

A Healthy Weight Begins the Road to Good Health

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INTRODUCTION

“You are what you eat!” I have heard this phrase ever since taking my first homemaking class in junior high school many, many years ago. If you eat more than your body needs for body processes, you gain weight because the excess is stored as fat. If you do not eat enough to maintain body functions, you lose weight. I learned more about what that phrase meant when I studied nutrition in college and became one of several dietitians in a hospital in Houston. Being a dietitian made me more aware of the enormous weight problem in America. I started looking around and noticing co-workers and listening to them discuss their health problems and body weight. I would see them in the cafeteria during lunch and said to myself, that is why you are having those problems with your weight and health. I wanted to say to them, “Do you know that you are what you eat?”

After twelve years, I changed my career to teaching in the public schools in Houston, where I noticed the same poor eating habits among most of the students. The poor eating habits exist across cultural lines and within different age groups. So, after about 25 years as a veteran educator in a diverse community like Houston, Texas, I still have noticed that an increasing number of students from all cultures and socioeconomic backgrounds are overweight.

The American Obesity Association in the article, “What is...” provides some shocking statistics about the obesity problem in America. The association states that obesity is a disease that affects nearly one-third of the adult American population. That is approximately 60 million people. This trend has continued since 1960, and it is not slowing down. Today, about 64.5 percent of the adults in America are labeled as being overweight or obese. That is about 127 million Americans. Each year, obesity causes at least 300,000 excess deaths in the U.S., and healthcare costs of American adults with obesity amount to approximately \$100 billion.

The American Obesity Association in the article, “Childhood Obesity” further states that about 15.5 percent of adolescents aged 12 to 19 and 15.3 percent of children ages 6 to 11 are obese. In fact, the overweight problem is so out of control that some cities and states are proposing laws for students to be weighed in at school and the results be reported to parents. In an article, “Panel Backs Student Health Report Card,” printed by the Associated Press Wire and wire services sources, in Little Rock, Arkansas, the Child Health Advisory Committee endorsed a plan for a special health report card with child’s body mass index distributed to parents. In another article, “Weighing in on School Weigh-ins,” written by the *Marietta Daily Journal Online Edition*, the state of Georgia House Bill 497 has made a proposal that would require all Georgia school children from kindergarten through 12th grade be weighed twice a year and that weight be listed on the report card stating whether the body mass index is below, within, or above the normal range. Even in our own State of Texas, according to the Organic Consumers Association, a law is being proposed requiring schools to weigh students, compute their body mass index, and send that information home on the report cards.

If no effort is made to learn about proper nutrition and changes in poor dietary habits, most of the students will grow up overweight and will more than likely remain overweight as adults. This

often increases the risk for many medical problems, including diabetes, heart disease and many others. For these predominant reasons, I have chosen healthy weight as a curriculum unit theme.

It is important for students to learn how to eat healthy and maintain a healthy weight so that they will be better equipped to stay on the road to good health by making good dietary choices throughout their lifetime. What better place for the students to learn how to eat healthy and maintain a healthy weight than in school. “Schools are one of the primary locations for reaching the nation’s children and youth. In 2000, 53.2 million students were enrolled in public and private elementary and secondary schools in the United States” (“Schools Can Play”).

Proper diet and nutrition habits can help students lose that body fat, reverse certain chronic diseases, improve their mental focus, and live a much happier life. The valuable information presented in this unit has the potential to immediately and dramatically improve the quality of students’ lives.

Since eating will consume a large part of our lives, maintaining a healthy weight is a life-long process. Planning and making good dietary choices involves an investment of time and effort. This guide is designed to help you learn every step of the way.

This curriculum is divided into four lessons. Each lesson can be taught in about one week depending on the students’ ability and age. The curriculum unit will be taught using various teaching strategies. These will include several cross-curriculum activities that will be facilitated in a way to gain the students’ interest and induce them to connect personally. Initially, students will learn various causes of an unhealthy weight and which of these can be controlled by proper diet and nutrition. Students will look at and study MyPyramid and the new Dietary Guidelines for Americans. They will compare MyPyramid to similar food guides from other countries. I want the students to see what nutrients those countries require and the serving amount they require. Students will use their weight, height, gender, and physical activity profile to develop a personal dietary plan that balances calorie intake with weight maintenance issues and energy needs. To do this, students will learn how to calculate the daily calorie intake necessary to maintain or obtain their healthy weight. Students will also complete diet recalls and analyze what they ate using MyPyramid, the new Dietary Guidelines for Americans, and the Recommended Dietary Allowances published by the USDA and other government agencies. As part of the lesson on analyzing meals, students will learn how to count the calories in meals using charts or using the calorie counter. They will learn how to increase or reduce the calories to meet their calorie intake requirements. Students will also learn how to plan three nutritious meals a day using meal pattern guidelines and learning to choose healthy snacks.

These and other activities in this unit will provide students with the information, tools and methods necessary to maintain a healthy weight and to be able to adjust their personal dietary plan as they progress through the different stages of their lives.

For this unit, the student will need to know how to use the computer, how to use a basic word processing program and how to research the Web. Most of the resources come from authentic governmental and private agencies on the World Wide Web because I feel the information presented is more up to date than written textbooks or reference books. I believe that by the time the text is written, proofread and published, it is already old information. Since the required nutrition information put out by the governmental agencies and other professional and medical agencies are revised and updated about every five years, by the time we get it, it will be another five years. Therefore, it is faster to get the updates from the Web. Also, it is important for the student to know that they must use reliable sources from the Web. It is critical for the student to have up-to-date information and know how to retrieve it immediately. This new information is so important it makes the evening television news. On January 12, 2005, the new Dietary Guidelines for Americans, published jointly every five years by the Department of Health and

Human Services (HHS) and the United States Department of Agriculture (USDA) were released. I searched the Web and was able to get the new updated guidelines immediately.

