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Facilitating Healthy Nutrition
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http://www.move.va.gov

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Facilitating Healthy Nutrition

Introduction

The VA National Center for Health Promotion and Disease Prevention (NCP), Veterans Health Administration (VHA) Office of Patient Care Services with input from the field, developed a Weight Management Program for Veterans (MOVE!®). This program is based on the NIH Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report (1998)[1] and the United States Preventive Services Task Force (USPSTF) Screening and Interventions for Obesity in Adults: Summary of the Evidence for the US Preventive Services Task Force [2] and Screening for Obesity in Adults .[3]

The following resources provide guidance to VHA clinicians for implementation and maintenance of weight management programs:

- Handbook 1101: Managing Overweight and/or Obesity for Veterans Everywhere (MOVE!) Program[4]
- Joint Veterans Affairs (VA)/Department of Defense (DoD) Clinical Practice Guideline for Screening and Management of Overweight and Obesity (CPG) (2006)[5]

The MOVE! Reference Manual addresses the full spectrum of weight management. The manual consists of topic-specific chapters, and each topic should be considered in relation to others.

General Information

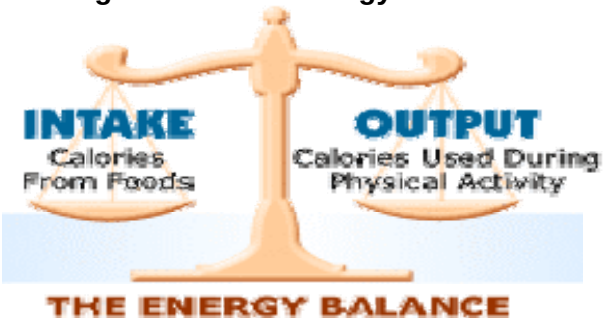
This chapter provides both basic and advanced nutrition information that staff can use when working with Veterans to set nutrition goals and problem-solve barriers to healthy dietary changes.

Definition of Nutrition Terms and Concepts

Energy Balance

Body weight is determined by the balance between energy intake and energy expenditure (see Figure 7-1). When energy intake is less than expenditure, weight loss will occur. When energy intake exceeds expenditure, weight gain ensues. To maintain weight, intake must be balanced with expenditure. Overweight/obesity is usually the result of a net energy surplus over a long period of time (months or years).

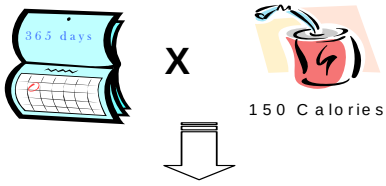
Figure 7–1: The Energy Balance



When we consume more energy (calories) than we spend, our body stores the extra as body fat. One pound represents an approximate surplus of 3,500 calories, no matter whether the extra calories came from fat, protein, carbohydrate, or alcohol. An example of an unnecessary calorie surplus is shown in Figure 7-2.

Figure 7–2: Extra Weight From Unnecessary Calories

Drinking a can of cola every day for a year:



54,750 Calories

Since 1 lb equals 3500 Calories

54,750 / 3500 =

15.6 lbs of unnecessary weight per year

Adipose Tissue

Adipose tissue is the scientific term for body fat. Adipose tissue increases by increasing the size of cells (hypertrophy), the number of cells (hyperplasia), or both. Hyperplasia can occur throughout life, but its occurrence is not random. It is influenced by the capacity of existing cells. Once the maximal size/capacity of fat cells is reached, hyperplasia can occur. With weight or fat loss, the number of fat cells is not reduced;

only their size is reduced. Hypertrophy appears to depend on diet, and hyperplasia appears to depend on genetics and diet.[6]

Food

Food (including beverages) is any substance, usually composed primarily of carbohydrates, fats, water, and/or proteins, that can be ingested by an animal or human for nutrition or pleasure. Items considered food may come from plants, animals, or substances in other categories, such as fungus or fermented products like alcohol. Foods are grouped into the following categories, based on the nutrients they provide:

- Grains
- Fruits
- Vegetables
- Legumes (beans), seeds, and nuts
- Meat, poultry, fish,
- Eggs
- Dairy
- Fats, oils
- Refined sugars

Diet

Although most people think of the word "diet" as something one does to lose weight, diet technically refers to a selection of foods. We choose our diet based on personal preference, family tradition, cultural background, and socioeconomic influences.

Nutrients

Nutrients are defined as substances that one consumes to function, grow, and maintain health. The two types of nutrients are macronutrients (carbohydrate, protein, and fat) and micronutrients (vitamins, minerals). The basic required nutrients are water, carbohydrate, protein, fat, dietary fiber, vitamins, and minerals.

Energy from Food

A calorie is a measurement unit that represents the amount of energy generated from nutrients and utilized by the body. In scientific contexts, "calorie" (with a lower-case c) refers to the small calorie and "Calorie" (with a capital C) refers to the kilocalorie (1,000 calories). However, in the context of nutrition, what is commonly referred to as a "calorie" is actually a kilocalorie (Calorie), often abbreviated as "kcal." Three nutrients (carbohydrate, protein, and fat), along with alcohol, provide energy in the form of calories. Table 7-1 lists the number of Calories per gram of these nutrients.

Table 7–1: Calorie Density

Energy source	Calories (kcal) per gram
Carbohydrate	4
Protein	4
Fat	9
Alcohol	7

Carbohydrate
Carbohydrate, often abbreviated as CHO, is a combination of carbon, hydrogen, and oxygen. CHO is usually the body's main source of energy and serves as the primary fuel for the brain. Starch (complex CHO) and sugar (simple CHO) are the major types of carbohydrates. Complex carbohydrate is made up of linkages of single or simple carbohydrate/sugars. Grains and vegetables are sources of starch (complex CHO). Fruits, vegetables, and dairy provide natural sugar (simple CHO). Soft drinks, candy, and desserts are examples of foods with added sugars.

Fiber, another type of carbohydrate, promotes health in several ways. It aids digestion by promoting regularity and preventing constipation. It also offers protection from some diseases. High-fiber diets aid blood glucose control and reduce cholesterol levels and risks for some cancers. Fiber also supports weight loss and weight management. Because it is not digested and absorbed, fiber does not contribute to caloric intake. Another way in which it supports weight management is by increasing the sensation of satiety. Fiber is categorized as soluble (dissolves in water) and insoluble (does not dissolve in water). Soluble fiber helps to reduce blood cholesterol levels, while insoluble fiber adds bulk to stool, which prevents or alleviates constipation and lowers risk for certain cancers.[7, 8] Some foods containing high levels of soluble fiber are dried beans, oats, barley, and some fruits (notably apples and citrus) and vegetables (such as potatoes). Foods high in insoluble fiber include wheat bran, whole grains, cereals, seeds, and the skins of many fruits and vegetables. Most plant foods contain some of each fiber type.

Protein
Protein, often abbreviated as PRO, consists of specific sequences of linked amino acids. Amino acids are involved with the building, repair, and maintenance of all body tissues. Our bodies are able to synthesize what are called non-essential amino acids. Others cannot be synthesized and must be ingested, thus, they are called essential. Protein can be used as energy, especially if energy is not adequately available from other sources (i.e., carbohydrate and fat).[9]

Protein from animal sources, such as meat, poultry, fish, eggs, milk, cheese, and yogurt, provide all nine essential amino acids and are thus called complete proteins. Protein from plants, legumes, grains, nuts, seeds, and vegetables tend to be deficient in one or more of the essential amino acids; hence, they are known as incomplete proteins. Vegetarians must pay particular attention to food selection to ensure that they consume a variety of plant sources each day for adequate intake of essential amino acids. [10]

Fat
Fats serve many vital roles in the body, including cell structure, nutrient transport, growth, insulation, and protection of organs, bones, and nerves. However, because they are a significant source of energy, fats can be stored as adipose tissue if consumed in excess. The two types of fat found in the body and in food are cholesterol

and triglycerides. Cholesterol is essential for cell-building, and our bodies can produce all the cholesterol that we need. Dietary cholesterol is found only in foods of animal origin (e.g., dairy products, meat, eggs). Triglycerides, which make up most of the fats digested by humans, are formed from a single molecule of glycerol combined with three fatty acid molecules. Sources of fat in the diet include butter, margarine, vegetable oil, whole and reduced fat milk and milk products, visible fat on meat and poultry, visible and invisible fat on fish and shellfish, some plant products (such as seeds and nuts), and baked goods.[9]

Fatty acids are categorized, based on their structure, into four types: monounsaturated, polyunsaturated, saturated, and trans fatty acids.

Monounsaturated and polyunsaturated fats are the preferred types of fats for dietary intake. They can have a beneficial effect on health when used to replace saturated fats or trans-fats and when eaten in moderation. Both monounsaturated and polyunsaturated fats can help reduce blood cholesterol levels and lower heart disease risk. In general, they are liquid or soft at room temperature. Monounsaturated fatty acids are found mainly in vegetable oils such as canola, olive, nut and peanut oils. Olives, avocados, peanuts and nuts are also sources of monounsaturated fats. Omega 6 polyunsaturated fatty acids are found mainly in vegetable oils such as safflower, sunflower, corn, flaxseed, and canola oils. Omega 3 polyunsaturated fats are the primary fats found in seafood. Specific polyunsaturated fatty acids, such as linoleic acid and alpha-linolenic acid, are called essential fatty acids. They are necessary for cell structure and making hormones and unlike other fatty acids, our bodies cannot synthesize them. Thus, essential fatty acids must be obtained from foods we eat.[11]

Saturated fatty acids are found chiefly in animal sources such as meat and poultry, whole or reduced-fat milk, and butter. Some vegetable oils, including coconut oil, palm kernel oil, and palm oil, are also sources of saturated fat. Saturated fats are usually solid at room temperature.[12]

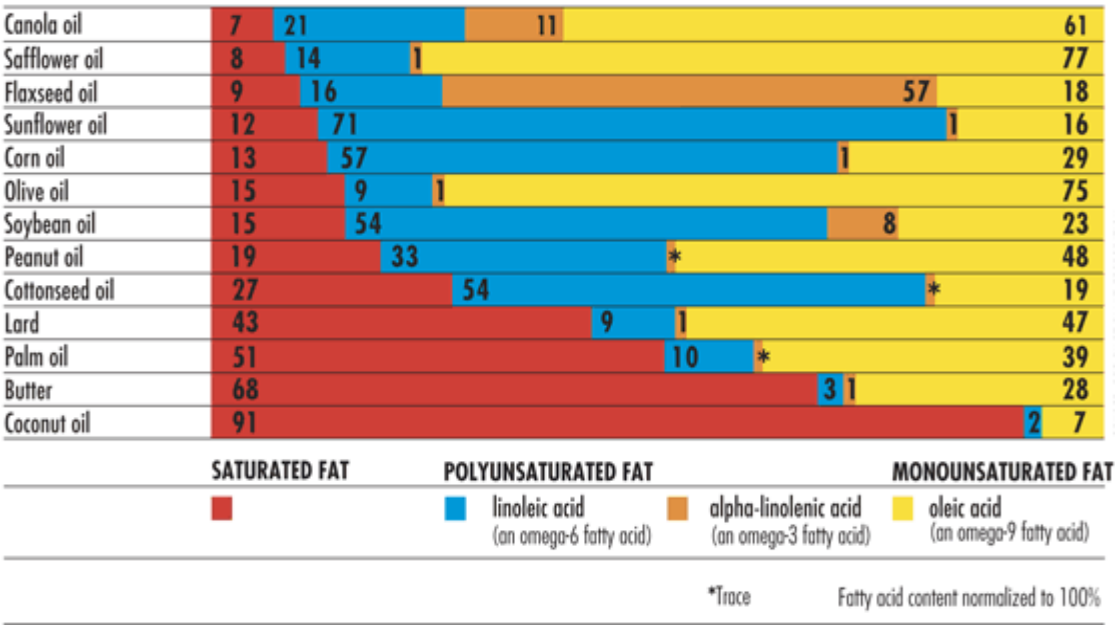
Trans-fats, also known as “partially hydrogenated fats” are formed when vegetable oils are processed into solid fats – a process call hydrogenation. Sources of trans-fats in the diet include candies, cookies, snack foods, fried foods, baked goods, and other processed foods made with “partially hydrogenated vegetable oil” or “vegetable shortening.” The hydrogenation process increases the shelf life and flavor stability of foods containing these fats. Trans fatty acids also occur naturally in some animal products such as dairy products.[13] Some commercial restaurants may also use partially-hydrogenated oils when frying their entrees and side items.

