Spaghetti, Angel hair, Fettucini) while others are stuffed with cheese, meat, or spinach (Cannelloni, Ravioli, Agnolotti). You need to know the "topping" or "stuffing" of the pasta to help you decide if it fits with your meal plan.

Green flag:

- lightly sautéed with onions
- sun-dried tomatoes
- spicy marinara sauce
- tomato-based sauce--marinara or cacciatore
- red or white wine sauce
- light mushroom sauce
- capers, herbs, spices
- garlic and oregano, crushed tomatoes and spices
- red or white clam sauce
- primavera (make sure it is not a cream sauce)

- lemon sauce
- piccata
- florentine (spinach)
- grilled (usually on fish items)
- light red sauce

Red flag:

- alfredo
- carbonara
- saltimabocca
- parmigiana
- pancetta
- stuffed with cheese
- prosciutto
- creamy wine sauce
- creamy cheese or mushroom sauce
- egg and cheese batter
- veal sausage
- manicotti, cannelloni, lasagna, ravioli

Have it your way:

"Please don't put the bread on the table"

"Please hold the Parmesan cheese, bacon, olives, or nuts"

"Please hold the sauce on the pasta"

"May we split an order of-------?"

"Can you ask the chef to avoid using extra salt?"

"Please bring the salad dressing on the side"

"May I have a doggie bag?"

Good choice:

Antipasto: Marinated calamari, marinated mushrooms, steamed clams in white wine

Zuppa: Tortellini in broth, Pasta e fagioli (bean and pasta soup), Minestrone

Insalata: Arugula and Belgian endive, Insalata frutte di mare, Insalata di casa (house salad)

Pasta: Ziti Bolognese, Angel hair pasta with white clam sauce, Fusilli primavera

Entrees: Veal cacciatore, Chicken primavera, Chicken in wine sauce, Shrimp primavera, Shrimp marinara, Sole primavera

Sometimes we forget that pizza is Italian, since pizza is an American favorite that is eaten for lunch, dinner, and even cold for breakfast. Pizza dough is basically flour, yeast, salt, and water--virtually no fat, no cholesterol, and few calories. Tomato sauce is added next which is very low calorie. Cheese is added next and one slice contains 3/4 to one ounce of cheese (about 4-5 grams of fat).

The toppings you choose are crucial in deciding the "health" of your pizza.

Low-fat toppings include:	**High fat toppings include:**
mushrooms	extra cheese
onions	pepperoni
green peppers	sausage
broccoli	anchovies
eggplant	bacon
spinach	prosciutto
pineapple	meatballs

Deep-dish pizza is also higher in fat than traditional pizza. When ordering pizza, ask them to go easy on the cheese. Try to limit yourself to 2 slices (2 slices of medium cheese pizza is about 500 calories and 19 fat grams). Take the rest home for another meal; pizza makes great leftovers.

American Cuisine

Steakhouses

These restaurants generally serve the good ol' American meat and potatoes cuisine. You can eat healthy if you ask questions. Choose sirloin, top, and flank steak for lower fat as opposed to rib-eye and prime rib which tend to be higher in fat. Restaurants usually serve Prime cuts of meat which are higher in fat than Select or Choice grades of meat (which are usually stocked in grocery stores). Steak houses serve steaks beginning at 6 oz (smallest) ranging up to 16 oz (largest) with most sizes in the 10 oz range.

As we learned from Chapter 7, the human body needs 4-6 oz of protein per day (the entire day), and therefore a 10 oz would greatly exceed this, especially for one meal! Best bet is to ask the waiter or waitress about portion sizes **and** a doggie bag **before the food arrives**. This way it can be cut in half and saved for another meal. If it is out of sight, it won't be as tempting. Another option is to split a meal with your dinner partner and order 2 baked potatoes (many restaurants will allow you to do this). Remember, most restaurants want to please the customer. If your favorite steak house does not allow special requests such as these, tell the management and find a restaurant that meets your needs.

Ask for butter and sour cream on the side of the potato so you can add only the amount you want. Ask about diet salad dressings, and limit the creamy dressing such as blue cheese and ranch. Order tossed salad instead of coleslaw or potato salad (1/2 cup contains 10 grams of fat!)

Green flag:

- Top, sirloin, flank steak (6 ounces or less)
- baked potato (minus butter and sour cream)
- tossed salad (dressing on side)
- sautéed with onions, peppers, mushrooms
- BBQ sauce
- teriyaki sauce
- mustard (Dijon, Pommery)
- marinated and broiled
- charbroiled, barbecued

Red flag:

- Prime rib, rib eye, T-bone steaks (7 oz or larger)
- French fries
- creamy coleslaw, potato salad
- blue cheese, thousand island dressing
- smothered, pan fried

Have it your way:

"How many ounces is this steak?"

"We will be splitting a steak and ordering 2 baked potatoes"

"Please bring the butter and sour cream on the side of my baked potato"

"Do you have margarine instead of butter?"

"Do you have any low-calorie dressings?"

"Please bring my salad dressing on the side"

"I would like to substitute a baked potato for French fries"

"May I have a doggie bag?"

Good choice:

Salads: house salad with Italian, oil and vinegar, or low-calorie dressing on the side

Entrees: Sirloin tips, steak kabobs, New York Strip, flank steak, tenderloin, Sirloin steak (all steaks: 6 oz or less)

Side dishes: baked potato, rice pilaf, steamed vegetables

A few words about alcohol

Alcohol is a concentrated source of calories providing 7 calories per gram. Recent data show that alcohol consumption in the U.S. is very high, particularly among men, accounting for 5 percent to 7 percent of overall calorie intake.