In addition, the Food Guide Pyramid was released on April 19, 2005, just in time for me to include all of the new information in this unit.

After completion of all the lessons, the students will turn in a copy of their dietary plan in a binder or folder to be checked by the teacher. Guidelines for the dietary plan are included in the appendix. A rubric will be used to evaluate the completed personal dietary plan. It is included in the appendix.

ACADEMIC SETTING

I currently teach at Phillis Wheatley High School. Wheatley High School is located on Market Street in the Historic Fifth Ward area of Houston, Texas. Wheatley's student population is about 51 % African American, 1% Asian, 48% Hispanic, and 1 % White.

At Wheatley, I teach Food Production, Management and Services, one of several Family and Consumer Science courses. Food Production, Management and Services is a course that provides occupationally specific training designed to develop knowledge and skills for employment in the area of food production, management and services. Instruction includes operation and management of food service establishments, marketing strategies, quantity food production skills, food presentation and service techniques, and technology application in the food service industry.

My students receive these instructions and on the job training in a 56 seat capacity cafeteria named, "Satellite Cafeteria." Lunch is served Tuesday through Friday, eleven A.M. to one P.M..

Only the eleventh and twelfth grade students can take this course. So, I was thinking of this age group when I designed this unit. However, this unit can be adapted in many ways to be taught at other grade levels.

UNIT OBJECTIVE

The primary objective of this unit is for the students to learn how to use the tools necessary for them to make good dietary choices so they may achieve a healthy weight throughout their life cycle. To do this the student is required to complete a personal dietary plan as a major unit project.

CONCLUSION

I hope to use this unit is to teach my students how to take charge of their own health by eating healthy. I want them to know how to use the Food Pyramid and the Dietary Guideline for Americans when planning their meals. And I want them to know how to determine whether their weight is healthy by calculating their Body Mass Index. Finally, I want my students to know how to figure out how many calories they need to eat a day to remain on a healthy diet. If I can get the students to learn these things and understand them, I won't have to keep reminding them, "You are what you eat." They will remember that phrase throughout their life as I did. And that phrase will guide them and remind them to continue to eat healthy all the time. I believe that the strategies I plan to use will capture the students' attention and keep them interested. Hopefully, by the end of this unit students will have developed their own dietary plan that balances their calorie intake with their weight maintenance issues and their energy needs.

UNIT OVERVIEW

Healthy Weight

Introduction

You might think a healthy weight is the weight at which you look good or feel good. But it is more than that. To find out if your weight is at a healthy range or not, you can look at the chart on page 17 of the Dietary Guidelines for Americans, 2005. You can also find out if you are at a healthy weight by finding out what your Body Mass Index (BMI) is. Then you can look at the same chart in the Dietary Guidelines for Americans, 2005 or a BMI chart. You can also see if you are under weight, overweight, or obese.

Now, I know you are wondering what a body mass index is? It is a number that shows body weight adjusted for height. BMI can be calculated with simple math using inches and pounds (CDC, “Calculating BMI”). See the appendix for instructions on how to calculate your BMI.

You can also use the BMI calculator on line to get your BMI (CDC, “Calculating BMI”). For adults aged 20 years or older, BMI falls into one of these categories: underweight, normal, overweight, or obese (CDC, “Calculating BMI”). But, for teenagers and children, BMI is used to assess underweight, overweight, and risk for overweight. Since children’s body fat changes over the years as they grow and since girls and boys body fat differs as they mature, their BMI is gender and age specific. BMI-for-age is plotted on gender specific growth charts. These charts are used for children and teens 2 – 20 years of age (CDC, “BMI Is Used”).

On the other hand, looking at the chart on page 17 of the 2005 Dietary Guidelines for Americans, you can see that if your BMI is between 19 and 24, it indicates a healthy weight. A BMI percentage in this range is associated with longevity, and a low incidence of serious illness. When continuing to look at the chart on page 17, you will see that if your BMI is between 25 and 29, you are considered to be overweight, and if your BMI is between 30 and 35, you are in the obese range. You must change your diet. If your BMI is over 35, you are not even on the chart. So you know you are in the extreme obesity category.

Years ago when we did not have the BMI calculator and all the other modern weight gadgets to access our healthy weight, we had to use other measures. One of those measures we used was to look in the mirror. According to Dr. Jean Mayer, “looking at yourself naked in a mirror is often a more reliable guide for estimating obesity than body weight. If you look fat, you probably are fat.” Another measure used years ago was the pinch test. According to Dr. Mayer:

In persons under 50, at least half of the body fat is found directly under the skin. This kind of body fat is found in the arms, back, calf of legs, abdomen, and below the shoulder blade. Try pinching together the skin and the tissue beneath it on the back of your arm. Is the layer of fold between your fingers more than 1 inch thick? If so, you have too much body fat. If your weight is normal, the pinched flesh should be between ½ to 1 inch thick. If it is well below ½ inch thick, you are abnormally thin.

How do you achieve and maintain a healthy weight? You can achieve and maintain a healthy weight by eating three balanced meals a day and one or two snacks to satisfy hunger. The meals are balanced using the recommendations set forth by MyPyramid Guide and the Dietary Guidelines for Americans.

When we do not eat healthy, we become obese, overweight, or underweight. Although, obesity, overweight and underweight can be cured, it is much better if you prevent these conditions before they start. It is much more difficulty to control the problem when it starts so early in life. Knowing this, hopefully, you will learn now how to eat healthy and maintain a

healthy weight so you will remain on the road to good health by making good dietary choices throughout your life. When you find out what your healthy weight is, try to maintain it (White).