Higher dietary intake of saturated fats, trans-fats and cholesterol, raises levels of low density lipoprotein (LDL or "bad") cholesterol in the blood. Elevated LDL cholesterol levels increase the risk of developing coronary heart disease. Like saturated fat, trans-fat also raises LDL cholesterol levels in the blood. But unlike saturated fat, trans fat also lowers high density lipoprotein (HDL or "good") cholesterol levels in the blood.[14]

Foods and oils are not sources of one single fatty acid alone; rather each type of fat or oil is a mixture of different fatty acids. Figure 7-3 shows the various components of commonly used fats and oils.

Fats and Oils: How Do They Compare?

Figure 7–3: Comparison of Dietary Fats



Source: American Dietetic Association Fact Sheet: A primer on fats and oils.

Vitamins and Minerals

Vitamins work as regulators or co-enzymes for chemical reactions of the body. Vitamins are either water-soluble or fat-soluble. Water-soluble vitamins include thiamin (B1), riboflavin (B2), niacin (B3), pyroxidine (B6), cobalamin (B12), folate, biotin, pantothenic acid, choline, and ascorbic acid (vitamin C). Fat-soluble vitamins include A, D, E, and K. Fat-soluble vitamins can be stored in the body; therefore, excess intake may cause health problems. In contrast, water-soluble vitamins cannot be stored in significant amounts; excess intake is simply excreted in urine.

Minerals serve as cell components; provide structure to bones and teeth; regulate fluid balance, muscle contractions, and nerve impulses; can be part of enzymes; and may activate or stimulate chemical reactions in the body. Major minerals (calcium, phosphorus, magnesium, sodium, chloride, potassium) are needed in greater amounts by the body than trace minerals (chromium, copper, fluoride, iodine, iron, manganese, molybdenum, selenium and zinc).[15]

Ideal Body Weight (IBW)

Ideal body weight may be defined as the body weight that provides the lowest health risk. Exceeding the ideal weight range increases risk factors for certain diseases. Ideal weight varies widely by individual and depends on several factors, including your

gender, body frame type, age and height. Methods to determine a healthy weight range have evolved since the 1800's and could not all be discussed here but we have included a brief historical perspective.

- Broca's Index- In 1871, Dr. P.P. Broca--a French surgeon--introduced a formula known as Broca's index to calculate ideal body weight. The formula is that ideal weight (in kilograms) is derived by taking your height in cm and subtracting 100. From this number, the ideal range is plus or minus 15 percent for women and 10 percent for men. Height (in centimeters) - 100, plus or minus 15 percent for women or 10 percent for men. Eventually, Broca's formula was translated into a simple rule for pounds and inches which consists of allowing 100 lbs. for women or 110 lbs. for men for the first 5 feet and adding an additional 5 lbs. for every inch over 5 feet. This means a woman standing 5 feet 5 inches should weigh 125 lbs or a man standing 6 feet 2 inches should weigh 180 lbs.
- The Broca formula and the short formula pre-dated and probably influenced development of the Metropolitan Life tables of height and weight which were created in 1943, updated in 1983 and were commonly used throughout the 70's and 80's as a surrogate indicator of desirable or "ideal" body weight. They were referenced as "desirable" weights, which would indicate those persons with the lowest mortality rates. Thus, the Met life tables strongly influenced the subsequent development of other formulas.
- Subsequent formulas were published by Dr's. GJ Hamwi in 1964; BJ Devine in 1974, and JD Robinson in 1983. These formulas were intended to be used to calculate the dosage of certain medications. They basically were variations that converted the above simple rule from pounds to kilograms, for medical use. However, these formulas have no method to compensate for Age and Current Weight. They are only based on Height. For people who are very overweight or obese, the Devine, Robinson and Miller formulas would suggest an ideal weight that is virtually impossible to achieve or maintain through dieting.
- The body mass index (BMI) is a formula developed by Belgium statistician Adolphe Quelet in the 1800s. It is internationally recognized as a way to evaluate obesity---but may be slightly inaccurate for those who are extremely muscular. BMI is defined as the individual's body weight divided by the square of his or her height. The formula universally used in medicine to produce a unit of measure of kg/m^2. BMI can also be determined using a BMI chart, which displays BMI as a function of weight (horizontal axis) and height (vertical axis) using contour lines for different values of BMI or colors for different BMI categories.

Metabolism

Metabolism is the process by which energy provided by consumed food is utilized on a cellular level to maintain normal body functioning. Metabolism rates are influenced by age, gender, genes, and level of physical activity. Older and/or sedentary individuals require fewer calories to support their metabolism than young and/or very active individuals. Thus, there is no one calorie level that is appropriate for everyone trying to lose weight. Table 7-2 lists the components of energy expenditure.

Table 7–2: Components of Energy Expenditure[16]

Component	% of Total Energy Expenditure
Basic energy needs at rest	60
Energy for physical activity	30
Energy for digestion of food and absorption of nutrients	10

Energy expenditure is based largely on body weight or mass. For healthy individuals maintaining weight, energy needs equal energy expended.

Body Composition

Body composition is used to describe the percentages of fat, bone and muscle in human bodies. Usually it is expressed as a ratio of lean mass to fatty mass. Lean mass includes muscle, bone, skin, internal organs, and body water. Fatty mass is mostly composed of body fat (subcutaneous fat) as well as internal essential fat surrounding organs. Body composition will typically be displayed as either a percentage of fat (body fat percentage or % fat) or as a percentage of lean body mass (LBM). Because muscular tissue takes up less space in our body than fat tissue, our body composition, as well as our weight, determines leanness. Two people at the same height and same body weight may look completely different from each other because they have a different body composition.

Unlike Body Mass Index (BMI), body composition does not rely on height and weight alone to measure leanness. It measures the ratio of body fat to lean tissue and bone in the body, not scale weight. This is important, because a person may have a high-scale weight (even for their height), yet also have a high muscle-to-fat ratio which makes them extremely lean. That same person might be labeled overweight using the standard BMI calculation, which does not take into account body composition, only mass (weight) relative to height, weight, age and gender. Additionally, lean muscle mass is "metabolically active," which means the muscle will burn calories even at rest. Therefore, the more lean body mass one has, the more calories one burns, even in the absence of extra physical activity.[17]

Excess body fat or a body composition with a high fat-to-muscle ratio is unfavorable because it increases the risk of cardiovascular disease, Type II diabetes, Metabolic Syndrome and certain cancers. Excess body fat, especially at levels considered obese, can also put stress on the joints and interfere with mobility and the ability to perform everyday activities.

Testing and Measurement

There are a number of techniques and devices for testing and measuring body composition, including:

- **Body fat calipers** (hand-held, manual or electronic) which measures subcutaneous fat using a single or multiple skin fold tests
- **Bioelectrical Impedance Analysis (BIA)** which measures body composition by passing a weak electrical current through the body. The most common BIA

devices are electronic body fat scales, although there are also hand-held versions.

- **Hydrostatic Weighing** which involves submerging the body in a tank of water and measuring the buoyancy of the body (more muscle mass causes the body to sink, while more body fat causes it to rise.)
- **Air Displacement Plethysmography (ADP)** which uses the same principle as hydrostatic weighing, but instead measures the displacement of air in a sealed chamber, verses water.
- **Dual X-ray Absorptiometry (DXA)** uses a low-level X-ray to give very precise measurements of bone mineral content (BMC), bone mineral density (BMD), lean tissue mass, fat tissue mass, and % of fat.
- **Magnetic Resonance Imaging or Computed Tomography** which, like DXA, provides very detailed and accurate body composition measures.

The most common, inexpensive and accessible forms of body composition testing for most people continue to be calipers and bioelectrical impedance analysis. Of the two, calipers are considered to be the most accurate — typically within four percentage points of a person's actual body fat percentage. The difference in accuracy between single-point skin fold caliper tests and multiple-point tests is marginal, and research has shown that a single-point test, when properly done, can be almost as accurate as hydrostatic weighing.

Recommended Body Fat Percentages

Recommendations for ideal body fat percentages vary by authority and are influenced by gender and age.[18, 19] The National Institutes of Health (NIH) recommend that healthy adult men should have 13-17 percent body fat, while adult women should have 20-21 percent body fat. Men who have a body fat percentage that exceeds 25% and women who have more than 30% body fat are considered obese.[20]

Nutrition Guidelines

USDA Dietary Guidelines for Americans and MyPyramid.gov

People who want to lose weight need to create a calorie deficit, which can be achieved through decreased calorie intake, increased calorie expenditure through physical activity, or both.

An achievable and sustainable weight loss rate for most overweight and obese individuals is ½ to 2 pounds per week. For many Veterans, rates at the lower end of this range may be more achievable and sustainable, since a smaller calorie deficit is required. Table 7-3 displays weekly and daily calorie deficits required for various weekly rates of weight loss.[21, 22]

Table 7–3: Calorie Deficits for Various Weekly Weight Loss Rates

Rate of Weight Loss per Week	Approximate Weekly Calorie Deficit	Approximate Daily Calorie Deficit
½ lb	1750	250
1 lb	3500	500
1 ½ lbs	5250	750
2 lbs	7000	1000

A daily 250 kcal deficit translates to a weight loss of 26 pounds per year. The following are examples of small lifestyle changes that can result in a 250 kcal deficit:

- Moderate physical activity for 30 minutes daily, OR
- Eliminating one 20-oz bottle of regular soda daily, OR
- Eliminating two medium cookies daily.

Veterans enrolled in MOVE! usually do not need to "count" calorie intake and expenditure rigorously. Healthy food choices and increases in physical activity will create a calorie deficit for most.

Daily Calorie Requirements

Table 7-4 provides rough estimates of daily calorie requirements, based on gender, age, and physical activity. These estimates are based on the energy needs of a person who is at a healthy weight. Thus, an overweight or obese Veteran can create a gradual calorie deficit and lose weight slowly by maintaining food intake near these levels. Faster weight loss can be achieved by increasing levels of physical activity, reducing energy intake, or both, resulting in a net calorie intake below these levels.

Table 7–4: Daily Calorie Needs Based on Gender, Age, and Physical Activity

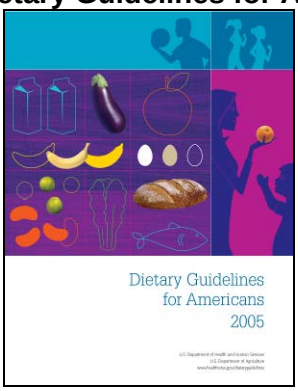
Gender and Age	Not Physically Active[a]		Physically Active[b]	
	Estimated Total Calorie Need	Estimated Discretionary Calorie Allowance	Estimated Total Calorie Need	Estimated Discretionary Calorie Allowance
Females 19-30 years old	2000	265	2000–2400	265–360
Males 19-30 years old	2400	360	2600–3000	410–510
Females 31-50 years old	1800	195	2000–2200	265–290
Males 31-50 years old	2200	290	2400–3000	360–510
Females 51+ years old	1600	130	1800–2200	195–290
Males 51+ years old	2000	265	2200–2800	290–425

Note: all amounts are listed in kilocalories (kcal).
a These calories are appropriate for individuals who get less than 30 minutes of moderate physical activity most days.
b These calories are appropriate for individuals who get at least 30 minutes (lower calorie level) to at least 60 minutes (higher calorie level) of moderate physical activity most days. Please see the Physical Activity Chapter for more information.