Alcohol should be avoided when trying to lose weight. Calories provided by alcohol are "empty calories," meaning they provide calories but no nutrients. Alcohol can disrupt the digestive process of food, so that the absorption of vitamins and minerals is incomplete. (Having a vodka and orange juice for the vitamin C content does not serve a purpose!) Since alcohol follows the same metabolic pathway in the body as fat, alcohol is easily converted to body fat when excess calories are consumed. Let's look at some standard serving sizes and calories of alcoholic beverages:

12 ounces of regular beer (150 calories)
5 ounces of wine (100 calories)
1.5 ounces of 80 proof distilled spirits (100 calories)

It is easy to see how consuming a six-pack of beer in an evening significantly adds to your total calorie intake (6 X 150 = 900 calories!). Even though alcohol is fat-free, excess calories in any form are converted into fat and stored by the body as fat. And most importantly, alcohol can sabotage your weight loss efforts by acting as a disinhibitor (Chapter 5).

Fish and seafood restaurants

The message is loud and clear--fish is good for you! This is where you can easily get a low fat, healthy meal as long as you ask a few questions. A few wrong choices on the menu could lead to a nutritional disaster. **Example:**

5 oz serving broiled cod = 1 gram fat
5 oz serving fried cod = 44 grams fat

Order broiled fish, but limit the tartar sauce. Some restaurants will brush their broiled foods on the grill with butter or oil. To be on the safe side, you might want to ask for "broiled dry". Ask about portions, however most servings of fish are smaller than beef servings. Since fish is lower in fat, the calories will be lower.

Green flag:

- broiled, barbecued, steamed
- blackened, Cajun-style
- stir-fried, teriyaki
- grilled, mesquite-grilled
- marinated
- in tomato sauce, in marinara sauce
- kabobs
- sautéed in light wine sauce
- baked potato (butter and sour cream on side)
- cocktail sauce

Red flag:

- fried, deep-fried
- breaded and fried, batter-dipped and fried
- creamy, served in creamy sauce
- drawn butter (melted butter)
- hushpuppies
- French fries
- Newburg, Thermidor
- baked stuffed, stuffed and rolled
- baked in casserole
- tartar sauce

Have it your way:

"Can I have this broiled dry?"

"How many ounces is the fish?"

"Please substitute lemon wedges for drawn butter"

"Please substitute cocktail sauce for tartar sauce"

"Do you have any low-calorie or low-fat salad dressing?"

"Please bring the butter and sour cream on the side of my baked potato"

"Please bring an extra plate. We are going to share"

"May I have a doggie bag?"

Good choice:

Appetizers: Steamed clams, steamed oysters on the halfshell, marinated calamari, shrimp cocktail

Soups: Shrimp gumbo, fish chowder

Entrees: Baked or broiled fish or shellfish (all varieties), boiled Maine lobster, Alaskan king crab, bouillabaisse, cioppino

Fast Food

Good rule of thumb is **15 grams of fat or less for the meal**. Unfortunately French fries are never a good choice. Even the smallest order of fries is 12 grams of fat with large fries at 22 grams of fat. Fast food restaurants have yet to make an oven baked French fry. For entrees, we can divide the various selections up 3 ways:

Best bite (less than 10 grams of fat)
In-between bite (11 - 19 grams of fat)
Worst bite (20 or more grams of fat)

Best bite

Arby's light roast beef deluxe
Arby's light roast chicken deluxe
Burger King broiled chicken salad (w/2 Tbs light Italian)
Chick-fil-A chargrilled chicken sandwich
Chick-fil-A grilled'n lites
Domino's cheese pizza (2 slices)
Hardee's grilled chicken sandwich
Hardee's hamburger
Hardee's regular roast beef
KFC rotisserie breast without wing or skin
McDonald's chunky chicken salad (w/4 Tbs light vinaigrette)
McDonald's hamburger
McDonald's McGrilled Chicken classic
Taco Bell fiesta
All Taco Bell Border Lights:
- Light 7-layer burrito
- Light bean burrito
- Light burrito supreme
- Light chicken burrito
- Light chicken burrito supreme
- Light chicken soft taco
- Light soft taco
- Light soft taco supreme
- Light taco
- Light taco supreme

Wendy's baked potato plain
Wendy's chili
Wendy's grilled chicken salad (w/fat-free French dressing)
Wendy's grilled chicken sandwich
Wendy's hamburger

In-between bite

Arby's regular roast beef
Chick-fil-A nuggets (8 pack)
KFC rotisserie quarter breast and wing w/skin
Pizza Hut pizza (2 med slices from thin and crispy)
Taco Bell bean burrito
Taco Bell chicken burrito
Wendy's single (plain)

Worst bite

Arby's bacon and cheddar deluxe
Burger King BK broiler (drop the mayo and lose 10 fat grams)
Burger King chicken sandwich
Burger King double whopper
Burger King double whopper with cheese
Hardee's big deluxe
Hardee's hot dog with chili
KFC extra crispy thigh
McDLT
McDonald's McChicken
McDonald's McNuggets (9-piece)
McDonald's quarter pounder with cheese
Pizza Hut personal pan pizza
Taco bell big beef burrito supreme
Taco Bell mexican pizza
Taco Bell taco salad
Wendy's baked potato with chili and cheese
Wendy's big bacon classic