Now that you know what a healthy weight is, you are probably wondering what overweight and obesity is. According to one CDC article, "Defining Overweight and Obesity," overweight is the condition of being too fat. It occurs when a person eats foods with more calories than the body needs. The extra calories are stored as fat. The same article defines obesity as an excessively high amount of body fat or adipose tissue in relation to lean body mass. Obesity results when the size or number of fat cells in a person's body increases.

Some disadvantages of being over-weight or obese are the physical problems it triggers and the emotional and social disadvantages that it fosters. Over-weight or obese people usually suffer from poor health. According to the 2005 Dietary Guidelines for Americans, the major causes of morbidity and mortality in the United States are related to poor diet and a sedentary lifestyle. Also in the 2005 Dietary Guidelines, (USDH & USDA, January 12, 2005) are specific diseases and conditions linked to poor diet. They are cardiovascular disease, hypertension, dyslipidemia, type-II diabetes, overweight and obesity, osteoporosis, constipation, diverticular disease, iron deficiency anemia, oral disease, malnutrition and some cancers.

The social and emotional disadvantages of children being overweight or obese are many. The overweight and obese children are more likely to have low self-esteem because they are unhappy with the way they look. They may also have difficulty in getting their clothes to fit. When their clothes do fit, they cost more than regular sizes. The students are usually too large to participate in many of the extra curriculum activities at school. Last, but not least, they are most often the victims of some rude comments or cruel jokes by other students in their school.

There are many so-called causes of being overweight that often start in childhood. But, believe me, research shows that the main cause is overeating, no matter whether it is physiological or psychological. There is no research stating whether obesity is hereditary or not, but we do know that eating habits are influenced by parents. Parents provide the food or the money to purchase food for the child. Therefore, parents can set a good or poor example for their child by providing balanced meals or allowing the child to eat whatever they want to eat. That is why it is so important for the student to learn how to manage his own dietary habits to maintain his own healthy weight. Hopefully, this will also prevent the student from trying many unsafe methods to lose weight such as reducing drugs and pills, crash diets, fad diets, fasting, and formula diets and skipping meals.

In discussing a healthy weight, I am compelled to mention eating disorders in this lesson, too, because I find that there are some children who might take healthy weight to the extreme. Two of the common eating disorders discussed here are anorexia nervosa and bulimia. I know that being a teenager is tough, and that age group may feel a lot of pressure to look a certain way. This peer pressure sometimes causes teenagers who are healthy to try and lose weight even though they do not need to. This may lead to eating disorders like anorexia nervosa or bulimia nervosa. In an article printed on Kids Health.org, anorexia nervosa is defined as a form of self-starvation where a person does not eat enough food to keep healthy and does not maintain a healthy weight. Bulimia is also defined. It is a condition when a person eats a lot of food and then vomits or uses other methods, such as fasting or over-exercising, to avoid gaining weight after overeating.

Eating disorders do damage the body and can cause death. According to *Kids Health*:

Someone who has anorexia may damage their heart, liver, and kidneys. A girl with anorexia may be delayed in getting her period or stop getting her period. Breathing, blood pressure, and pulse also may drop -- this is the body's way of shifting into low gear to protect itself. Fingernails may break and hair may fall out, too. Kids may suffer from

headaches, dizziness, and concentration difficulties. They also may become withdrawn and moody. And people with anorexia will feel chilly even in warm weather because they don't have enough body fat to keep them warm.

For kids with bulimia, the most serious problem is that their purging means a loss of potassium, an important nutrient. Too little potassium can lead to dangerous heart problems. Someone who has bulimia might also have problems with tooth decay because puke is acidic. Too much throwing up also can cause "chipmunk cheeks," when glands in the cheeks actually expand. People with bulimia also may damage their stomachs and kidneys and have constant stomach pain. Like girls with anorexia, girls with bulimia may also stop menstruating.

In addition to the health problems, a person who has an eating disorder is probably not having much fun. Typically, these kids miss out on good times because they pull away from friends and keep to themselves. They don't want to have pizza with their friends or enjoy a birthday party.

Calculate Your Daily Calorie Intake

Introduction

Daily calorie intake is the amount of calories needed to maintain your basal metabolic rate and your activity level daily. Now, let us define the meaning of basal metabolism rate. Your basal metabolic rate, or BMR, is the energy measured in calories expended by the body at rest to maintain normal bodily functions such as respiration, the pumping of blood around the body and maintenance of body temperature (*Hyper Dictionary*).

To calculate your daily calorie intake, you will need to know your basal metabolism rate requirement, your activity level and your digestion and absorption (Gilbert). Then add the three caloric requirements together to get your total calorie need for the day. The four simple steps used to calculate your daily calorie needs can be found at iVillage.

MyPyramid.gov provides a chart with estimated calorie needs based on sex, age and physical activity level, from sedentary to vigorous physical activity. MyPyramid further defines the different physical activity levels. Sedentary activity level is defined as a lifestyle that includes only the light physical activity associated with typical day-to-day life. It defines active activity level as a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life. The moderate physical activity level is defined as any activity that burns 3.5 to 7 kcal/min or the equivalent of 3 to 6 metabolic equivalents (METs) and results in achieving 60 to 73 percent of peak heart rate. An estimate of a person's peak heart rate can be obtained by subtracting the person's age from 220. Examples of moderate physical activity include walking briskly, mowing the lawn, dancing, swimming, or bicycling on level terrain. A person should feel some exertion but should be able to carry on a conversation comfortably during the activity. MyPyramid defines vigorous physical activity as any activity that burns more than 7 kcal/min or the equivalent of 6 or more metabolic equivalents (METs) and results in achieving 74 to 88 percent of peak heart rate. An estimate of a person's peak heart rate can be obtained by subtracting the person's age from 220. Examples of vigorous physical activity include jogging, mowing the lawn with a nonmotorized push mower, chopping wood, participating in high impact aerobic dancing, swimming continuous laps, or bicycling uphill. Vigorous-intensity physical activity may be intense enough to represent a substantial challenge to an individual and results in a significant increase in heart and breathing rate.