USDA Dietary Guidelines for Americans

In 2005, the US Department of Health and Human Services and US Department of Agriculture jointly released the Dietary Guidelines for Americans to provide science-based guidance for health promotion efforts and to reduce risk for major chronic diseases by promoting proper diet and physical activity principles. The Dietary Guidelines are updated every 5 years and the 2010 guidelines are currently under development; the 2005 Guidelines remain the current guidance until the 2010 Dietary Guidelines are published.

Figure 7–4: Dietary Guidelines for Americans 2005



www.health.gov/dietaryguidelines

Healthy Living Message – Eat Wisely

In 2010, the National Center for Health Promotion and Disease Prevention (NCP) developed a Healthy Living Message, "Eat Wisely", to address healthy eating recommendations. The following reflects the key message and additional guidance for clinical staff to share with Veterans.

Key Message for Veterans: Eat wisely to maximize your health. Eat a variety of foods including vegetables, fruits and whole grains. It is important to include fat-free or low-fat milk and milk products in your diet, and limit total salt, fat, sugar, and alcohol.

Expanded Message for Veterans:
Key (basic) recommendations for eating wisely:

- Vegetables & Fruit:
  - Eat enough vegetables and fruits (fresh, canned, or frozen) while staying within your energy needs. Aim for 5-9 servings of vegetables and fruits every day (two and one half cups of vegetables and two cups of fruit per day). Fresh, canned or frozen fruit is preferred over fruit juice.
  - Choose a variety of vegetables and fruits each day. In particular, make selections from the different vegetable groups several times a week. Choices should include: dark green (i.e., broccoli, kale, spinach); orange (i.e., carrots, pumpkin, tomato); legumes (i.e., kidney, pinto and black

beans, lentils, and peas), starchy vegetables (i.e., potato, corn, plantain) and other vegetables (i.e. beets, eggplant, artichokes, cabbage). Starchy vegetables contain more calories so choose these less often.
    - Canned, dried, and frozen fruits and vegetables are good options. Look for fruit without added sugar or syrups and vegetables without added salt, butter, or cream sauces.
- Whole Grains:
    - Eat 3 ounces or more of whole-grain cereals, breads, crackers, rice, or pasta per day. One ounce is about 1 slice of bread, 1 cup of breakfast cereal, or ½ cup of cooked rice or pasta.
    - For many, but not all "whole-grain" food products, the words "whole" or "whole grain" may appear before the name (e.g., whole-wheat bread). But, because whole-grain foods cannot necessarily be identified by their color or name (brown bread, 9-grain bread, hearty grains bread, mixed grain bread, etc. are not always "whole-grain"), you need to look at the ingredient list. The whole grain should be the first ingredient listed. The following are some examples of how whole grains could be listed: whole wheat; brown rice; quinoa; buckwheat; whole oats/oatmeal; whole rye; bulgur (cracked wheat); sorghum; whole grain; barley; popcorn; millet; or wild rice.
- Salt (sodium and potassium):
    - Eat less than 1 teaspoon of salt (approximately 2,300 mg of sodium) per day.
    - Choose foods with little added salt and prepare foods without salt when possible. At the same time, eat potassium-rich foods, such as vegetables and fruits. Good potassium sources are: orange juice, beet greens, white beans, potatoes, tomatoes, tomato paste, and bananas.
    - People who are middle-aged or older, have high blood pressure, or who are African American should limit their sodium intake to 1,500 mg of sodium per day. They should also get the recommended potassium (4,700 mg/day) in what they eat and drink.

Key (additional) recommendations for eating wisely:

- General recommendations:
    - Eat a variety of foods and beverages selecting from the basic food groups. Choose foods that are: high in fiber (whole-grains); have little added salt or sugars; and are low in saturated and trans fats, and cholesterol. Limit alcohol consumption.
    - Get the nutrients you need in a healthy way by following a balanced eating pattern, such as those provided by using the USDA MyPyramid food guide.
    - Maintain (or aim for) a body weight in a healthy range. To achieve your weight goals, balance the calories you take in from what you eat and drink with the calories you burn through activity.
    - Specific recommendations for calorie intake to maintain weight will vary depending on a person's age, sex, size, and level of physical activity.

Recommended total energy intakes range from 2000 to 3000 calories per day for men and 1600 to 2400 calories per day for women.

Key recommendations about dairy:

- Consume 3 cups per day of fat-free or low-fat milk or milk products such as yogurt or soft white cheese (cottage) cheese. If you don't or can't consume milk, choose lactose-free milk products and/or calcium-fortified foods and beverages.

Key recommendations about protein/meat:

- Go lean with protein. Choose lean meats and poultry. Lean beef cuts include round steaks (top loin, top sirloin, and top round) and roasts (round eye, top round, bottom round, round tip, arm, and chuck shoulder).
- When selecting beef, choose cuts labeled "Choice" or "Select" instead of "Prime". "Prime" usually has more fat. Choose cuts with the least amount of visible fat (marbling). Even then, trim any visible fat before preparing the beef. Choose extra lean ground beef. The label should say at least "90% lean", 93% or 95% is even better.
- Vary your protein choices by choosing fish more often. Look for fish rich in omega-3 fatty acids such as salmon, trout, and herring.
- Choose dry beans or peas as a main dish or part of a meal. Consider including two or more meatless meals in your weekly menu. Some choices are: meatless chili with kidney or pinto beans; split pea, lentil, minestrone, or white bean soups; black bean enchiladas; rice and beans; veggie burgers or garden burgers, and chef salad with garbanzo or kidney beans.
- Choose nuts as a snack, in salads, or in main dishes. Use nuts to replace meat or poultry, not in addition to meat or poultry (i.e. pine nuts in pesto sauce, slivered almonds on steamed vegetables, toasted peanuts or cashews in vegetable stir fry, walnuts or pecans added to salads instead of cheese or meat).

Key recommendations about carbohydrates:

- Choose fiber-rich vegetables, fruits, and whole grains often.
- Choose and prepare foods and beverages with little added sugar or other sweeteners that contain calories.

Key recommendations about fats:

- When selecting and preparing meat, poultry, fish, dry beans, and milk or milk products, choose lean (skinless), low-fat or fat-free varieties and do not add fat when you cook them.
- The best cooking methods to capture flavor and retain nutrients in your food without adding fat or salt are to bake, broil, braise, roast, steam, sauté, poach, grill, or stir-fry. Drain off any fat that appears during cooking.
- Look for foods low in saturated fats, trans fats, and cholesterol by using the Nutrition Fact Labels on food products. Daily Value listed as 5% or less is low, where a Daily Value listed as 20% or more is high.
- Most of the heart-healthy fats you eat should be polyunsaturated and monounsaturated fats such as those found in fish, nuts, and most vegetable oils.

Limit saturated fats that are found in high-fat cheeses, high-fat cuts of meat, whole-fat milk, cream, butter, ice cream, palm kernel and coconut oils. Eat less than 10 percent of your total daily calories from saturated fats.

- Avoid foods that contain trans fats. Trans fats are often found in commercial baked goods such as cookies, crackers, and pies. Some restaurants may also use oils with trans fats for frying.
- Eat less than 300 mg of cholesterol each day. Cholesterol is found in animal based food such as meats, poultry, egg yolks, and whole milk. Limit egg yolks to 3 per week and choose egg whites or pasteurized egg white products as substitutes for whole eggs.
- Keep your fat intake between 20 and 35 percent of your total calories.

Key recommendations for specific population groups:

- People over age 50 should:
    - Get enough vitamin B12. Vitamin B12 is naturally found in animal products, such as fish, meat, poultry, eggs, milk or milk products. The best sources of vitamin B12 include: breakfast cereals fortified with 100% Daily Value of vitamin B12 per serving, fish/seafood (trout, salmon, sockeye, tuna, clams), and supplements.
    - Older adults often have trouble absorbing vitamin B12 from foods. However the type of vitamin B12 used in supplements and in fortified foods is absorbed the best.
- Older adults, people with dark skin, and people who do not get exposed to enough sunlight should:
    - Get extra vitamin D from vitamin D-fortified foods (cereal, breads, margarine, milk) and/or supplements. Foods naturally high in vitamin D are: fish liver oils (cod liver oil); fatty fish (salmon, mackerel, sardines, tuna, eel); shitake mushrooms, and eggs.
    - Most people's bodies are able to make enough vitamin D if they can be out in the sun without sunscreen for 10-15 minutes at least twice a week.
- Women of childbearing age and those in the first trimester of pregnancy should:
    - Eat foods high in heme-iron and/or consume iron-rich plant foods or iron-fortified foods along with vitamin C-rich foods which help iron absorption.
    - Vitamin C-rich foods include the following fruits: orange, orange juice, cantaloupe, strawberries, kiwi, guava, and mango; and vegetables: broccoli, asparagus, tomato, tomato juice, potato, and green and red peppers.
    - Heme-iron is iron found in animal sources (i.e. turkey, beef, mussels, shrimp, clams, and liver) and is absorbed best by the body.
    - Non-heme-iron is found in vegetable sources (i.e. enriched cereals, cooked beans, blackstrap molasses, and enriched pasta); it is not as easily absorbed.
    - Consume adequate folic acid daily (from fortified foods or supplements) in addition to the folate in foods from a varied diet.

- Foods that are a good source of folate include: fortified breakfast cereals, whole wheat products, leafy green vegetables, asparagus, oranges, liver, eggs, beans (kidney, black, lima), and sunflower seeds.

Key recommendations about alcoholic beverages:

- If you choose to drink alcoholic beverages, drink moderate amounts. Women should limit themselves to one drink per day and men to two drinks per day. Alcohol adds calories to your diet without providing the nutrition you need.

