



Obesity is a major health concern in the United States. It contributes to heart disease, diabetes, hypertension and cancer.

Obesity is defined as a body mass index (BMI) of 30 or greater. BMI is calculated from a person's weight and height and provides reasonable indicators of body fatness and weight groups that may lead to health problems. (See BMI Chart on page 2).

BMI is a tool used to assess weight and obesity and monitor changes in body weight. Like the weight-for-height tables, BMI has its limitations because it does not measure body fat or muscle directly. BMI is calculated by dividing a person's weight in pounds by height in inches squared and multiplied by 703.

You can use the table on page 2 to determine a BMI.
continued on page 2 . . .

Obesity is the most prevalent, fatal, chronic, relapsing disorder of the 21st century.

What you will learn

After finishing this in-service you will be able to:

Understand the effects of obesity to a person's health,

Gain insight into the struggle of fighting obesity,

Identify techniques to prevent and deal with overeating,

Support the individual with respect and positive reinforcement of weight loss efforts,

Find resources for obese clients.

Instructions for the Learner

If you are studying the in-service on your own, please:

Read through all the attached materials. You may find it useful to have a highlighting marker nearby as you read. Highlight any information that is new to you or that you feel is especially important.

If you have questions about anything you read, please ask your CDPC Support Coordinator.

- Take the quiz. Think about each statement and select the best answer.
- You will need to pass the quiz with an 80% score.
- Print your name and the date and then sign your name.
- Keep the in-service information for yourself and turn in the quiz page to Consumer Direct Personal Care.

THANK YOU

Obesity, continued from page 1 . . .

Body Mass index for Adults

You can use this table to determine BMI. Find the height in the left column labeled "Ht." Move across to the weight. The number at the top of the column is the BMI for that height and weight. (Pounds have been rounded off). If height and weight is greater than the numbers on this chart, use BMI formula on *page 1*.

Ht.	21	22	23	24	25	26	27	28	29	30	31
4'10"	100	105	110	115	119	124	129	134	138	143	148
5'0"	107	112	118	123	128	133	138	143	148	153	158
5'1"	111	11	122	127	132	137	143	148	153	158	164
5'3"	118	124	130	135	141	146	152	158	163	169	175
5'5"	125	132	138	144	150	156	162	168	174	180	186
5'7"	134	140	146	153	159	166	172	178	185	191	198
5'9"	142	159	155	162	169	176	182	189	19	203	209
5'11"	150	157	165	172	179	18	193	200	208	215	222
6'1"	159	166	174	182	189	197	204	212	219	227	235
6'3"	168	176	184	192	200	208	216	224	232	240	248

Here are the results for adult Body Mass Index:

BMI	
18.5 – 24.9	Normal Weight
25.0 – 29.9	Overweight
30.0 – 39.9	Obese
40.0 and above	Extreme Obesity

History and demographics

During the past 20 years there has been a dramatic increase in obesity in the United States. About 200+ million people or 66.3 percent of American adults are categorized as being overweight or obese.

The Center for Disease Control reports that the U.S. African American population had 51 percent higher frequency of obesity, and Hispanics had 21 percent higher obesity compared with the Caucasian population. Greater frequencies of obesity for African Americans and Caucasians were found in the South and Midwest than in the West and Northeast. Hispanics in the Northeast had lower obesity frequency than Hispanics in the Midwest, South or West. (*Centers for Disease Control, 2008*).



Obesity and other risk factors:

Adult Obesity – Obesity results from excessive calorie intake and inadequate amounts of exercise. Obesity in adult parents increases the probability of obesity in children due to genetic factors, or activity levels, and learned patterns of eating. Obesity is a major risk factor for cardiovascular disease, certain types of cancer, and type 2 diabetes.

Wide sections of the Southeast, Appalachia, and some tribal lands in the West and Northern Plains have the nation's highest rates of obesity and diabetes. In many counties in those regions, rates of diagnosed diabetes exceed 10 percent and the prevalence of obesity is more than 30 percent. (*Centers for Disease Control, 2007*).



Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians or other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently among American Indians, African Americans, Hispanic/Latino Americans, and Asians/Pacific Islanders.