MyPyramid.gov tells us also, that we should balance our calorie intake from foods and beverages with calories expended. It further states that to prevent gradual weight gain with age,

you should make small decreases in food and beverage calories and increase physical activity. Limit your amount of fats, added sugars, and alcohol consumed to stay within the discretionary calorie allowance. See the food intake patterns for specific discretionary calorie allowances at each calorie level. Determine the number of calories needed for energy balance. These can be estimated from the 2005 Dietary Guidelines Table 3, or from EER formulas.

We also learn from the Pyramid that if we need to lose weight to maintain a healthy weight, aim for a slow, steady weight loss by decreasing calorie intake, while maintaining an adequate nutrient intake and increasing physical activity.

Following the food intake pattern at a calorie level identified for the person's age and sex may result in weight loss. Food intake patterns are based on energy needs of a person with healthy weight. Thus, people who are overweight may be able to lose weight following the food intake pattern for their age and sex. Increasing physical activity level may also assist with weight loss.

MyPyramid Guide and Dietary Guidelines for Americans

Introduction

MyPyramid

Agriculture Secretary Mike Johanns on April 19, 2005, unveiled MyPyramid, a new symbol and interactive food guidance system. "Steps to a Healthier You," MyPyramid's central message, supports President Bush's Healthier United States initiative which is designed to help Americans live longer, better and healthier lives. MyPyramid, which replaces the Food Guide Pyramid introduced in 1992, is part of an overall food guidance system that emphasizes the need for a more individualized approach to improving diet and lifestyle (USDA, "News and Media").

"MyPyramid is about the ability of Americans to personalize their approach when choosing a healthier lifestyle that balances nutrition and exercise," said Johanns. "Many Americans can dramatically improve their overall health by making modest improvements to their diets and by incorporating regular physical activity into their daily lives."

According to USDA, April 19, 2005, "News and Media," MyPyramid incorporates recommendations from the *2005 Dietary Guidelines for Americans*, which was released in January. MyPyramid was developed to carry the messages of the dietary guidelines and to make Americans aware of the vital health benefits of simple and modest improvements in nutrition, physical activity and lifestyle behavior.

The MyPyramid symbol, which is deliberately simple, is meant to encourage consumers to make healthier food choices and to be active every day. Below is a picture of MyPyramid and an explanation about the design.



MyPyramid (USDA, April 19, 2005. "News and Media"):

- *Personalization*, demonstrated by the MyPyramid Web site. To find a personalized recommendation of the kinds and amounts of food to eat each day, go to MyPyramid.gov.
- *Gradual improvement*, encouraged by the slogan, “Steps to a Healthier You.” It suggests that individuals can benefit from taking small steps to improve their diet and lifestyle each day.
- *Physical activity*, represented by the steps and the person climbing them, as a reminder of the importance of daily physical activity.
- *Variety*, symbolized by the six color bands representing the five food groups of MyPyramid and oils. Foods from all groups are needed each day for good health.
- *Moderation*, represented by the narrowing of each food group from bottom to top. The wider base stands for foods with little or no solid fats, added sugars, or caloric sweeteners. These should be selected more often to get the most nutrition from calories consumed.
- *Proportionality*, shown by the different widths of the food group bands. The widths suggest how much food a person should choose from each group. The widths are just a general guide, not exact proportions. Check MyPyramid.gov for the amount that is right for you.

Now that we know about the origin of MyPyramid, we will tour the inside of MyPyramid to view the different parts at MyPyramid.gov using the LCD projector.

Dietary Guidelines for Americans

The Dietary Guidelines for Americans provide the foundation for many of the Federal Nutrition Policies. Each federal nutrition program in the United States uses the Dietary Guidelines as one part of their nutrition standards. These guidelines emphasize the need for healthy food choices, exercise and food safety. The Food Guide Pyramid is based on the United States Dietary Guidelines. Every five years the Dietary Guidelines are evaluated and revised to make sure they keep up with the latest research on nutrition and health. The United States Department of Agriculture (USDA) and Health and Human Services (HHS) are responsible for publishing the 2005 edition of the Guidelines.

Following is a list of key recommendations from 2005 Dietary Guidelines for Americans (USDA “Dietary Guidelines”). The key recommendations for the general population are:

WEIGHT MANAGEMENT

- To maintain body weight in a healthy range, balance calories from foods and beverages with calories expended.
- To prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity.

PHYSICAL ACTIVITY

- Engage in regular physical activity and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
- To reduce the risk of chronic disease in adulthood: Engage in at least 30 minutes of moderate- intensity physical activity, above usual activity, at work or home on most days of the week.
- For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or longer duration.

- To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood: Engage in approximately 60 minutes of moderate- to vigorous-intensity activity on most days of the week while not exceeding caloric intake requirements.
- To sustain weight loss in adulthood: Participate in at least 60 to 90 minutes of daily moderate-intensity physical activity while not exceeding caloric intake requirements. Some people may need to consult with a healthcare provider before participating in this level of activity.
- Achieve physical fitness by including cardiovascular conditioning, stretching exercises for flexibility, and resistance exercises or calisthenics for muscle strength and endurance.

ADEQUATE NUTRIENTS WITHIN CALORIE NEEDS

- Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol.
- Meet recommended intakes within energy needs by adopting a balanced eating pattern, such as the U.S. Department of Agriculture (USDA) Food Guide or the Dietary Approaches to Stop Hypertension (DASH) Eating Plan.