MyPyramid.gov Resources

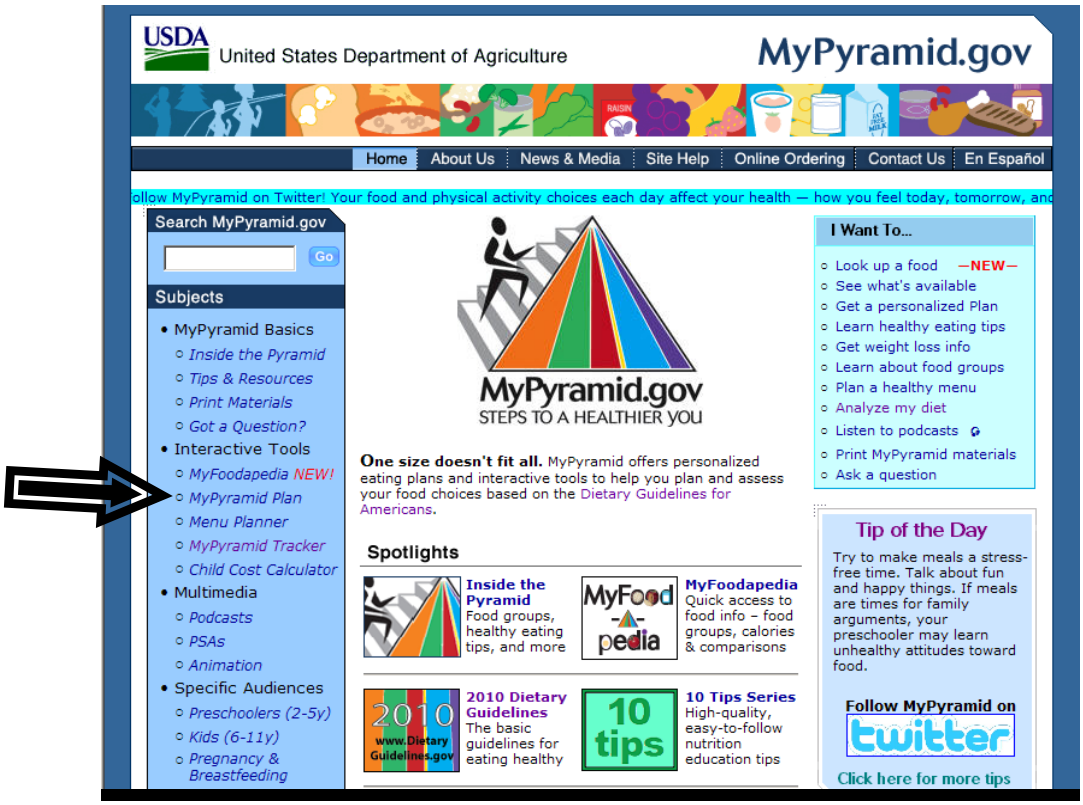
The MyPyramid Food Guidance System, which is the updated version of the original Food Guide Pyramid, is based on the Dietary Guidelines. The system encourages Americans, especially those who are overweight or obese, to eat fewer calories, be more active, and make wiser food choices. There are a number of very helpful teaching resources available on the USDA MyPyramid.gov web site (Figures 7-5 and 7-6).

Figure 7–5 MyPyramid.gov logo

http://www.mypyramid.gov/

The key message of MyPyramid is to consume a variety of nutrient-rich foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats.

Figure 7–6: MyPyramid Plan at MyPyramid.gov



MyPyramidPlan: This online interactive tool allows users to create a customized pyramid based on age, sex, height, weight, and current activity level. Figure 10-7 shows an example of a customized plan for a 59-year-old male, 5'10" and 210 pounds, who is currently active for less than 30 minutes per day.

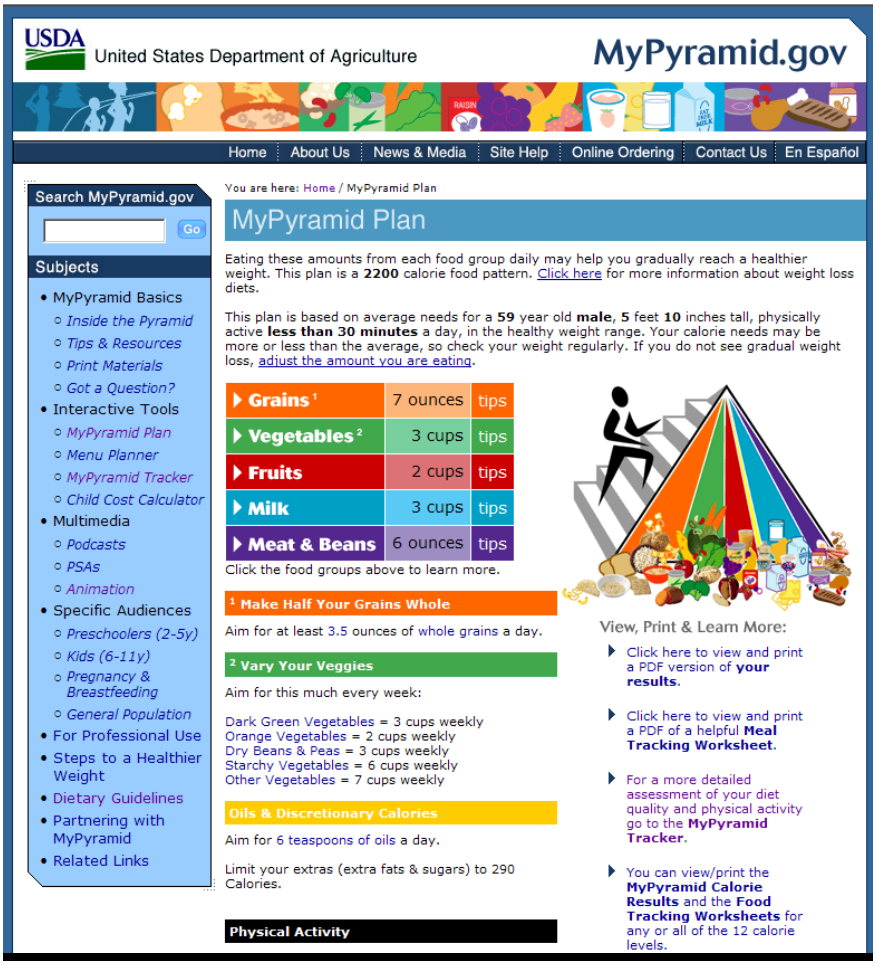
MyFood-A-Pedia: This on-line tool offers quick access to food information. Users can learn more about the MyPyramid food groups, find the calorie amounts for a particular food, or compare two foods.

MyPyramid Tracker: This online tool guides the user through a self-assessment of diet quality and physical activity status and provides related nutrition messages and links to nutrient and physical activity information.

MyPyramid Menu Planner: This online interactive tool helps the user plan healthy meals that are in accordance with the recommended food plan. A site tour of the Menu Planner is available to orient users to this meal planning program.

Access these tools on the MyPyramid Home Page at: http://www.mypyramid.gov/

Figure 7–7: Example of a Customized MyPyramid Plan



Diet Therapy Guidelines for Weight Management

Weight Loss: Creating a Negative Energy Balance

The word “diet” has come to mean a temporary alteration in food intake. The focus is typically based on the latest popular “fad diet.” MOVE!, however, is about long-term lifestyle modification and success with weight control; therefore, recommendations must be realistic, achievable, and sustainable. MOVE! and the VA/DoD Clinical Practice Guideline for Screening and Management of Overweight and Obesity acknowledge that with weight management, one size does not necessarily fit all, and that the most effective weight loss interventions will promote a combination of modified diet, increased physical activity, and behavioral modification strategies, rather than utilizing any single approach. The process of weight loss and weight maintenance is not simple. Likewise, dietary guidelines are more helpful than rigid dietary rules. Thus, MOVE! does not focus on sample menus at specific calorie levels to be given to all Veterans. We recognize

the expertise of the dietitian and other providers, including their ability to facilitate health behavior change and determine the amount of structure required in establishing a weight loss plan.

To ensure healthy weight loss, a nutritionally sound diet that addresses the Veteran's preferences, lifestyle patterns, and medical profile should be recommended. Current dietary intake must be established before diet alteration is advised. It is of paramount importance that the clinician meets the Veteran where the Veteran is to move forward in establishing Veteran-centered goals at a speed the Veteran is willing to go. To achieve a caloric deficit, certain foods will need to be substituted, eliminated, and/or reduced in quantity, without compromising the nutritional quality of the diet. Reduced-calorie diets result in clinically meaningful weight loss regardless of which macronutrients they emphasize.[23] However, weight loss can be more easily achieved by varying the proportion of the major nutrients (fat, carbohydrate, and protein) as the source of energy, while establishing the desired energy deficit. Creation of an energy deficit can be best accomplished by reducing portion sizes, minimizing snacks and desserts, and replacing high-fat and high-calorie foods with lower fat and lower calorie choices. A low-fat diet is preferred because reducing consumption of saturated fat reduces cardiac risk.[24] Other diets and approaches are acceptable if they are hypo-caloric and do not negatively impact the Veteran's health. Some high-protein, high-fat diets can increase lipid levels, while high-carbohydrate diets can increase triglyceride levels in patients who have type 2 diabetes.

Selecting a Specific Diet

To achieve modest weight loss, dietary programs should at a minimum reduce typical daily caloric intake by 500 to 1,000 kcal. The following are examples of potential diet alterations with guidance for use in weight loss and/or weight maintenance.

- Low-calorie diets (LCDs) generally limit daily intake to 1,000 to 1,200 kcal for most women and 1,200 to 1,600 kcal for men and in some cases, women who weigh 165 pounds or more or who exercise daily. LCDs should always include the major nutrients in appropriate proportions.
- Very-low–calorie diets (VLCDs) that restrict calories to less than 800 kcal/day [15 kcal/kg ideal body weight] are not recommended for weight loss, but may be used short term (12 to 16 weeks) under medical supervision.
- Low fat intake (20% to 30% of total calories/day), as part of LCDs, can be recommended to induce weight loss and should be recommended for patients with cardiovascular disease or lipid abnormalities.
- Low-carbohydrate diets (less than 20% of total calories) may be used for short-term weight loss, but are not recommended for long-term dieting or weight maintenance.
- Low-carbohydrate diets can be recommended to reduce serum triglyceride levels for overweight patients with abnormal concentrations of lipids or lipoproteins such as mixed dyslipidemia.
- Low-carbohydrate diets are not recommended for patients with hepatic or renal disease or for those with diabetes who are unable to monitor blood glucose.

- LCDs or VLCDs can include meal replacements (e.g., bars and shakes).
- Evidence is insufficient to recommend for or against a diet limited to foods with a glycemic index of less than 55 as a means of producing weight loss.

Commercial Diet Programs

The use of self-help commercial programs with good track records may be considered as an option for some. However, patients are often attracted to diets and programs that offer "guaranteed" weight loss. Although many of these programs have little metabolic validity, their promises are appealing. It must be acknowledged that such programs do modify food intake and produce weight loss through creation of an energy deficit. For successful, maintained weight loss, the goal of MOVE! is to help Veterans adhere to an eating plan that is healthful, satisfying, and sustainable in the long term. Dietary adherence, as opposed to diet composition, appears to be the most important factor in short-term weight loss for obese individuals subscribing to a diet program for weight reduction. For this reason, patients should be encouraged to adhere to a diet plan, as adherence to a diet plan has been shown to be the most important factor in achieving weight reduction. See Table 7-5 for definitions of common diets.

Table 7–5: Definitions of Common Diet Categories

Diet Approach	Content (% of total calories)		
	Fat	Carbohydrates	Protein
Very low carbohydrates (high-fat)	55–65	<20 (<100 g)	25–30
Low carbohydrates (moderate-fat)	20–30	30–40	25–30
Moderate-fat, balanced nutrient reduction (low-calorie)	20–30	55–60	15–20
Low-fat	11–19	>65	10–20

Please refer to the VA/DoD Weight Management Summary Guidelines, Module C: Interventions for Weight Loss, for specific details on common diets, recommendations, and sources of evidence.

Table 7-6 shows examples of diet types and the popular commercial diet programs which fit each diet category. This is a partial list of commercial diets and is not an endorsement any of the individual diet programs mentioned.

Table 7–6: Popular Commercial Diet Programs*

Type of Diet	Examples
High fat, Low carbohydrate	Atkins Diet™ South Beach™ Sugar Busters® The Carbohydrate Addict's Diet® Protein Power©
High protein, Moderate carbohydrate	Zone Diet®
Moderate fat, Balanced nutrient Low Calorie Diet (LCD)	Jenny Craig™ Nutri-System® Weight Watchers® LA Weight Loss® Mediterranean Diet
Very Low Calorie Diet (VLCD) (requires physician monitoring)	Medifast® OPTIFAST®
Meal replacements	SlimFast™
Low fat (11-19% fat) or Very low fat (10% fat)	Dean Ornish Program© Pritikin Program™

***This is a partial list and is not an endorsement of the diets mentioned.**

Weight Loss Studies of Commercial Diet Programs

A 2005 review of 1,500 weight loss studies of adults assessed the components, costs, and efficacy of the major commercial and organized self-help weight loss programs in the United States. Using those studies, plus additional data supplied by the programs themselves, this systematic review examined nine plans: Weight Watchers, Jenny Craig, LA Weight Loss, and eDiets.com; the self-help groups Take off Pounds Sensibly (TOPS) and Overeaters Anonymous; and three medically supervised commercial programs: Optifast, Health Management Resources, and Medifast/Take Shape for Life.