*See Appendix A for total fat grams of fast foods

Chapter 9 Study Questions

1. Why are buffet-type restaurants so harmful for the weight watcher?

_____

_____

2. Name a healthy low-fat meal at a Chinese restaurant

_____

3. Name a healthy low-fat meal at a Mexican restaurant.

_____

4. Pizza can be part of a low-fat meal plan. **True or false**

5. What is an acceptable portion of steak at a steak house?

_____

6. What does "broiled dry" mean?

_____

7. Fast food entrees should be no more than _____ grams of fat to be part of a healthy low-fat diet.

8. Name 4 healthy choices at a fast food restaurant.

   a _____

   b. _____

   c. _____

   d. _____

9. A McDonald's hamburger can be part of a low-fat meal plan. **True or False**

10. A Taco Bell taco salad is a healthy choice for lunch. **True or False**

CONGRATULATIONS!

Completing this manual is your first step to healthier eating and exercise habits. Losing weight and maintaining your weight loss can be a difficult challenge that requires constant vigilance, commitment, and frequent self-evaluation. You may have slips from time to time, yet recognizing these and getting back on your program are half the battle.

The chapters and appendix of this manual contain valuable information that you may use often throughout your Navy career. Refer to it regularly. If you are married, you may want to share the information in this manual with your spouse or other family members. Although healthier eating habits begin with you, your family may benefit from additional nutrition guidance. If you are single, share the information on eating in the general mess, and eating away from home with friends or shipmates.

If you need additional assistance with the information presented in this manual, speak with your CFC. For specific nutritional guidance, contact your local Navy Dietitian at the nearest Naval Hospital. Good luck and healthy eating!

APPENDIX

Appendix A

FAT GRAMS OF COMMON FOODS

Beef, pork, lamb, and veal	Total fat grams
Beef, 3.5 oz., cooked, fat trimmed of visible fat grams	
Beef fat, 1 Tbs	13
Brains	12
Brisket, lean	15
Corned beef	19
Extra lean, round/sirloin	14
Lean, ground chuck	16
Regular	19
Ground beef, cooked:	
Liver	5
Pot roast, chuck	9
Prime rib	17
Rib-eye steak	12
Round steak	7
Short ribs	18
Summer sausage	25
Tenderloin, top loin	8
Pork, fresh, cooked	
Chitterlings, 3 oz	25
Chop, 1 large, 3 oz lean	9
Italian/Polish sausage, 3 oz	23
Pork liver or kidneys, 3 oz	4
Pork ribs, 1-2 large	26
Pork roast, 3 oz lean	11
Pork steak, 3 oz lean	15
Sausage, 4 links	16
Pork, cured	
Bacon, 3 slices	10
Bacon, Canadian style, 3 slices	4
Bologna, 2 slices, 2 oz	9
Breakfast strips, 3	13
Frankfurter, 1	13
Ham, canned, 3 oz	9
Ham, extra lean, 3 oz	4
Salami, cooked, 2 oz	11
Salami, dry, 1 oz	7
Lamb, 3 oz chop	8
Leg of lamb, 3 oz lean	7
Veal, 3 oz chop	7
Rib roast, 3 oz lean	5

Poultry and Fish

Egg, whole, 1 large 5
White only, 1 large 0
Yolk only, 1 large 5
Chicken, 1/2 breast, med;
Chicken fat, 1 Tbs 13
Chicken frankfurter 9
Chicken liver, 1 1
Chicken roll, 2 slices, 2 oz 4
Chicken thigh, roasted, no skin 6
Fried, batter dipped 19
Fried, flour dipped 9
Roasted, skin eaten 8
Roasted, skin removed 3
Duck, roaster, 1/4 duck:
Flesh and skin 54
Flesh, skin removed 13
Turkey, roasted, breast, 3 oz 3
Dark meat, 3 oz, cooked 11
Turkey ground, 3 oz cooked 11
Turkey ham, 2 slices, 2 oz 3
Fish, fresh or plain frozen, 3 oz. cooked:
Cod and Pike 1
Fish sticks, frozen, 3 10
Flounder and sole 1
Salmon, fresh 9
Snapper and Ocean perch 2
Tuna in water, 3 oz 1
Tuna, in oil, drained 3 oz 7
Whitting 1

Shellfish:

Clams, steamed, 3 oz 2
Breaded and fried 10
Crab meat, 3 oz cooked 1
Lobster, 3 oz cooked 1
Oysters, 6 Eastern or 2 Pacific 2
Scallops, 4 large or 10 small 1
Shrimp, canned, 3 oz 2
Breaded and fried, 5 large 5
Cooked, moist heat, 5 large 1

Dairy products

Milk, 1 cup

1% fat 3
2% fat 5

- 3.3% or whole 8
- Buttermilk 2
- Chocolate, 2% fat 5
- Cocoa, whole milk, 1 cup 9
- Eggnog, 1 cup 19
- Evaporated milk, skim 1
- Evaporated milk, whole 19
- Skim or non-fat 0
- Sweetened condensed 27