FOOD GROUPS TO ENCOURAGE

- Consume a sufficient amount of fruits and vegetables while staying within energy needs. Two cups of fruit and 2 1/2 cups of vegetables per day are recommended for a reference 2,000-calorie intake, with higher or lower amounts depending on the calorie level.
- Choose a variety of fruits and vegetables each day. In particular, select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week.
- Consume 3 or more ounce-equivalents of whole-grain products per day, with the rest of the recommended grains coming from enriched or whole-grain products. In general, at least half the grains should come from whole grains. Consume 3 cups per day of fat-free or low-fat milk or equivalent milk products.

FOOD SAFETY

To avoid microbial food borne illness:

- Clean hands, food contact surfaces, and fruits and vegetables. Meat and poultry should not be washed or rinsed to avoid spreading bacteria to other foods.
- Separate raw, cooked, and ready-to-eat foods while shopping, preparing, or storing foods.
- Cook foods to a safe temperature to kill microorganisms.
- Chill (refrigerate) perishable food promptly and defrost foods properly.
- Avoid raw (unpasteurized) milk or any products made from unpasteurized milk, raw or partially cooked eggs or foods containing raw eggs, or raw or undercooked meat and poultry, unpasteurized juices, and raw sprouts.

FATS

- Consume less than 10 percent of calories from saturated fatty acids and less than 300 mg/day of cholesterol, and keep trans fatty acid consumption as low as possible.
- Keep total fat intake between 20 to 35 percent of calories, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils.
- When selecting and preparing meat, poultry, dry beans, and milk or milk products, make choices that are lean, low fat, or fat-free.

- Limit intake of fats and oils high in saturated and/or trans fatty acids, and choose products low in such fats and oils.

CARBOHYDRATES

- Choose fiber-rich fruits, vegetables, and whole grains often.
- Choose and prepare foods and beverages with little added sugars or caloric sweeteners, such as amounts suggested by the USDA Food Guide and the DASH Eating Plan.
- Reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently.

SODIUM AND POTASSIUM

- Consume less than 2,300 mg (approximately 1 teaspoon of salt) of sodium per day.
- Choose and prepare foods with little salt. At the same time, consume potassium-rich foods, such as fruits and vegetables.

ALCOHOLIC BEVERAGES

- Those who choose to drink alcoholic beverages should do so sensibly and in moderation - defined as the consumption of up to one drink per day for women and up to two drinks per day for men.
- Alcoholic beverages should not be consumed by some individuals, including those who cannot restrict their alcohol intake, women of childbearing age who may become pregnant, pregnant and lactating women, children and adolescents, individuals taking medications that can interact with alcohol, and those with specific medical conditions.
- Alcoholic beverages should be avoided by individuals engaging in activities that require attention, skill, or coordination, such as driving or operating machinery.

Planning Healthy Meals

Introduction

When planning your healthy meals or diet, it is important for you to understand your body needs and choose foods that are healthful for you. The 2005 Dietary Guidelines for Americans describe a healthy diet as one that emphasizes fruits, vegetables, whole grains and fat-free or low fat milk and milk products. The guidelines also includes lean meat, poultry, fish, beans, eggs, and nuts; and is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars. This is good scientific information provided by the government to help you make wise decisions when it comes to your health.

By now, you have found out what your Body Mass Index is the amount of calories you need for your basal metabolism, and the amount of calories you need for your physical activities. You have already learned how to use the Food Pyramid to plan and evaluate your meals. You have also learned from experts that when planning your daily meals, the total calories consumed each day should be divided into 30% or less from fat, about 15% from protein, and about 55% from carbohydrates. Use simple calculations to determine whether or not your diet fits these guidelines. Now, your next step is to take all this knowledge you have learned, to help you manage and control the food you eat. Managing and controlling the food you eat is much easier to do if you use meal pattern guides along with the dietary guidelines for Americans and the Food Guide Pyramid. When selecting a pattern, choose one that closely fit the amount of calories you need for the day. For instance, if your total calorie need for the day is 2000 calories, you might want to eat a light breakfast (250 calories), a heavy lunch (1000 calories), a moderate dinner (600 calories), and snacks totaling 150 calories. The following is a basic meal pattern guide for light, moderate, and heavy meals based upon Wehlage, 1994 model.

	Light	Moderate	Heavy
BREAKFAST	Fruit Cereal and/or bread Beverage	Fruit Cereal and/or bread Protein food Beverage	Fruit Cereal Main dish or bread Product Protein food Beverage
LUNCH	Soup or salad Bread or sandwich Fruit Beverage	Main dish Vegetable or salad Fruit Beverage	Main dish Vegetable and/or salad Bread Fruit Dessert Beverage
DINNER	Meat, poultry, or fish Vegetable Salad Bread Beverage	Meat, poultry, or fish Potato, rice, or pasta Vegetable Salad Bread Beverage	Soup Meat, poultry, or fish Vegetable Salad Bread Dessert Beverage

In planning healthy meals, do not forget snacking. Snacking is an important part of meal planning also. Eat more nutritious snacks such as fruits and less junk food. Remember not to let the snacks take the place of your meals.

Your meals can be planned when eating out, also. You are not limited to the foods you eat just because you eat out. But you do need to take care in the selection of the foods you eat. Many of the foods are high in calories, especially in fast food establishments. However, fast food facilities, cafeterias and restaurants do provide nutritious foods.

LESSON PLANS

Lesson 1: Healthy Weight

Objectives

After completion of this lesson, the student will be able to describe what a healthy weight is; state causes of an unhealthy weight; explain some disadvantages of being over weight; discuss ways to achieve and maintain desirable weight; determine whether their weight is healthy or not; list some health dangers caused by an unhealthy weigh; and describe the two common eating disorders.

Key Vocabulary Words

- Crash Diet
- Balanced Diet
- Fad Diets
- Fasting
- Healthy Weight
- Mirror Test
- Obesity
- Overweight

Materials and Supplies needed

A computer, printer, and Internet access is needed. Download copies of the 2005 Dietary Guidelines for Americans for the students. Also make handouts of the lesson introduction and make copies of the Personal Dietary Guidelines for the students. Nutrition dictionaries or regular dictionaries and other reference books are needed, too.