With the exception of one trial of Weight Watchers, the evidence to support the use of the major commercial and self-help weight loss programs is modest or nonexistent. Weight Watchers is the only commercial weight loss program whose efficacy has been demonstrated in a large, multi-site, randomized controlled trial. Weight Watchers participants lost on average 5% of their weight in six months. Commercial interventions available over the Internet and organized self-help programs produced minimal weight loss. The authors' conclusion was that additional controlled trials are needed to assess the efficacy and cost-effectiveness of these interventions. However, "practitioners can support patients' participation in commercial or organized self-help programs by reviewing changes in weight and health complications at office visits and by monitoring patients' efforts to improve their eating and activity habits."

Popular Diet Categories

Most popular diets fall into the following basic categories:

Food-Specific Diets

These diets claim that specific foods have special properties that aid in weight loss. Examples include the Grapefruit Diet, Cabbage Soup Diet and Cookie Diet.

High-Fiber, Low-Calorie Diets

The thinking behind high-fiber, low-calorie diets is, because fiber can't be digested, it doesn't have calories and because fiber takes up so much room in the stomach it is very filling, too. Therefore, if a diet is really high in fiber, weight loss should be easy. The proportions of nutrients in such diets vary. One moderate-fat version, Volumetrics, has 20%-30% of calories from fat, 15%-20%, from protein, and 55%-60%, from carbohydrate. Low-fat or very low-fat versions of this diet have 10-19% of calories from fat, 10-20% from protein and >65% from carbohydrates.

Low-Carbohydrate, High-Fat Diets

In low-carbohydrate, high-fat diets, such as Dr. Atkins' New Diet Revolution and the Carbohydrate Addict's Diet, less than 20% of calories (100 grams or less) are from carbohydrate, while 55%-60% of calories are from fat, and 20%-25%, from protein. These diets cause rapid weight loss from diuresis and are thought to suppress appetite or encourage satiety. The Zone Diet restricts carbohydrate, but not to the same extent: 40% of the calories are from carbohydrate, 30%, fat, and 30%, protein. Many additional diets advocating low carbohydrates have emerged more recently, such as Sugar Busters, Protein Power, and the South Beach Diet.

Low-Glycemic Index Diets

The glycemic index or GI is a measure of the effects of carbohydrates on blood sugar levels. Carbohydrates that break down quickly during digestion and release glucose rapidly into the bloodstream have a high GI; carbohydrates that break down more slowly, releasing glucose more gradually into the bloodstream, have a low GI. Limited research evidence suggests that a low-glycemic index diet will result in weight loss when followed over a six-month period. Short-term intervention studies have found the low GI diet results in similar weight loss as other caloric-restricted diets.[25, 26] There is insufficient evidence to promote the use of low GI diets for weight loss alone however, there is fair evidence that a diet based upon GI has a positive impact on glycemic control and lipid profile,[27, 28] and increasing evidence that a diet based upon GI is important in terms of disease prevention and control. Although GI diet recommendations are not universally accepted, several health organizations now recommend the consumption of low GI foods (i.e., most fruits and vegetables, legumes, whole grains, meat, eggs, milk, nuts, fructose and products low in carbohydrates) in the management of type 2 diabetes[29] and as part of a healthy diet.[30] Because no deleterious effects of a low GI diet have been documented, the diet may be considered in the management of some diseases.[31]

Restricted Energy Eating Prescription
Medically recognized approaches to energy restriction include the following categories:

Low-Calorie Diets
The principle behind low-calorie diets is that energy is reduced such that fat stores will be mobilized to assist in meeting daily energy needs. Low-calorie diets are characterized by caloric reduction of 500-1,000 kcal per day. Care must be taken to ensure they are balanced, nutritionally rich, and healthy. The composition of a typical low-calorie diet is 15%-20% protein, 20%-30% fat, and 50%-60% carbohydrates. Whole grains, vegetables, fruit, low-fat dairy products, and lean sources of protein are emphasized, and increased consumption of fiber is recommended because it can reduce caloric intake and aid in satiety. Vitamin and mineral supplements are recommended with plans that provide less than 1,200 kcal for women or less than 1,600 for men. Methods for achieving a low-calorie diet vary, and can include the following strategies:

- Calculating fat grams
- Calculating calories
- Using a food exchange system
- Following guidelines for dietary change
- Keeping a food diary or log

Meal Replacement Programs
Recent studies have shown that weight losses increase significantly with the prescription of portion-controlled meal replacement products with known energy content. Such portion-controlled meals facilitate adherence to calorie goals, and they offer an effective weight loss option when it is otherwise difficult to obtain food appropriate for weight control. Meal replacements can come in the form of drinks/shakes, powders, bars, or pre-portioned meals. One shortcoming of these products is that they serve as substitutes or stand-ins for regular meals and are often not capable of offering variety or meeting complete nutrient needs. Additionally, meal replacements are not always available or accessible to all. For this reason, the importance of food selection and preparation skills cannot be dismissed and must be taught and practiced.

Veterans can participate in meal replacement and low-calorie diet programs like the ones listed below. However, another option is to purchase meal replacement products that are available at typical grocery stores. Examples of such products include Slimfast® (liquid, powder, bar meal replacements) and pre-portioned meals such as those from Lean Cuisine®, Healthy Choice®, Weight Watcher's Smart Ones®, and others.

Examples of Sources of Meal Replacements and Low-Calorie Diets
HMR http://www.hmrprogram.com Consumer information: 1-800-418-1367
This weight management program, Health Management Resources, is franchised by medical centers across the country, with each program supervised by a local physician. The program contains modules combining information on behavior, nutrition and activity. Groups are taught by health professionals. Low Calorie and Very Low Calorie

Diet program options are available that offer a combination of liquid and regular-food meal replacements.

Jenny Craig, Inc. http://www.jennycraig.com 1-800-775-JENNY
A commercial weight loss program available in a variety of options which include: Jenny Craig In-Centre; Jenny Craig At Home; Jenny Craig For Men; Jenny Craig Silver; and Jenny Craig Type 2. With all program options, food items can be shipped to the participant's home. Counseling is done weekly over the phone. Options also provide online support. Weight loss is supervised by employees trained by the company. Registered dietitians are on staff at the corporate level. Food guidelines are given without charge, but Jenny Craig meals must be purchased by participants.

Nutrisystem http://www.nutrisystem.com 1-800-321-THIN
A commercial weight loss program with online and telephone counseling options. Food is available for purchase with direct delivery to home or office.

Optifast http://www.optifast.com
Part of Sandoz Pharmaceuticals, this Very Low Calorie Diet Program is also franchised by medical centers across the country with each program being supervised by a local physician. Optifast contains modules combining information on behavior, nutrition, and activity. Groups are taught by health professionals. A combination of liquid shakes and food bars can be used as meal replacements.

Very Low-Calorie Diets (VLCD)
The VLCD provides 200-800 kcal per day with 0.8-1.5 grams of protein per kilogram of ideal body weight per day. Supplementation is required to provide the full complement of necessary vitamins, minerals, electrolytes, and essential fatty acids. The VLCD should be used only for 12-16 weeks.

One example of a VLCD is the protein-sparing modified fast (PSMF). The PSMF provides 1.5 g/kg/day protein in the form of lean meat, fish, and poultry and only the carbohydrate contained within the protein sources themselves. Another example is commercially formulated liquid diets based on egg or milk protein; they provide 33-70 g protein, 30-45 g carbohydrate and a small amount of fat.

The NIH Guidelines include a recommendation against the use of VLCDs as the risks outweigh the benefits. Furthermore, LCDs were just as effective as VLCDs in producing weight loss at one year. The VHA Information Letter: Efficacy of High Protein Low Carbohydrate Diet in Promoting Weight Loss (IL 10-2005-005) states that calories should not be restricted to less than 800 calories per day in a healthy eating pattern.

VLCDs have serious risks including:

- Cardiac complications with risk of sudden death
- Serum electrolyte imbalance (e.g., potassium loss)
- Loss of body protein

- Increase in urinary ketones → interference with renal clearance of uric acid → increase in serum uric acid levels → gout
- Mobilization of fat stores → higher serum cholesterol → increased risk of gallstones

Possible adverse effects of VLCDs include:

- Cold intolerance
- Fatigue
- Thinning, reddened hair
- Anemia
- Diarrhea
- Dry skin
- Light-headedness
- Nervousness
- Euphoria
- Constipation
- Menstrual irregularities

Non-Diet Approach
There is a growing movement away from the concept of diets. Conscious or intuitive eating, often referred to as the non-diet approach, has the premise that as an individual eats healthfully, becomes aware of hunger and satiety clues, and incorporates physical activity into their life, migration toward a natural weight will occur. Similar to MOVE!, this approach focuses on achieving health rather than a specific or ideal weight. Size acceptance and respect for diversity of body shape and size are advocated.

Nutrition Counseling and Supportive Self-Management

MOVE!23 Patient Questionnaire—Nutrition and Weight Management Screen

The MOVE!23 questionnaire assesses basic physical and behavioral characteristics that can be useful in identifying targets for dietary change and setting goals, including:

- BMI
- Medical history
- Weight history
- Prior and current attempts at weight loss
- Family history
- Social support
- Dietary intake

- Lifestyle behavioral factors
- Importance of and confidence regarding lifestyle and health improvement
- Readiness for change

Specific diet-related problems identified by the MOVE!23 questionnaire include:

- Liquid calories
- Snacking
- Frequency of eating away from home
- Eating speed
- Binge-eating
- Environmental and other barriers to changing eating habits
- Previous and current weight loss attempts and methods used

MOVE! staff can use the information provided by the MOVE!23 to work with Veterans to establish realistic goals for changing behaviors to assist with losing weight.

Setting Realistic Goals

For overweight and obese individuals, even a 10% weight loss can reduce weight-related health risks. However, a 10% weight loss for a significantly obese individual can equate to a large amount of pounds, making it seem difficult to achieve. Focusing on short-term goals based on losing one-half to two pounds per week may feel more realistic and achievable to the Veteran. Initial success with smaller goals can instill confidence that longer-term, larger goals can be achieved. MOVE! focuses on small, gradual changes that will eventually lead to risk reduction. A goal of 10% weight loss over 24 weeks is reasonable for most obese patients. Goals need to be quantifiable. Rather than a goal of "I'll do better next week," Veterans should be asked to set specific objectives, such as "I will eat out a maximum of two times per week, and I will not order fried foods." or "I will walk for 20 minutes on Tuesday, Wednesday, Thursday, and Saturday at 9am." Goals should also be time limited, usually a week or two, and realistic, but somewhat challenging. Achieving realistic goals provides feelings of accomplishment, which can be very reinforcing.[32] Without intervention, most overweight and obese individuals continue to gain weight. For this reason, simply halting weight gain should be considered a success. For patients with certain health problems, stabilizing weight can translate into improved health (such as improvements in blood pressure, blood glucose, and blood lipid levels).

Weight plateaus occur with nearly all weight loss attempts. When weight loss slows or stops, the Veteran should be encouraged to focus on weight loss accomplishments to date, as well as other health-related improvements. For example, even when the number on the scale doesn't change, measurements such as percentage of lean mass and waist circumference can improve, as can subjective feelings of energy and well-being. Ask the Veteran about how he or she feels and how their clothes are fitting.