Creams and creamers

- Frozen dessert topping 1 Tbs 1
- Half and half, 1 Tbs 2
- Heavy cream, 1 Tbs 6
- Imitation sour cream, 1 Tbs 3
- Non-dairy creamer:
  - Liquid, 1 Tbs 1
  - Powdered, 1 tsp 1
- Sour cream, 1 Tbs 3
- Sour half and half, 1 Tbs 2

Cheese, 1 oz

- American process 9
- Cheddar or colby 9
- Cheese food 7
- Cheese spread 6
- Cream cheese, 2 Tbs 10
- Mozzarella, part skim 5
- Muenster 9
- Neufchatel cheese, 2 Tbs 2
- Parmesan, grated 2 Tbs 4
- Swiss or provolone 8

Cottage cheese, 1/2 cup

- Creamed, 4% fat 5
- Dry curd 0
- Low-fat, 2% fat 2
- Ricotta, part skim, 1/2 cup 10

Yogurt, 8 oz (1 cup)

- 1% low fat, fruited or plain 3
- non fat, plain or fruited 0
- Regular low fat, fruited 5
- Regular low fat, plain 4

Fruits and vegetables

All fruits (except avocado) 0
All vegetables, fresh, canned or plain frozen 0
Avocado, 1 medium 30

Potatoes:

- Au Gratin from mix, 1 cup 6
- Baked, plain, 1 med 0
- Baked, with 1 Tbs soft margarine and 1 Tbs sour cream 14
- Baked, with 2 Tbs butter 22
- French fries, fried in veg oil, 30 strips 24
- Hash brown, frozen, 1 cup 18
- Mashed, 1 cup with milk and margarine 9
- Potato chips, 30 21
- Potato salad w/mayo, 1 cup 21
- Scalloped, 1 cup 10

Beans, grains, and nuts

Beans:

- Plain, cooked, 1 cup 1
- Pork and beans, canned, 1 cup 7
- Refried beans, canned, 1 cup 3
- Tofu, 4 oz 5

Breads and Pastries:

- Bagel, plain 1
- Biscuit, from recipe, 1 10
- Bread, 1 slice 1
- Bun, hot dog, hamburger, 1 2
- Cornbread, 2 1/2 square 6
- Croissant, 1 12
- Danish pastry, fruit 4 1/4 13
- Donut, 1 12
- English muffin 1
- French toast, 1 slice 7
- Muffin, bran, 1 med 5
- Pancakes, 1, 4 inch 2
- Tortilla, corn, 6-7 inch 1
- Tortilla, flour, 7-8 inch 3
- Waffle from mix, 1 10

Cereal, 1 ounce 1

Crackers:

- Cheese, 10 6
- Round, snack, 4 3
- Saltines or wheat, 4 2

Pasta, rice, etc.:

- Bread stuffing, 1 cup 26
- Chow mein noodles, 1 cup 14
- Egg noodles, 1 cup cooked 2
- Rice, plain, 1 cup cooked 0

Nuts and seeds, 1 ounce:

- Almonds, dried 15
- Cashews, oil roasted 14
- Mixed nuts, oil roasted 16
- Peanut butter, 2 Tbs 16
- Pecans or English walnuts 19
- Pumpkin or squash kernels 13
- Sunflower seed kernels 14

Fats and condiments

Table and cooking fats:

- Butter, 1 Tbs 12
- Lard, 1 Tbs 13
- Margarine, 1 Tbs
  - Stick 11
  - Tub, soft 11
  - Spread, soft (60% fat) 9
  - Imitation (40% fat) 13
- Vegetable oil, 1 Tbs
  - all types 14
- Vegetable shortening,
  - solid, 1 Tbs 13

Condiments and sauces:

- Barbecue sauce, 1 Tbs 1
- Beef bouillon, 1 cup 1
- Catsup, 1 Tbs 0
- Gravy, 1/4 cup, canned 1-3
  - from dry mix, 1/4 cup 0
- Hollandaise sauce, 1/4 cup 5
- Jam, jelly or honey, 1 Tbs 0
- Mayonnaise, 1 Tbs 11
- Mustard, 1 Tbs 0
- Nacho cheese sauce, 1/4 cup 8
- Olives, 3-4 2
- Peanut butter, 1 Tbs 8
- Salad dressing, 1 Tbs
  - regular, bottled 6-8
  - low calorie 2
- Soy sauce 0
- Sweet and sour sauce 0
- Tartar sauce, 1 Tbs 8
- White sauce, 1/4 cup 3

Snacks and desserts

Cake, 1/12 of 9 inch cake:

Angel food, no frosting 0
Carrot cake, with frosting 29
Chocolate, no frosting 8
Pound cake, 1/16 of loaf 9
Yellow cake, no frosting 6
Cheese cake 33
Frosting, ready to eat, 1/12 of pkg 7
Cookies:
Brownie, 2 inch square 7
Chocolate bar, 1 ounce 10
Chocolate chip, 1 5
Coconut, 1/4 cup 8
Custard, baked, 1/2 cup 7
Gelatin, 1 cup 0
Graham crackers, 2 squares 2
Peanut butter, 1 5
Pudding, low fat milk, 1 cup 6
Frozen dessert, vanilla, 1 cup:
"light" ice cream 8
10% fat ice cream 15
16% fat ice cream 24
Frozen yogurt, non-fat 0
Popsicle or juice bar 0
Sherbet, orange, 1 cup 4
Pie, 1/6 of 9" pie from recipe:
Chocolate cream 31
Custard 15
Fruit 27
Lemon meringue 22
Pecan 36
Pumpkin 19
Salty snacks:
Popcorn, 3 cups popped
air popped 1
with vegetable oil 6
microwave, butter 8
Potato chips, 30 20
Pretzel sticks, 20 0
Rice or popcorn cake, 1 0
Tortilla chips, 2 ounces 15