Focus

Hold up several pictures of men, women and children. Ask students to state whether they think these people are at a healthy weight or not. Let students explain the reason for their answer.

Instructional Delivery

Place the vocabulary words on the chalkboard. Have students define the vocabulary words. Discuss the words. Have students to read the introduction silently. Explain and discuss what the students just read. Be sure to discuss what a healthy weight is, ways to achieve and maintain desirable weight. Show students how to determine if their weight is healthy or not. Have students look at the chart on page 17 of the Dietary Guidelines for Americans, 2005. Then ask students to evaluate their body type by looking at themselves in the mirror. Explain how to perform the skin fold or pinch test. Tell students they might want to do these tests in privacy. Show students how to find their Body Mass Index by using simple math calculations. Also, show the students how to find their BMI on some free calculators on the Web. Then have students look at the same chart in the Dietary Guidelines for Americans, 2005 to see if their BMI is the same as their calculated results. The students can now find their BMI on the chart to see if they are under weight, overweight, or obese. Give the student a copy of the Personal Dietary Guidelines. Explain how to use the guidelines. Have student place their findings in their personal dietary plan.

Assessment and Closure

Have students research the Internet or reference books and write a report describing the importance of a healthy diet. Include specific ways you can improve your eating habits to reach a healthy diet; some ways to encourage other teenagers to make healthy food choices; and some possible results of an unhealthy diet.

Lesson 2: Calculate Your Daily Calorie Intake

Objectives

After completion of this lesson, the student will be able to compute their daily calorie intake by assessing their basal metabolism requirement and their active caloric requirement according to their daily activity and discuss factors that affect energy needs for metabolic and physical activity.

Key Vocabulary Words

- Active Activity Level
- Activity Level
- Basal Metabolic Rate
- Basal Metabolism
- Calories
- Empty Calories
- Sedentary Activity Level

Materials and Supplies Needed

A computer, printer, and Internet access is needed. Make handouts of the lesson introduction for the students. Also, make student copies of the information on how to calculate your daily calorie needs. Nutrition dictionaries or regular dictionaries and other reference books are needed, too.

Focus

Hold up a can of cold carbonated beverage. Ask students do they know about how many calories are found in this drink? After a few guesses, pass a can drink to each student. Let them examine the label for them to see how many calories are in the drink. Discuss how many calories are in that small can. Make the point of how easy it is to consume more calories than you need by just drinking a soda. This is a good time to explain empty calories, since soda is.

Instructional Delivery

After the focus, place the vocabulary words on the overhead projector. Have students define the vocabulary words using the dictionary. A hyper dictionary on line or other online dictionaries

can be used, too. Discuss the meaning of the words. Have students to read the introduction silently. Be sure to clarify important data. Explain and discuss as the students read. Using the LCD projector, have students look at the article on [ivillage](#) on how to calculate their daily calorie needs. Explain the calculations to the students. Then have each student calculate their daily calorie needs. From the home page of MyPyramid.gov, look on the left side menu and click on subjects for professionals to get the charts. Using the LCD projector, have students look at the Food Intake Pattern Calorie Levels chart to get their estimated daily calorie needs. Compare their calculations to the estimated calorie needs. Using the LCD projector, have students look at the Food Intake Patterns taken from MyPyramid.gov. to see how much food they should eat from each group of the pyramid. Remind students to place their results in their personal dietary plan. Look at the plan guidelines to be sure the student is following it correctly.

Assessment and Closure

Students will correctly calculate their daily calorie needs; obtain their daily calorie needs from the chart; compare the two and place both results in their personal dietary folder.

Lesson 3: MyPyramid Guide and Dietary Guidelines for Americans

MyPyramid

Objectives

After completion of this lesson, the student will be able to explain the purpose of MyPyramid guide; name some foods that make up each group of MyPyramid; retrieve their personal recommended servings needed daily from each group; use MyPyramid to analyze their diets; describe the role of the Dietary Guidelines for Americans in making good food choices; and describe how age, activity level, lifestyle and health influence dietary needs. Lastly, the student will learn how to navigate through the different sections of MyPyramid Guide to make it work for them personally.

Key Vocabulary Words

- Dietary Guidelines for Americans
- Food safety
- MyPyramid
- Physical Activities

Materials and supplies needed

A computer, a color printer, and Internet access is needed. Make handouts of the lesson introduction for the students. You will need a picture of MyPyramid symbol on transparency. Also, you will need an overhead projector to present the focus and a LCD projector to teach from the computer. To help students design and create their flyer, you will need publishing software such as Print Shop or Microsoft Publisher.

Focus

Place a picture of the MyPyramid guide on the overhead projector. Ask the class the following question: Who can tell me what this is? Proceed to discuss what the MyPyramid guide is.

Instructional Delivery

After the initial discussion about MyPyramid, place the vocabulary words on the overhead projector. Have students define the vocabulary words using the dictionary. A hyper dictionary on line or other online dictionaries can be used, too. Discuss the meaning of the words. Then pass out copies of the lesson introduction. Have students read and discuss the information. Since MyPyramid guide is so large, the LCD projector will be used to teach the information directly

from the Web site. We will take a tour of the new pyramid in this animated feature from this same Web site. View and download the MyPyramid mini-poster to learn the basics about eating healthy and physical activity. Using the LCD, we will explore the inside of MyPyramid to learn about the food groups and to see how much physical activity you should be getting. Students will be allowed to go to the computer to input their personal information into the MyPyramid plan to get the results of the amount of food they should eat from each food groups daily. The student will be able to print out their results in PDF form to insert in their personal dietary plan.