Balance, Moderation, and Variety

These are the three all-important words for food selection. Encourage Veterans to choose adequate amounts from each recommended food group, and to enjoy all kinds of foods, but in moderation. Calorie intake should match energy needs, and over time, excessive calorie intake translates to weight gain. The ultimate goal is to create a small calorie deficit each day or week. Nutritional lifestyle changes should be realistic to facilitate success. Small, incremental changes are better than large, drastic changes. The following are examples of realistic, measurable nutrition goals:

- Replace regular soda with diet soda.
- Substitute one high-calorie snack with a fruit or vegetable each day.
- Drink low-calorie flavored beverages (e.g., Crystal Light®, FruitH20®) instead of juice-like beverages (e.g., Kool-Aid®, Punch, Orange-Ade).
- Instead of drinking fruit juice, eat the actual fruit.
- Grill meats instead of deep-frying.
- Substitute fresh or frozen fruit desserts for high calorie cakes, cookies, and pies.
- Limit portion sizes (e.g., decrease portions by 1/3).
- Add "healthy" snacks once or twice a day to avoid excess hunger, which can lead to overeating at meal times.

Goals will and should vary by individuals. Rather than prescribing goals, work with the Veteran to develop personally tailored goals that are relevant and useful.

Food Diaries and Logs

Monitoring of food intake is a crucial weight loss strategy. Food records can be categorized into two types: food logs and food diaries. A food log simply records foods and beverages consumed, while food diaries (or journals) allow for the capture and examination of timing of meals and snacks, degree of hunger and satiety, environmental influences, and emotions associated with eating. Research has shown that tracking of food intake and food-related behaviors and feelings can help identify problem eating patterns. Multiple studies have shown that people who keep a food diary (or journal) are more likely to be successful in losing weight and keeping it off.[33-35]

Veterans participating in MOVE! receive a food and physical activity diary as part of ten standard handouts provided at the beginning of the program. In addition to this traditional paper-and-pencil food record, online versions are also available on the MOVE! website. Additionally available are on-line versions enhanced with a nutritional analysis, such as MyPyramid Tracker, a free web-based tool created by the USDA. It can be found at www.mypyramidtracker.gov.

Food Labels

Food labels can help patients decide what they should avoid and what they can incorporate more frequently in their diet. When trying to lose weight, it is important to limit total calories while also taking into consideration the amounts of fat, carbohydrate, protein, and other nutrients provided by food items. Here are a few tips on where to focus when looking at a label (see also Appendix 7-1):

- First, look at the serving size and the number of servings in the package. Small packages may appear to be one serving, but they often contain more. (Snack food items are a good example.) If you eat the whole package, then you must multiply the nutrition values by the number of servings in the package.
- Try to avoid foods high in cholesterol, saturated fat, trans fat and sodium.

A note about food label ingredient lists: All foods with more than one ingredient must have an ingredient list. Ingredients are listed in descending order by weight. Those in the largest amounts are listed first.

Terms that may be seen on a food label:

Low calorie: Less than 40 calories per serving.
Low cholesterol: Less than 20 mg of cholesterol and 2 grams or less of saturated fat per serving.
Reduced: Less than 25% of a specified nutrient or calories compared to the usual product. Examples include reduced calorie, reduced fat, reduced cholesterol, and reduced sodium.
Good source of: Provides at least 10% of daily value of a particular vitamin or nutrient per serving, based on a 2,000 calorie diet.
Calorie free: Less than 5 calories
Fat-free/sugar-free; Less than ½ gram of fat or sugar per serving.
High in: Provides 20% or more of the daily value of the specified nutrient per serving.
High fiber: 5 or more grams of fiber per serving.
Lean (meat, poultry, seafood): 10 grams of fat or less, 4.5 grams of saturated fat, and less than 95 mg cholesterol per 3-ounce serving.
Light: 1/3 fewer calories or 1/2 the fat of the full-calorie or full-fat version.
Healthy: Low fat, low saturated fat, less than 480 mg sodium, less than 95 mg cholesterol, and at least 10% of the daily value of vitamins A and C, iron, protein, calcium, and fiber.

For additional labeling terms, refer to MOVE! Handout N23: Nutrient Label Claims

Source: ADA fact sheet Shop Smart: How to Read Food Labels.

This chapter was reviewed and edited by the following VA clinical staff:

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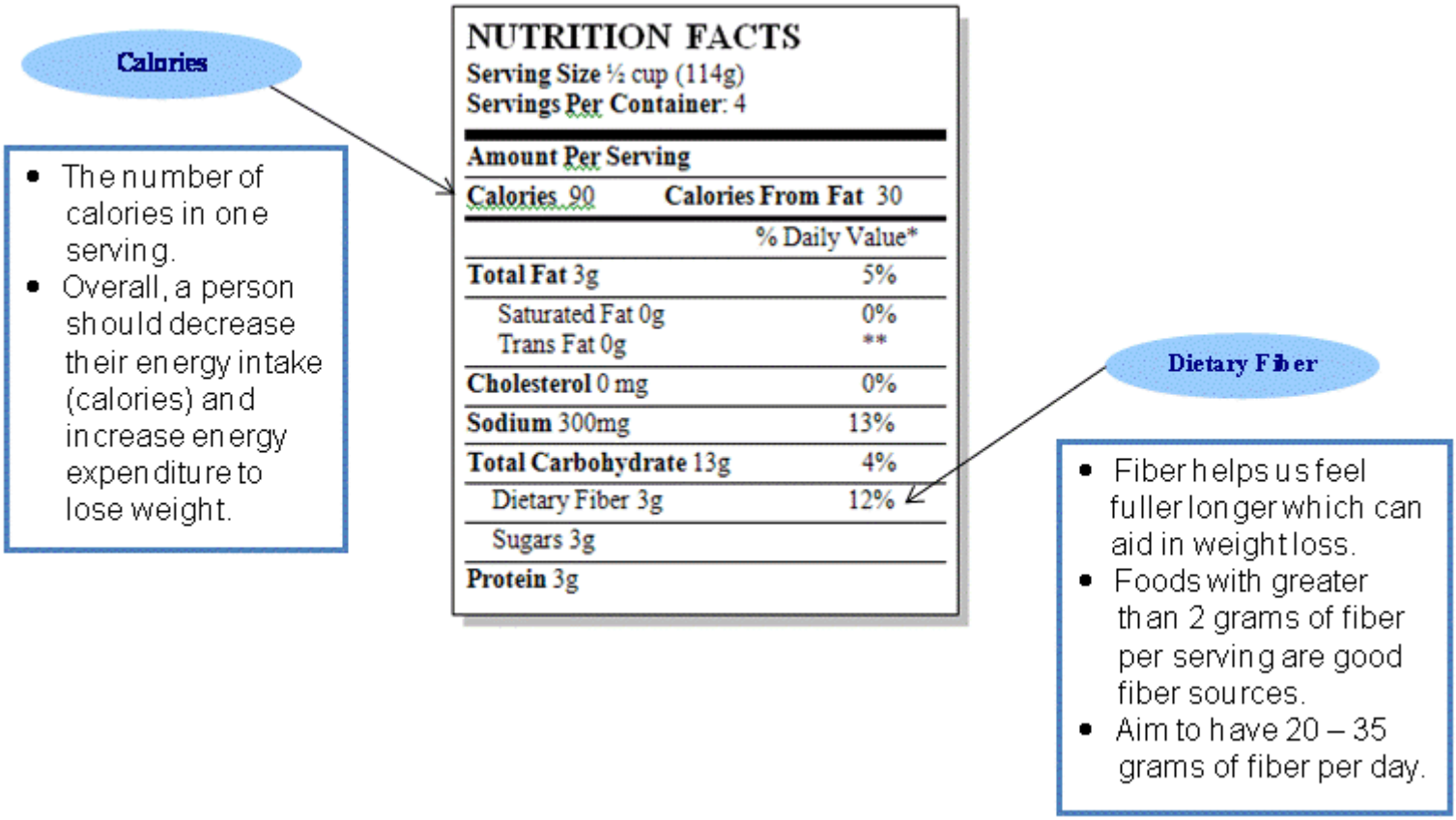
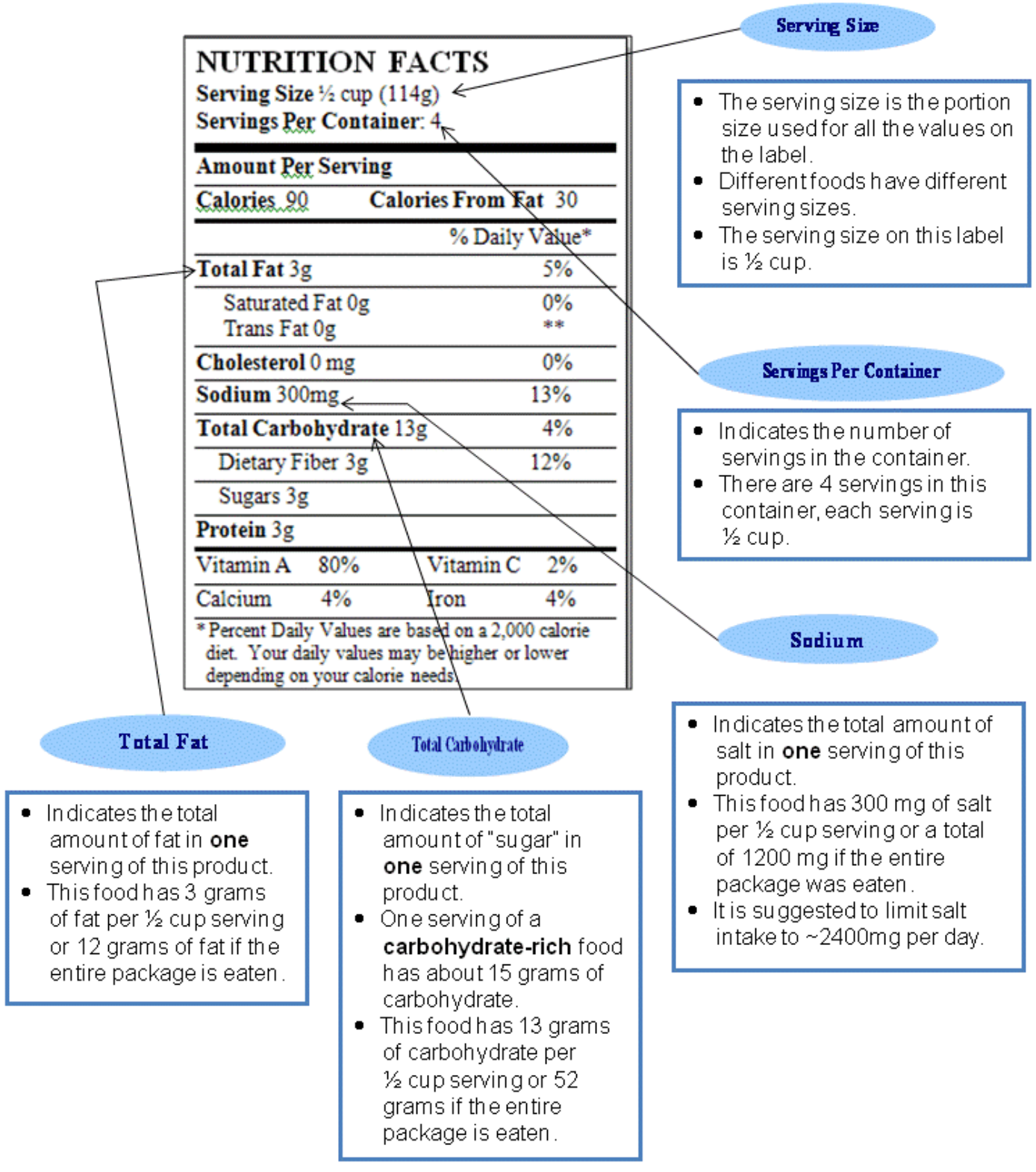
7
Appendix

Appendix 7-1

Food Label Facts



Appendix 7-1
Food Label Facts (cont'd)



Appendix 7-2

Advanced Nutrition Interventions for Weight Management

The following section provides an overview of factors that must be taken into consideration when offering more intensive individual nutrition counseling/consultations with Veterans enrolled in MOVE!.