Fast foods

Burgers

Burger King Double whopper 56
Burger King Double whopper w/cheese 63

Appendix B

RECIPE MODIFICATIONS

When a recipe calls for	Choose these instead
Regular ground beef	Extra-lean ground beef
Baking chocolate 1 oz	3 Tbs powdered cocoa plus 1 Tbs oil
Meat Juice for gravy	Skim or pour off fat first
Spaghetti sauce	Homemade - omit the oil Store bought - reduced fat
Marinating meat	Use wine, fruit juices or broth instead of drippings
Oil in baking	Use applesauce instead for muffins, quickbreads
1 whole egg	1/2 cup egg substitute or 1 egg white plus 1 Tbs of vegetable oil or 2 egg whites
1 cup butter	1 cup soft margarine
1 cup solid vegetable shortening	3/4 cup liquid veg oil
1 cup whole milk	1 cup skim milk
1 cup heavy cream	1 cup evaporated skim milk
1 cup sour cream	1 cup non-fat plain yogurt or 1 cup non-fat cottage cheese whipped in a blender to a smooth consistency
1 oz regular cheese	1 oz low fat/non-fat cheese
8 oz cream cheese	8 oz low fat/non-fat cream cheese or half the amount you normally eat
2 slices bacon	1 Tbs imitation bacon bits or 1 oz lean ham
1 Tbs mayonnaise	1 Tbs low fat/non-fat mayonnaise or 1 Tbs plain low fat yogurt

Appendix C

FREQUENTLY ASKED QUESTIONS

Why do I always gain my weight back that I lose?

There is overwhelming evidence that humans have a constant weight range that they naturally maintain, and therefore, always return to. This is known as the set-point theory. It acts much in the same way that the human body returns to its own temperature level following illness.

Numerous studies have been done which support this theory. Most notably is a study in which "starved" volunteers, once given free access to food, eat ravenously until their weight returns to its normal level, and appetite and calorie intake level off to pre-diet amounts. Another study illustrates this in which normal weight volunteers are experimentally force-fed to increase weight by 25 percent. Once volunteers are left on their own to eat whatever they want, their weight returns to normal levels after a period of time with no attempts to control weight in either direction.

It is this set-point that explains why dieters return to pre-diet weight once they stop restricting food intake. People may have different set-points throughout their lifetime, perhaps 125 pounds in their 20's, 150 pounds in their 40's, etc. It is believed many factors contribute to determining one's set-point. Factors such as metabolism and the number of fat cells may work together to "set" a level of weight that is normal for that person.

If all this sounds a little depressing, don't despair. It is believed that set-point can be changed by exercise. Exercise acts to increase resting metabolic rate which means even when just sitting around, the body burns more calories. **The best predictor of who will lose weight and keep it off is those people who make a lifelong commitment to regular exercise.**

Are a person's size and weight hereditary?

As the saying goes, "the apple doesn't fall far from the tree" is somewhat accurate when it comes to body type. The tendency to be overweight runs in families, and general body build and fat distribution is to some degree a product of your genes. Research has established that heredity plays a part in human obesity. Since family members share environments as well as genes, it has been difficult to determine just how much influence heredity has on obesity. Studies done with twins and adoptees have allowed considerable progress in this area, yet it is unclear just how much is related to genetics and how much is environmental.

Don't be discouraged if one or both your parents are overweight. Although you may have more difficulty than someone else with different genes, this does not mean you cannot control your weight by diet and exercise. Lifestyle habits can make a difference for most people, no matter what their genetic legacy.

Is it true that upper body fat is more dangerous than fat on the thighs?

Yes. Research shows that a person's risk of developing heart disease and diabetes is greatly increased when fat is distributed above the waist, such as the abdomen area. Males tend to gain weight in the waist which places them at greater risk than females, who tend to gain weight below the waist. Sometimes this is called the "apple" or the "pear" referring to the shape of the body. The apple shape is not exclusively male. The hormonal changes of menopause tend to cause a shift of weight from the hips to the waist. In addition, women after the age of menopause are at increased risk of heart disease, like males.

My CFL makes me run 1.5 miles for my fitness enhancement program. I would rather walk briskly for 30-40 minutes. What should I do?

The FEP should be geared to meet the deficiency of the member. If the PRT failure was for body fat, a longer duration exercise session would be more beneficial for losing body fat. If the PRT failure was for failing the run, then the member should be running 1.5 miles or longer to build endurance. Many people who are overweight may not be able to run for a 40-minute period of time. Brisk walking (in your target heart rate range) is an aerobic exercise. A 12-minute mile is a good pace, however you should be working towards a 10-minute mile. Believe it or not, many experienced runners have started with a good walking program. Always keep in mind as you progress in your walking program, you should be covering greater distances in the same amount of time. Regardless of whether you are walking or running, the key is level of exertion. You should strive to maintain a target heart rate of 65-80 percent of your maximal heart rate during your entire aerobic exercise session.