Look at the dietary plan guidelines with the student to be sure the student is completing it correctly. Afterwards, students will complete the Meal Tracking Worksheet from MyPyramid.com. The students can check how they did today and set a goal to aim for tomorrow. Study the chart: Food Intake Pattern Calorie Levels. Identify the calorie level assigned to an individual in the MyPyramid Plan, based on their sex, age, and activity level. Look at each group in MyPyramid to see what foods are in the group, what counts as an ounce equivalent of food, why it is important to eat food from each group and the health benefits.

Assessment and Closure

Create a flyer about the importance of using MyPyramid to plan meals. Include some sample meals. Include information that peers can use to help them understand how to use the Pyramid.

Lesson 4: Planning Healthy Meals

Objectives

After completion of this lesson, the student will be able to plan well-balanced meals, list guidelines for healthy weight loss, healthy weight gain and maintaining your healthy weight, and describe the two common eating disorders. They will be able to explain the meaning of a nutritious meal. List some nutritious snacks. Practice using MyPyramid to evaluate their meals. Plan their meals within the needed calories they calculated for their body or the estimated amount from the chart.

Key Vocabulary Words

- Anorexia Nervosa
- Bulimia
- Diet Recall
- Meal Patterns
- Nutrients
- Nutrition
- Nutritive Values of Food
- Well Balance Meal

Materials and Supplies Needed

A computer, printer, and Internet access is needed. Make handouts of the lesson introduction for the students. Nutrition dictionaries or regular dictionaries and other reference books are needed, too.

Focus

Set two place settings with identical tableware, table covering and napkin. But have two different meals on the plates. The first meal, use food from all groups of MyPyramid. Also use a variety in the foods' color, temperature, texture, shape, and flavor. For the second meal, use foods from only two or three groups of MyPyramid. Also use a variety in the foods' color, temperature, texture, shape, and flavor. Ask the students to come and look at the two meals. Ask the students to state which meal is well balanced and why?

Instructional Delivery

Place the vocabulary words on the chalkboard. Have students define the vocabulary words. Discuss the words. Have students to read the introduction silently. Explain and discuss the

introduction. Tell the students ahead of time, to keep a diet recall of the meals they ate for one week, including snacks. Using the LCD projector, have students look at sample menu at the 2000 calorie level that gives an example of how all of the recommendations for food group and nutrient intake can be integrated into a weekly menu. Discuss the sample and show students how this sample can help them plan their own menus.

After we finish discussing the samples, have students analyze their meals for each day using MyPyramid guide. That is, tally the number of servings they ate from each group. Then re-write their meals making sure they include any missing servings. What improvements should they make? Re-write the meals with the corrections. Re-teach how to use the meal pattern guide. Now, using MyPyramid guide and the meal pattern guide, have students plan a balanced diet for one week, including breakfast, lunch, dinner and three snacks. Plan your meals within the needed calories you calculated for your body in the previous lesson. Include these meals in your personal plan. Now have the students write down a typical meal they have eaten at a fast food restaurant. Analyze the nutritional value of the food. Students can use “Fast Food Facts” by Nutrition Data to get the nutritional value of foods from many of the fast food restaurants. Answer the following questions when analyzing your fast food meal. Which food is high in fat? What can I order that is less fat? List changes that they might make to make the meal more nutritious. Also, encourage students to make a list of foods that they like from each food group. Include this in personal plan. Look at the dietary plan guidelines with the student to be sure the student is correctly inserting the required materials.

Assessment and Closure

List three goals you are willing to accomplish to improve your food intake. Enter these goals in your personal plan. Also, include the strategies you plan to use to reach these goals.

APPENDIX A: MY PERSONAL DIETARY PLAN

Guidelines

Directions: *Please follow the format presented here. This plan must be typed with 1 inch margins, placed in a folder and turned in 2 weeks after completion of this unit. Please include the following items in your plan.*

Cover Page: *Title, Your Name, Subject, Teacher's name, Class period, Date submitted*

Preface / Introduction: *One page paragraph including some statistical data about teenage obesity today; why it is important for students to learn how to eat healthy and maintain a healthy weight; the importance of using MyPyramid to plan meals; and what you learned from this assignment that will help you throughout your life.*

Weight _____ **Height** _____ **Age** _____ **Gender** _____

Body Mass Index (BMI) _____

(Circle one) underweight healthy weight over weight obese

Daily Calorie Needs (from calculations):

<http://www.ivillage.com/food/print/0,,3885,00.html>
<http://www.Internetfitness.com/calculators/bmr.htm> or
<http://www.room42.com/nutrition/basal.shtml> or
http://www.ehow.com/how_5138_calculate-total-daily.html or
<http://www.bmi-calculator.net/bmr-calculator/>

Calories for basal metabolism _____

Calories for physical activities _____

TOTAL _____

Grams of fat: (30%) _____

Grams of protein: (15%) _____

Grams of carbohydrate: (55%) _____

Estimated Daily Calorie Needs (from chart): _____

My Pyramid Plan: To find out how much food you need from each food group daily enter your information and receive your customized food guide. Print a PDF version of your results to include. <http://mypyramid.gov/mypyramid/index.aspx>

My Pyramid Worksheet:

http://mypyramid.gov/downloads/worksheets/Worksheet_1800_18.pdf

Nutritional Goals: State ways to improve your eating habits and ways to improve your food intake.

Sample Goals

1. *Eat less junk food for snacks.*
2. *Eat less high calorie vegetables.*
3. *Do not skip any meals.*
4. *Cut back on the amount of fat I eat.*
5. *Eat less fried foods.*

Strategies to Reach Goals

Sample Strategies to Reach Goals

1. Eat more fresh fruits.
2. Eat more low calorie vegetables such as asparagus, green and wax beans, broccoli and cabbage..
3. Eat every meal, but smaller portions.
4. Reduce the amount of fat in food preparation.
5. Use other ways to prepare food.