A registered dietitian (RD) can provide individual consultation to Veterans needing more intensive dietary intervention.

In addition to self-management support and group sessions, further treatment and/or guidance can be made available to Veterans on an individual basis. Examples of such Veteran interactions are:

- Those who need closer supervision when making dietary changes (may include older Veterans, individuals with complex or multiple medical problems, and Veterans who take multiple medications and/or medications that interact with specific foods)
- Veterans who are planning or who have had a bariatric surgery procedure
- Veterans with food allergies or multiple food intolerances
- Veterans who fail to lose weight with self-management support through primary care and/or group session participation
- Veterans who are motivated to obtain more detailed individualized nutrition guidance
- Veterans with limited reading levels and/or low-level learners
- Veterans who do not do well in group settings or prefer one-on-one interactions
- Veterans with problem eating behaviors that are often identified by the MOVE!23 patient questionnaire and are barriers to successful weight management. Such as:
    - Not eating breakfast
    - Skipping meals
    - Constant nibbling, grazing, or snacking
    - Eating while watching TV, working on the computer, reading, or traveling
    - High intake of calorie-dense, micronutrient-poor foods
    - Large portions
    - Frequent consumption of meals and snacks from restaurants, fast food places, vending machines, convenience stores, etc.
    - Liquid calories (sugar-sweetened beverages, alcohol)
    - Overeating at meals
    - Binge eating
    - Eating too fast
    - Splurging at holidays, parties or other gatherings
    - Eating based on emotions/stress

Weight Loss Rate, Dietary Composition and Body Composition

An achievable and sustainable weight loss rate for most overweight and obese individuals is between ½ to 2 lbs per week (see Table 7-3). The first 2 weeks of dietary, physical activity and behavior change will yield the most rapid rate of weight loss. The main component of early weight loss is water, due to the decrease in sodium consumption and the mobilization of glycogen stores (which results in loss of water and carbohydrate). After this initial diuresis, weight loss should not exceed 1/2 to 2 pounds per week.

The recommended dietary breakdown for a healthy diet or for weight management is:

- 15-20% protein
- 20-30% fat
- 50-60% carbohydrate

Lean and meatless sources of protein, healthy fats (mono and polyunsaturated), adequate vegetable and fruit intake along with low-fat dairy, and complex carbohydrates should be emphasized.[36]

A pound of weight is part lean and part fat. Even though not ideal, lean mass will be lost with any weight reduction attempt. Restricting weight loss to 1/2 to 2 pounds or 1% of initial weight per week will help ensure that the weight lost contains mostly fat; the aim is a gradual loss that promotes 75% fat loss and 25% loss of lean tissue per pound. Greater lean tissue loss will compromise muscle mass, most importantly, that of the heart.

A net deficit of approximately 3,500 kilocalories is needed to achieve 1 pound of weight loss. However, a range (3,200–4,200) is more accurate because it takes into account variation based on the ratio of fat loss to loss of lean tissue.

Calculating Energy Needs and Expenditure

In a clinical environment, the gold standard for determining energy expenditure (energy used) is indirect calorimetry. This method estimates energy expenditure by measuring oxygen consumption and carbon dioxide production of the body over a given period of time. However, access to a metabolic cart or other similar device for measurement is often limited and impractical for outpatient use.

A portable hand-held device for measuring metabolic rate and oxygen consumption, the MedGem®, has been approved for use by the Food and Drug Administration. This device is more convenient to use and allows for direct measurement of resting energy expenditure (REE) rather than estimation based on formulas. However, use of such a device is not widespread in VA. Thus, clinicians must rely on predictive formulas to estimate REE and total energy expenditure (TEE). Much debate has ensued over the accuracy and practical application of such formulas, particularly as they relate to overweight/obesity. It is more difficult to estimate the energy expenditures of

overweight and obese patients because body composition and distribution of body fat varies in such patients, affecting overall energy expenditure.

Energy needs can be calculated based on actual weight in kilograms and adjusted for activity level via the quick method shown in Table 7-7:

Table 7-7: A Quick Method for Estimating Energy Needs for Normal Weight, Overweight, and Obese Individuals

	(kcal/kg)		
	Sedentary	**Moderate**	**Active**
Overweight	20-25	30	35
Normal	30	35	40
Underweight	30	40	45-50

Adapted from Shils ME, Goodhart RS. Modern Nutrition in Health and Disease 6th Edition. Philadelphia, Lea & Febigfer, 1980.

There are several formulas that can be used to calculate energy needs or adjust weight for obesity. Those available in CPRS/Vista are noted with an asterisk (*) others have been provided as a reference.

Harris-Benedict Energy Equation* (HBEE)
The Harris-Benedict Energy Equation (HBEE) is the most commonly used equation in the world, particularly in the USA. It is thought to overestimate requirements in healthy people, perhaps by 5% in men or 15% in women.[37] A disadvantage of this equation is that it requires both weight and height, which may often not be available. Results are multiplied by a physical activity factor (PAF; see Table 10-8 for PAF) to achieve TEE.

HBEE is expressed as “x” kcal/day; W = weight in kg; H = height in cm; A = age in years

For males: HBEE = 66.5 + [13.7 x W] + 5.0 x H – [6.8 x A]
For females: HBEE = 655 + [9.6 x W] + [1.85 x H] – [4.7 x A][38]

Mifflin-St. Jeor* (MSJ)
This equation uses actual weight, and notably it predicts significantly lower requirements when weight is very high. An advantage of the Mifflin-St Jeor equation is that it is very simple and easy to remember; however, like the Harris-Benedict equation, it requires values for both weight and height. Because of its wider range of tested subjects, it is considered to reflect the requirements of the modern US population with less estimation bias than other equations, and has recently been endorsed by the American Dietetic Association. The American Dietetic Association (ADA) is the United States' largest organization of food and nutrition professionals, with nearly 65,000 members. Approximately 75 % of ADA's members are registered dietitians and about 4 % are dietetic technicians, registered.

..... Click the link for more information.[39] Its use may increase in those populations among whom obesity is becoming more common.

The Mifflin-St. Jeor formula (MSJ) is multiplied by a physical activity factor to achieve TEE (Table 7-8 for PAF).

MSJ is expressed as "x" kcal/day; W = weight in kg; H = height in cm; A = age in years
For males: MSJ = (10 x W) + (6.25 x H) – (5 x A) + 5
For females: MSJ = (10 x W) + (6.25 x H) – (5 x A) – 16[40]

Table 7-8: Physical Activity Factors (PAF) for Use in Calculating Caloric Needs in HBEE and MSJ Equations

Activity Level	Sample Activities	Activity Factor	
		Female	Male
Very light	Driving, typing, sewing, ironing, cooking	1.3	1.3
Light	Walking 3 mph, house cleaning, golf, child care	1.5	1.6
Moderate	Walking 4 mph, dancing, tennis, cycling	1.6	1.7
Heavy	Running, soccer, basketball, football	1.9	2.1

Reference: American Dietetic Association Manual of Clinical Dietetics. 1996; p.16.

Institute of Medicine Total Energy Expenditure
Total energy expenditure (TEE) is the energy spent, on average, in a 24-hour period by an individual. By definition, it reflects the average amount of energy spent in a typical day, but it is not the exact amount of energy spent each and every day.

Total energy expenditure (TEE) = kcal/day; A = age in yrs; W = weight in kg; H = height in meters; PA = physical activity coefficient; PAL = physical activity level that is the ratio of the TEE to the Resting Energy Expenditure (REE). The REE represents the amount of calories required by the body for a 24-hour period during non-active times.

Normal and overweight or obese men 19 years and older (BMI > 18.5 kg/m^2):
TEE = 864 – 9.72 x A + PA [14.2 x W + 503 x H]

Normal and overweight or obese women 19 years and older (BMI > 18.5 kg/m^2):
TEE = 387 – 7.31 x A + PAL x [10.9 x W = 660.7 x H]

Physical activity coefficient (PA)
1.00 if PAL is estimated to be > 1.0 < 1.4 (sedentary)
1.12 if PAL is estimated to be > 1.4 < 1.6 (low active)
1.27 if PAL is estimated to be > 1.6 < 1.9 (active)
1.54 if PAL is estimated to be > 1.9 < 2.5 (very active)

Adjustments are also made to kcal/day recommended for age and sex: +/– 7 kcal for women and +/ – 10 kcal for men for each year above or below age 30.[41]

Ireton-Jones Energy Equation (IJEE)
IJEE is one of the few equations available that have been developed and validated for use in hospitalized patients, rather than healthy people, and is notable for its lower estimates for heavier patients when compared with other commonly used equations. (50) The original equation (Table 6) was developed from a single study of 200 hospitalized patients, including patients with trauma and burns. Advantages of the Ireton-Jones equation include the fact that it uses the patient's actual weight, does not require a value for height, predicts total energy expenditure (therefore does not require activity or stress factors), and is subject to ongoing review by its authors and, therefore, may be more reflective of contemporary medical management than other, older equations. It takes into account specific clinical conditions, such as mechanical ventilation or trauma.
IJEE = kcal/day; A = age in yrs; W = weight in kg; O = 1 if BMI >27 otherwise O = 0

IJEE = 629 – 11 x A + 25 x W – 609 x O[42]

World Health Organization (WHO)
The WHO energy formula is multiplied by a physical activity factor to achieve TEE (see table 7-9 below).

Energy = kcal/day; W = weight in kg; H = height in m
Male (30-60 yo): Energy = (11.3 x W) + (16 x H) + 901
Female (30-60 yo): Energy = (8.7 x W) - (25 x H) + 865

Table 7-9: WHO Energy Formula

Activity Level	Activity Factor	
	Female	Male
Light	1.56	1.55
Moderate	1.64	1.78
Heavy	1.82	2.1

Reference: http://www.fao.org/DOCREP/003/AA040E/AA040E00.HTM

Formula for Adjusting Weight for Obesity
Limits: Weight must be greater than 120% IBW
(ABW = actual body weight, IBW = ideal body weight)

Formula: [(ABW-IBW) x .25] + IBW = Wt for BEE calculation[17, 43, 44]

A Microsoft Excel spreadsheet containing energy calculating features using the above formulas is available for download from the MOVE! website.

Dietary Intake Assessment

Obtaining a diet history can be time consuming and challenging, this information is essential for assessing current nutrition intake and establishing realistic goals toward improvement. Food diaries and logs, average daily counts, and/or 24 hour recalls are tools that can provide insight.

The MOVE!23 questionnaire identifies behaviors that can contribute to weight gain, including consumption of liquid calories, snacking, high frequency of eating away from home, eating quickly, and out-of-control eating, as well as environmental, and other barriers to weight loss. Previous and current attempts and methods of weight loss are identified, and Veterans' responses are summarized in both the Staff and Patient Reports. In addition, two MOVE! handouts for monitoring diet intake, the Food and Physical Activity Log (S08) and the Food Record (N14), are available.