Navy policy requires exercise for all active duty members and states that exercise sessions should consist of at least 30-40 minutes of activity, to include 20 minutes of brisk aerobic activity, a strength and flexibility component and a warm-up and cool-down period. It further states that aerobic conditioning is not limited to running, but any repetitive exercise that employs large muscle groups, is continuous in nature and elevates heart rate for a period of at least 20 minutes. Swimming, cycling, stair climbing, aerobic dance, jumping rope, brisk walking, rowing, and running in place are examples of acceptable aerobic activity.

Keep in mind that command fitness leaders have to be able to monitor their member's attendance and progress, so some structure is needed for a group of people exercising together. Certainly if runners can be monitored, then walkers can be monitored just as easily. But remember, the best way to prepare to take the 1.5 mile run on the PRT is by running. If you are exclusively walking or using a single piece of exercise equipment, you may come up short on the 1.5 mile run. Make sure you balance your physical activities to prepare you to meet body fat standards as well as perform well in the PRT.

I want to stop smoking, but I'm afraid I'll put on even more weight. What should I do?

It's true that quitting smoking is often associated with a modest increase in weight of about 4 to 6 pounds, on average. The cause of weight gain is related to factors such as return of optimal taste and smell (which makes foods taste better), which results in increased food intake. Smoking is a greater risk factor for death than being overweight, and therefore it should always be encouraged despite the small amount of weight gain that may result. Once you are accustomed to your "smoke-free" self, weight loss should resume with diet, exercise, and behavior modification.

What about liposuction? Does liposuction have a role in treating obesity or reducing body fat measurements?

By definition, liposuction is removal of fat under negative pressure, applied by means of a hollow suction tube tunneled through the subcutaneous fat by multiple small incisions.

Liposuction **is not** a treatment for obesity! The ideal candidate for liposuction is young and in good general health, with normal body weight and good skin tone.

While liposuction is available to active duty members at some Naval hospitals, such cosmetic-surgery is extremely restricted. In general, liposuction is limited to individuals who have

localized areas of fat despite meeting height/weight standards. While liposuction may reduce waist and hip measurements somewhat, it is unlikely that a liposuction procedure would change a member's measurements from out of standards to within standards.

I've been trying to lose weight for so long and nothing seems to work. What am I doing wrong?

When what you're doing isn't working, it is time to reevaluate your weight loss strategies. First, keep a food and exercise log. Write down everything you eat after you eat it, **not** at the end of the day. Add up the fat and calories. Women need to be at or below 1,500 calories and 50 grams of fat; men need 1,800 calories and 60 grams of fat or less (on average) to reduce body fat. Be sure to record your beverages. Hundreds of calories can be hidden in juices, sodas, and alcohol.

Studies have shown that overweight people tend to underestimate food intake, and overestimate exercise. You may need to weigh and measure your foods as a "reality check" if you believe you are "diet-resistant."

How is your meal spacing? Make sure you eat something low in fat within three hours of getting out of bed, and eat two more meals at 3-5 hour intervals after you get up. Routinely going without food for long periods of time can trick your body into believing food is scarce, and body fat stores must be conserved. Bedtime snacks are not necessary though. We can easily handle a 12-14 hour fast when we are asleep.

Review your exercise log. How often do you consistently exercise aerobically at 4-5 days per week? Remember, exercising only 3 days a week will **maintain** your current fitness and body fat. You need at least 4-5 days per week to **reduce** body fat levels. How long are your exercise sessions? Are you on and off the track or treadmill in 15-20 minutes? If so, you are not exercising long enough. To burn body fat, you need at least 40-45 minutes of aerobic exercise that employs the large muscle groups such as the thighs and buttocks. Exercise should not leave you breathless, and a longer duration, lower intensity workout is effective at reducing body fat.

I've heard that different supplements can help you lose weight and improve muscle. Can you tell me anything about carnitine and chromium?

When it comes to nutritional supplements, there is always something new on the market being reported as the latest nutritional discovery. It is very difficult for the layperson to understand the myriad of nutrition advice available. In most cases, the nutrition claims sound scientific and reasonable, however at closer look, the research just isn't there to support these claims.

Carnitine is a compound synthesized in the body from glutamate and methionine. Carnitine (or L-carnitine) has been advertised as a "fat burner" that will improve cardiovascular function and muscle strength, and delay the onset of fatigue. Their claim is that carnitine increases fat utilization during exercise. No research supports increased use of fatty acids after carnitine ingestion, and no increase in performance has been demonstrated after its use.

Chromium is a mineral which is required for normal lipid and carbohydrate metabolism and assists insulin with carbohydrate and protein metabolism. Chromium acts as part of the glucose tolerance factor and may improve glucose tolerance in chromium-deficient patients.

Chromium is being sold in health food stores as chromium picolinate with claims that it will burn body fat while building muscle. Much of the chromium hype is based on a few flawed

studies which showed chromium improved muscle mass during strength training. Many well-controlled studies have been done in this area and have shown less promising results. In addition, there is no data to support the claim that chromium picolinate improves weight loss. More research is needed. While prescription medications undergo rigorous testing before approval, nutritional supplements do not. If the nutritional claim sounds too good to be true, it probably is!