My Favorite Foods in the following groups of MyPyramid

Grains

Vegetables

Fruits

Milk

Meat & Beans

My Favorite Snacks List

Diet Recall for 1 week

Corrective Diet Recall after analyzing the meals

MyPyramid Tracker:

Assess Your Food Intake (Use your 1 week diet recall)

Assess Your Physical Activity

My Activity Level: (Check one)

_____ Very light activity (reading, sitting, driving, eating)

_____ Light activity (such as walking to and from the bus stop, sweeping, playing the piano, bicycling, cooking dinner, etc.)

_____ Moderate activity (fast walk, dancing, ping-pong, skating, heavy housework, gardening, and very little sitting)

_____ Heavy activity (construction work, swimming, running, bicycle race, basketball and active and prolonged physical sports)

_____ Very heavy activity (boxing, rowing, mountain climbing)

My Personal Meal Pattern Guide

(Light, moderate or heavy--Breakfast, lunch, dinner, snacks)

Sample meals for One Week: Use your personal meal pattern, plan within the needed calories you calculated for your body, use the pyramid tracker to get how many calories, fats, carbohydrates and proteins in each food.

Typical Meal eaten at a fast food restaurant

Analyze the meal using pyramid tracker. Answer the following questions: Which food is high in fat? What can I order that is less fat? What changes do I need to make the meal more nutritious? Recommended Servings Needed Daily from each group.

Write a 1 page report describing what you learned about your diet.

- Have you eaten foods from all the groups of MyPyramid?
- Which foods should be eaten in larger quantities? Smaller quantities?
- Which foods might be eaten in place of high fat, sweet snacks?
- Explain the steps you might take to improve your diet.

APPENDIX B: RUBRIC (Used to evaluate the completed personal dietary plan.)

CATEGORY	10	9	8	7	6
Dietary Plan <hr/> Score	Shows a clear and accurate plan with realistic and attainable goals	Shows a fairly clear and accurate plan with realistic and attainable goals.	Shows some idea of how to attain the goals but few realistic, attainable goals.	Shows very little thought and interest.	No dietary plan completed OR
Contents <hr/> Score	Requirements met with Excellent researched information. Overall excellent level of performance	Requirements met with good researched information. Overall good level of performance.	Requirements met with adequate researched information. Overall average level of performance.	Requirements met with fair researched information. Overall fair level of performance.	Requirements met with adequate researched information. Overall poor level of performance.
Completeness <hr/> Score	Everything completed/ finished.	One assignment not finished or is missing.	Two assignments not finished or are missing.	Three assignments not finished or are missing.	Four or more assignments not finished or are missing.
Quality of Work <hr/> Score	Contains work of exceptional quality. Goes above and beyond meeting requirements.	Contains work that is of acceptable quality. Meets all requirements.	Contains work that is of acceptable quality. Meets most requirements.	Contains work that is below acceptable quality. Several requirements have not been met.	Contains work that is unacceptable quality.
Organization And Development <hr/> Score	Excellent organization skills. Reader has no problem finding things.	Good organization skills. Reader has little difficulty finding and following information.	Average organization skills. Reader difficulty finding and following information.	Shows little or no attempt at organization Some items make no sense. Information is jumbled.	Not organized skills. Simply a collection of papers.
Mechanics/ Accuracy <hr/> Score	Writing is clear, organized, well presented. Ideas are accurate and well supported. All grammar and spelling are correct.	Writing is clear and organized. There are some errors (2-3) in spelling, punctuation or usage.	There are several errors (4-5) in spelling, punctuation or usage.	There are some errors (6-10) in spelling, punctuation or usage.	Very frequent grammar and spelling errors. Completely unacceptable work.

CATEGORY	10	9	8	7	6
<p>Neatness</p> <hr/> <p>Score</p>	<p>Inserted in page protectors and neatly bounded in folder/notebook. Typed with no visible use of correction tape or fluid. No crumpled, creased, folded or torn or dirty papers.</p>	<p>Most papers inserted in page protectors and neatly bounded in folder/notebook. Typed or hand written with no visible use of correction tape or fluid. No crumpled, creased, folded or torn or dirty papers.</p>	<p>Some handwritten & typed sheets with no visible use of correction tape or fluid. No sheet protectors. No crumpled, creased, folded or torn or dirty papers.</p>	<p>Mostly handwritten sheets with minimal use of correction fluid or tape. Illegible writing, loose pages. No sheet protectors. No crumpled, creased, folded or torn or dirty papers.</p>	<p>All handwritten. No sheet protectors; Illegible writing; loose pages; Unacceptable</p>
<p>Creativity</p> <hr/> <p>Score</p>	<p>Extraordinary high achievement. High degree of originality and creativity.</p>	<p>Outstanding degree of originality and professional quality of work.</p>	<p>Outstanding imagination and professional quality of work, lack flair.</p>	<p>Shows minimal effort in creativity skills. No imagination</p>	<p>No imagination. Student did not take assignment serious. Unacceptable work.</p>
<p>Turned in on Time</p> <hr/> <p>Score</p>	<p>Turned in on time</p>	<p>Up to one day late</p>	<p>Up to two days late</p>	<p>More than a week late</p>	<p>More than two weeks late</p>
<p>Over-all Appearance</p> <hr/> <p>Score</p>	<p>Neat and pages typed. Presentation is appealing to viewers. Much attention has been paid to fine details to enhance the plan.</p>	<p>Some attention has been paid to fine details to enhance the plan. The plan is somewhat appealing to viewers.</p>	<p>Very little attention has been paid to fine details to enhance the plan. Satisfactory quality of work.</p>	<p>Little has been done to make the plan appealing. No attention has been given to fine details to enhance the plan.</p>	<p>Plan is simply thrown together with no attempt to make it appealing. Unacceptable work.</p>

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