Special Issues in the Veteran Population

The Veteran population presents some special concerns with respect to weight management. Many Veterans do not cook or prepare their meals. Faulty beliefs are common. For example, what was considered a healthy breakfast decades ago may still be seen as a healthy and necessary meal among people in older generations. Likewise, some Veterans might believe that they require the same level of caloric intake as they did while in basic training. Poor dentition is common and may make it difficult to consume healthier foods that are firm in texture (e.g., leaner cuts of meat, crisp vegetables, fresh fruit). In selecting foods that can be easily chewed, Veterans with dentition problems often choose foods higher in fat, sugar, and calories (e.g., pudding, cakes, ice cream). Cooking food for great lengths of time to soften it depletes micronutrients. Many Veterans have lower or fixed incomes, which can make it difficult

to purchase healthier foods. These same Veterans may live in areas where a farmers' market or grocery store selling fresh produce is not conveniently located. Disabilities may make trips to the store an arduous task. Note that lower income, hunger, food insecurity, and obesity often occur together.

Appendix 7-3

Expanded Nutrition Education Topics

MOVE! Dietitians have the option of expanding their MOVE! sessions to include more advanced nutrition topics, including the following:

- Macronutrients and micronutrients
- Creation of meals and snacks with balanced proportions of carbohydrate, protein, and fat for sustained energy
- Variety among and within food groups
- Portion control/moderation
- Volume foods that are higher in water, fiber, and micronutrients and lower in fat and calories
- Hydration
- Listening to the body—hunger, satiety
- Coping with cravings and food triggers
- Reading food labels
- Keeping a food journal
- Preparing food with less fat, sugar, and salt
- Meal planning
- Shopping tips
- Food budgeting
- Planning ahead (e.g., for normal daily eating or special events)
- Tips for eating away from home
- Energy needs and expenditure with physical activity
- Health literacy—how to evaluate nutrition information in the media and other sources
- Unhealthy fad diets

Appendix 7-4

Clinical Monitoring

The following are potential medical complications of weight loss:

Diuresis
The most rapid weight loss typically occurs in the first 2 weeks and is primarily attributable to water weight loss or diuresis. If diuresis of 10 pounds or more occurs within the first week, the primary care provider should be informed. After the period of diuresis, the rate of weight loss should be restricted to no more than 1% of initial weight, or 1-2 lbs per week. If weight loss is more rapid, caloric intake should be increased by 200 kcal increments to stabilize to the preferred rate of loss.

Dehydration
Dehydration is defined as water loss occurring through sweating, urination, or respiration. With significant diuresis, dehydration is a concern. Thus, adequate water/fluid intake should be emphasized.

People who engage in physical activity often begin consuming special drinks and/or foods that are promoted as being for athletic performance. However, such products are typically a significant source of calories and in most cases are unneeded. Overweight and obese Veterans who are just beginning to introduce or increase activity should be given information on hydration and appropriate use of low-calorie electrolyte beverages. Generally speaking, these products are not required unless engaging in more than 60-90 minutes of vigorous-intensity activity.

Aggravation of Heart Disease
During the initial weight loss phase, significant diuresis and/or too rapid of a drop in weight can occur, sometimes resulting in arrhythmias or congestive heart failure. Replacement of adequate sodium, potassium, and magnesium may be necessary. Weight reduction can also induce a catabolic state for the heart, which may require modification or termination of the lower-calorie eating plan.

Lowering of Blood Pressure
An eating pattern that is hypocaloric or of a specific nutrient composition (such as the DASH diet*, which physicians often recommend to people with hypertension or pre-hypertension) can result in reduction of both weight and blood pressure. For hypertensive patients, medications are usually a part of the equation. When combined with antihypertensive medications, rapid weight loss may result in hypotension. Drug/nutrient interactions should also be considered. Cooperation and communication among the health care team and patient is essential.

*Research sponsored by the National Institutes of Health indicates that the DASH diet (Dietary Approaches to Stop Hypertension) has been proven to lower blood pressure. The DASH diet is based on an eating plan rich in fruits and vegetables and low-fat or

non-fat dairy. The DASH diet is recommended by the US Department of Health and Human Services National Heart, Lung, and Blood Institute, the American Heart Association, the 2005 Dietary Guidelines for Americans, and the US guidelines for Treatment of High Blood Pressure. The DASH diet formed the basis for the 2005 USDA MyPyramid.

Hypokalemia
Hypokalemia refers to the condition in which the concentration of potassium in the blood is too low. Electrolytes (i.e., potassium, sodium, chloride, and bicarbonate) should be monitored during the first few weeks of rapid weight loss and diuresis. A very restrictive diet, significant diuresis, or certain medications can result in hypokalemia in an individual with initial borderline potassium levels. Inclusion of additional potassium sources in the meal plan and/or supplementation may be warranted. As sedentary patients become more physically active, they may experience electrolyte imbalances.

Hyperuricemia
Hyperuricemia is a high level of uric acid in the blood. Obesity and upper body adiposity is associated with higher serum levels of uric acid. Very low calorie diets, a very low carbohydrate eating pattern, red wine, and purines can aggravate uric acid levels. Slowing the rate of weight loss and increasing dietary carbohydrate are often effective strategies for controlling elevated uric acid levels.

Dyslipidemia
Dyslipidemia involves elevation of plasma cholesterol, triglycerides, or both, or a decreased high density lipoprotein level that can contribute to the development of atherosclerosis. Weight loss usually improves lipid levels; however, the mobilization of fat stores that occurs with weight loss may at times decrease high-density lipoprotein cholesterol levels and increase serum cholesterol levels.

Gallbladder Disease
Approximately 20 mg of additional cholesterol is produced for each kilogram of extra body fat; however, no collateral increase in bile acids or phospholipids is seen with weight loss. Thus, with mobilization of fat stores, bile becomes supersaturated with cholesterol. Furthermore, with lower calorie and often lower fat dietary intake, the need for bile is decreased and contraction of the gallbladder is reduced, setting the stage for development of cholesterol-type gallstones. Keeping the rate of weight loss to no more than 1% per week may prevent this problem. If using a formula or a very low fat eating plan, add 11 grams of fat at one meal per day in order to stimulate the gallbladder.

Nonalcoholic Fatty Liver Disease
Nonalcoholic fatty liver disease refers to a wide spectrum of liver disease stages from simple fatty liver (steatosis), to nonalcoholic steatohepatitis, to cirrhosis (irreversible, advanced scarring of the liver). All of the stages of nonalcoholic fatty liver disease involve accumulation of fat (fatty infiltration) in the liver cells (hepatocytes). Obesity is associated with a significantly greater flow of fatty acids through the portal vein into the liver. As a result, more lipid is stored in the hepatocytes, resulting in fatty liver. A fatty

liver usually reduces with weight loss. However, with mobilization of fat stores via weight loss, flux of lipid through the liver is significant and can result in elevation of liver enzymes. Weight loss that is too rapid can result in hepatic inflammation (hepatitis).

Hypoglycemia
For diabetics, weight loss will generally result in lower blood sugars. Giving more food to alleviate hypoglycemia is counterproductive to weight loss. Rather, current dosages of diabetic medication can be evaluated for adjustment. Reduction of medication provides opportunity to reduce caloric intake even further. Patients should be encouraged to consistently monitor blood sugars, if not already doing so. Teamwork among the Veteran, primary care provider, and dietitian can help maintain blood sugars within a safe range.

Coordinating timing of exercise with usual planned meals or snacks will help provide energy for activity without adding extra, unnecessary calories that are counterproductive. For persons with diabetes this is particularly important for avoiding episodes of hypoglycemia.

Weight Loss Medication - Orlistat
When dietary intervention occurs concurrent with the use of weight loss medication, care must be taken to differentiate the source of any side effects.

Because the mechanism of action for the weight loss medication orlistat is in the gut rather than in the bloodstream, it has few side effects outside the gastrointestinal (GI) system. GI side effects include oily spotting, flatulence, flatulence with discharge, fatty/oily stool, oily evacuation, increased defecation, fecal incontinence, fecal urgency, abdominal pain/discomfort, bloating, dyspepsia, and diarrhea. These GI side effects are generally a result of fat that goes undigested through the GI tract; thus, meals high in fat tend to cause more symptoms than meals lower in fat. The absorption of fat soluble vitamins can be affected due to the interference with fat absorption. Thus, a multivitamin/mineral supplement including vitamins A, D, E, and K should be taken by the Veteran and timed to be taken at least 2 hours before or after meals/orlistat consumption. See Weight Loss Medications Chapter for more information on orlistat.

Constipation or Diarrhea
Changes in eating patterns, introduction of new foods, increases in fiber intake, and other dietary modifications can cause GI issues such as flatulence, constipation, or diarrhea. An appropriate intake of fluids, the importance of gradually increasing fiber consumption, and tips on reducing gas should be discussed with the patient. If symptoms persist, the Veteran should be referred to the primary care provider.

Depression
Depression is common among obese patients and sometimes improves with weight loss. However, depression can be triggered by the weight control regimen. Reduction of calories in the diet can lead to feelings of deprivation, and changes in body size can cause emotional turmoil. With low carbohydrate diets, serotonin levels can become

decreased, which can affect mood. If this appears to be an issue, dietary carbohydrate levels can be increased, perhaps with strategic timing to help alleviate depression. Encourage the Veteran to retain some favorite, treat, or comfort foods in the meal plan, but in moderation. Make a conscious effort to show the Veteran how all foods can fit into a balanced diet. Ongoing communication with the Veteran is key as her or she embarks upon and continues with weight control, tackling issues as they arise.

7
Links

For your convenience, the links from this chapter are listed below:

VA National Center for Health Promotion and Disease Prevention
http://www.prevention.va.gov/

Veterans Health Administration Office of Patient Care Services
http://www.patientcare.va.gov/

Weight Management Program for Veterans (MOVE!®)
http://www.move.va.gov/

NIH Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report (1998)
http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm

Screening and Interventions for Obesity in Adults: Summary of the Evidence for the US Preventive Services Task Force (2003)
http://www.annals.org/content/139/11/933.full.pdf+html

Screening for Obesity in Adults (2003)
http://www.annals.org/content/139/11/930.full

Handbook 1101: Managing Overweight and/or Obesity for Veterans Everywhere (MOVE!) Program
http://www.move.va.gov/download/Resources/1101.1HK3_27_06.pdf

Joint Veterans Affairs/Department of Defense Clinical Practice Guideline for Screening and Management of Overweight and Obesity (2006)
http://www.healthquality.va.gov/obesity/obe06_final1.pdf

BMI Chart
http://www.move.va.gov/download/NewHandouts/Miscellaneous/M06_BMIChart.pdf.

National Institutes of Health (NIH)
http://www.nih.gov/

Dietary Guidelines for Americans 2005
www.health.gov/dietaryguidelines

MyPyramid.gov Home Page
http://www.mypyramid.gov/

MyPyramid Plan
http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=3&tax_subject=256&topic_id=1348&level3_id=5715

MyFood-A-Pedia
http://www.myfoodapedia.gov/

MyPyramid Tracker
www.mypyramidtracker.gov

MyPyramid Menu Planner
http://www.mypyramidtracker.gov/planner/launchPage.aspx

Site tour of the MyPyramid Menu Planner
http://www.mypyramidtracker.gov/planner/sitetour/USDASiteTour.html

Health Management Resources
http://www.hmrprogram.com

Jenny Craig, Inc.
http://www.jennycraig.com

Nutrisystem
http://www.nutrisystem.com

Optifast
http://www.optifast.com

MOVE! Handout N23
http://www.move.va.gov/download/NewHandouts/Nutrition/N23_NutrientLabelClaims.pdf

World Health Organization© – FAO Corporate Document Repository –Energy and Protein Requirements
http://www.fao.org/DOCREP/003/AA040E/AA040E00.HTM

Energy Calculator Spreadsheet
http://www.move.va.gov/download/Resources/EERSpreadsheet.xls

7
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