Chromium is found in brewer's yeast, oysters, liver, and potatoes, while seafood, whole grains, cheeses, chicken, meats, bran, fresh fruits and vegetables contain moderate amounts. Eating too many refined foods, such as white bread and sweets (which are low in chromium) may actually increase your need for chromium (to help process carbohydrates). A range of 50 to 200 micrograms has been designated as safe and adequate. While chromium content is difficult to measure in foods, most people get enough from the foods they eat. It is best to stick with food sources of chromium instead of a supplement. Getting too much chromium could hamper your absorption of iron and zinc. Be aware of nutritional supplements that claim quick and easy weight loss. The only thing getting smaller may be your wallet!

I am taking birth control pills. Are these preventing me from losing weight?

Probably not. Studies that have been done on women taking birth control pills show that some lose weight and some gain weight, but most stay the same. Of course, if you start eating more or exercising less, you will gain weight regardless of whether you are taking the pill. Those women who do gain weight despite watching their diet and keeping up with their exercise probably do so because of the slightly "anabolic" effect that some birth control pills can have. Although this is not to the extent seen in athletes who may take anabolic steroids to build muscle mass, one of the hormones in birth control pills may slightly increase muscle mass.

I am going through menopause. Is this preventing me from losing weight?

Humans tend to gain weight as they age. This is due to a number of factors including a changing "set point," a change in muscle mass, a change in fat distribution and often a decrease in physical activity. Menopause generally occurs around the age of 50, which is the time when all of these factors come into play. This doesn't mean, however, that you have to get fat during menopause. A well-balanced, low-fat diet combined with regular exercise will allow you to maintain normal body weight throughout your life.

I've heard a lot in the media recently about weight loss pills. Can these help me lose weight?

You are most likely referring to "Fen-Phen" which has gotten a lot of media coverage recently. While you may think this is a new drug, the truth is it has been approved in the U.S. since 1973. "Fen-Phen" is an acronym for two drugs **fenfluramine** and **phentermine**. These medications are commonly taken together, and when used with conventional diet, exercise, and behavior modification, act to decrease appetite therefore causing weight loss.

Fenfluramine acts by raising the level of serotonin (a chemical in the brain) which in essence tricks the brain into believing that the stomach is full. The drug itself does not produce weight loss, but allows it by suppressing appetite. Phentermine is an amphetamine-like drug. Side effects of fen-phen include drowsiness, dry mouth, and short-term memory loss.

FDA approval of fen-phen is limited to short-term use (defined as three months or less), although clinical trials have been done with long-term use of up to three years. Individual

weight loss results vary, but patients generally lose 5-10 percent of initial body weight. To put this in perspective, a person weighing 225 pounds would drop to 214 to 202 pounds. While this may seem like a "magic bullet" for weight loss, fen-phen works only while used. Once patients discontinue the medication, weight returns to previous levels.

Dexfenfluramine is another drug that has just received FDA approval in the U.S., and has been approved for many years in other countries. FDA approval will expand the use of dexfenfluramine to long-term use. The medication is similar to fenfluramine in both its actions on the brain and weight loss results. As with fen-phen, weight gain returns once patients stop taking it.

As with all medications, dexfenfluramine is not without its risks. A serious (but rare) side effect of primary pulmonary hypertension has been reported with dexfenfluramine use. Because of this, health officials in Europe have limited dexfenfluramine use to individuals who are at least 30 percent above desirable weight (those with significant health risks due to their obesity). To summarize, currently available medications available by a doctor's prescription will produce weight loss while taken, yet have some risk involved. Unfortunately, these medications have not been successful at producing permanent weight loss.

I heard they discovered an "obese gene" in mice. Does this mean I can quit dieting?

Until recently, it was accepted that overeating was a characterologic disorder; that those who suffered from obesity simply lacked willpower. New knowledge of physiology, biochemistry, and genetics has led scientists to reexamine this accepted belief. It is no longer doubted that obesity is the consequence of both voluntary behavior and of defined and undefined metabolic factors.

Scientists have long recognized that some forms of obesity are hereditary, but the links between fat and genes remained a mystery until December 1994. That is when the obesity gene was discovered in mice. From that, a human obese gene was cloned. Found in fat cells, the obese gene makes a protein "message" that travels via the bloodstream to the brain and says "I've had enough food, stop eating." In the strain of obese mice that were studied, the protein message is mutated and the message never gets to the brain. Since the principle action of this protein is to make the animal thin, researchers have named this obese gene "leptin" from the Greek root Leptos which means thin. Grossly obese mice were given daily injections of leptin, and after one month, food intake and body weight dropped by 50 percent.

As encouraging as these results are, they don't necessarily translate to obese humans (keep in mind that while mice "feed", humans dine, celebrate, feast, etc.). Early studies done with the obese human gene suggest that the common forms of human obesity aren't due to anything as simple as a flaw in the obese gene. Obesity in humans is due to many factors, both environmental and genetic.

Because of this, researchers had to find mice (with obesity traits) that more closely resemble obesity in humans. They found a strain of mice that grow plump when their diet contains too much fat. After fattening up the mice, researchers injected them with leptin. In response to the leptin, the mice ate less high fat food and lost weight. However there is another strain of obese mice that are resistant to leptin. What this suggests is that there are probably various types of obesity in humans. Research is now focusing on the brain to determine why the message to stop eating is not getting through despite the presence of leptin in fat cells.

Much work needs to be done before considering drug therapy with leptin in humans. First researchers need to establish safety of leptin in animals. If leptin is found to be safe, there will be a problem with drug delivery. Since leptin is a protein, it would be destroyed in the digestive tract. It would therefore have to be injected, probably daily, much in the same way insulin must be injected. Although many people probably wouldn't mind daily injections to control their obesity, human testing is still years away.

While all this new science may seem like a "cure" for obesity, any potential treatments with drugs or genes must be **in addition** to diet and exercise. Reducing body fat with leptin while eating a high-fat diet will carry its own health risks. One interesting note, researchers found that diet and exercise help the brain respond to leptin.

Many people ask the question, "if this is a mutation in a gene, why are we seeing the increase in obesity as compared to 50 years ago?" The theory is that this is not a sudden mutation, but that it has always been there. These were our "survival genes" for times when food was scarce. Now that we are surrounded by an abundance of high-fat foods and have a sedentary lifestyle, these genes make it easier for us to gain weight and store body fat. Maintaining a healthy diet and an active lifestyle are the best defenses for preventing obesity.

Appendix D

ANSWERS TO STUDY QUESTIONS

Chapter 1

1. 20 percent
2. more
3. false
4. decrease
5. a. moderate calorie restriction
   b. increased aerobic exercise combined with strength training
   c. a low-fat/high fiber diet
   d. behavior/lifestyle change
6. false
7. true
8. false
9. documenting one's daily habits such as a food and exercise to look for patterns in behaviors
10. underestimate, overestimate

Chapter 2

1. carbohydrate, protein, fat
2. complex, simple
3. 9 calories per gram
4. polyunsaturated, monounsaturated, saturated
5. two
6. animal foods
7. 30 percent
8. 66, 50
9. 5 fat grams
10. 9 fat grams

Chapter 3

1. the rate at which the body burns calories
2. a. energy required in resting metabolism
   b. thermal effect of food
   c. calories burned during physical activity
3. 20 percent
4. the increase in metabolic rate that is stimulated by eating
5. carbohydrate
6. fat
7. a. aerobic (continuous, non-stop) activity
   b. 40-45 minutes in duration
   c. 5 times per week
   d. strength training
8. six
9. strength training builds muscular strength and more muscle means a higher metabolism which burns fat faster.

10. alternating between different types of exercise to work different muscle groups and vary the routine

Chapter 4

1. 3,500 calories
2. (individual response here)
3. method of meal planning using portion sizes of food groups to monitor calorie intake
4. starch, meat, vegetable, fruit, milk, fat
5. portion control
6. deck of cards or a woman's palm
7. a fist
8. tends to decrease metabolism
9. true
10. (individual response here)

Chapter 5

All study questions in this chapter ask for individual responses

Chapter 6

1. To inform consumers of the nutritional content of their foods so that they make informed decisions regarding their diet.
2. portion sizes are designed to be the same for similar foods to prevent companies from misleading the public.
3. to reflect the change in focus of American's health from diseases of malnutrition to diseases related to obesity.
4. this shows what percent of the food has contributed to a 2,000 calorie diet.
5. serving size, calories, total fat in grams
6. calorie
7. how many fat calories the food provides
8. both are carbohydrates, but sugar has no nutritional value other than calories; complex carbohydrates have vitamins and minerals.
9. a food that provides calories, but no nutritional value
10. 32 fat grams

Chapter 7

1. true
2. borderline high
3. saturated fat
4. (individual responses here)
5. as part of a prudent diet, it is recommended that all Americans reduce their sodium intake. Recent studies show that the higher the intake of sodium, the higher the blood pressure.
6. (individual responses here)
7. fiber provides bulk to the diet which helps you to feel full, while providing no additional calories to the diet.
8. fruits, vegetables, whole grain bread, whole grain cereal
9. (individual responses here)
10. fluid

Chapter 8

1. 1 percent milk
2. put a suggestion in the food service officer's suggestion box
3. potato bar with healthy toppings, Fajita bar with chicken or turkey, baked chicken on the speedline.
4. 10 grams fat breakfast, 25 grams fat lunch, 25 grams fat dinner
5. 9-12 teaspoons
6. 15 grams fat
7. tamale pie, hamburger steak, chili con carne
8. true
9. cheese, bacon, mayo, olives
10. cereal with 1 percent milk, 2 slices toast with 1 pat margarine, orange juice, 1 banana

Chapter 9

1. because there are no limits on portion control, and most of the items are loaded with calories and fat
2. beef and broccoli on white rice, unsweetened iced tea
3. chicken tostada (no sour cream or guacamole)
4. true
5. 3-4 ounces
6. that the meat or fish was not basted with anything on the grill
7. 15 grams
8. a. McDonalds's hamburger
   b. Burger King broiled chicken salad
   c. Hardee's hamburger
   d. Taco Bell Border Light chicken soft taco
9. true
10. false

Appendix E

RECOMMENDED READINGS

You may wish to purchase some books or manuals that deal with weight control and maintaining weight loss. These books can provide an additional source of information and support. LT Cox, a registered dietitian, has compiled a list of recommended readings. The following are her comments as a clinical professional and do not constitute an endorsement by the Department of the Navy. These books may be purchased at a book store, by a specific company, or checked out at your local library. When applicable, phone numbers for ordering books are provided.

Bailey, C. (1991). The New fit or fat. Boston: Houghton Mifflin.

Barlow, D. & Rapee, R. (1991). Mastering Stress: A lifestyle Approach. The Learn Education Center, 1555 W. Mockingbird Lane, Suite 280, Dallas, TX 75235 (1-800-736-7323).

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Appendix F

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