Obesity complications : Obese individuals are susceptible to a wide variety of accompanying medical complications. Obesity increases the risk of hypertension otherwise known as high blood pressure. Hypertension increases the heart's workload and can produce serious consequences including heart failure or pulmonary edema (fluid retention). For more information about hypertension, ask us for our [Hypertension Training Module](#).



Research has shown that being overweight or obese substantially raises a person's risk of getting endometrial (uterine), breast, prostate, and colorectal cancers.

Obesity in Children: According to a 2008 *National Health and Nutrition Examination Survey*, 17 percent of children and adolescents ages 2-19 years are obese. Although genetics plays a role in childhood obesity, obesity will occur only when a child eats more calories than he or she uses. Children's dietary habits have moved away from healthy foods to fast food, processed snack foods and sugary drinks. These foods are high in fat and/or calories and low in many other necessary nutrients, (see *Children & Nutrition resource on page 8*). Another cause for childhood obesity is eating when not hungry and eating while watching TV or doing homework. Certain medical conditions related to hormone or other chemical imbalances, and disorders of metabolism can cause obesity, however these are very rare.

Economy has an impact on dietary habits. A large variety of pre-prepared, readily available food, the cheapest of which is typically the most nutrient-poor, least helpful, and calorie-dense has substituted a healthy diet of fresh foods.

Obese children and adolescents are at risk for health problems during their youth and as adults. During youth, obesity in childhood and adolescents may lead to the following health problems: heart disease, caused by high cholesterol and/or high blood pressure, Type 2 diabetes, asthma, sleep apnea (to stop breathing) and social discrimination. Obese children and adolescents may experience these immediate health consequences and may be at risk for weight-related health problems in adulthood. Obese children and adolescents are more likely to become obese as adults.



A lack of physical activity has created a more inactive lifestyle for children in the United States. Television, computers, and video games and our dependency on cars for transportation are factors in the decrease of physical activity. Children can make it through the day expending little physical energy and not burning enough calories to balance food intake.

With a seemingly endless array of fast food restaurants and high-calorie meal options throughout the nation it becomes increasingly difficult to eat a healthy meal.

Recommended daily allowance for calories: Recommended daily allowance, RDA, is an ideal amount of food intake that a healthy person will need to maintain their health. RDA for calories is the optimal intake of calories to prevent weight gain and maintain healthy body function. RDA will factor in the persons age, height, and weight to determine the need for daily caloric intake. According to the American Society for Nutrition the following guidelines are recommended:

Males: Ages 11 to 15 need approximately 2,500 calories per day. Ages 25 to 50 require 2,900 calories per day. The peak of physical activity and growth in males typically occurs around the age of 18. More calories are needed at this stage of male development; approximately 3,067 calories per day.



Recommended daily allowance, continued from page 4 . . .

Females: Ages 11 to 14 need 2,200 calories per day. Ages 25 to 50 also require 2,200 calories per day. Over age 18 may require 2,400 calories per day. Females reach puberty earlier than males so the female caloric needs are relatively stable throughout their lives.

Children: Ages zero to 6 months need between 520 and 570 calories per day and 6 months to 1 year need 850 calories per day. Ages 1 and 2 need 992 to 1,046 calories per day. Ages 4 to 6 require 1,800 calories per day. Ages 6 to 8 require 1,642 to 1,742 calories per day. Remember that the child's height, weight and activity level will affect the daily caloric need.

Other Causes of Obesity & Obesity Research

Obesogens: A growing number of researchers are exploring how chemicals used in plastics, food packaging, pesticides, and cosmetics can trigger dramatic increases in body fat. One researcher at UC Irvine has even coined a word for these compounds that corrupt the normal function of metabolic hormones as *obesogens*. These theories have not been proven at this time. There is speculation that there may be danger in wraps on top of microwavable foods and plastic microwavable containers. Another concern is that water reserves may process water in a way that increases the obesogens.

The role of environmental chemicals: Environmental exposures are now also being implicated in the obesity epidemic. There has been increasing interest in the concept that environmental chemicals may be contributing factors to the epidemics of diabetes and obesity. National Institute of Environmental Health Sciences is supporting research on the developmental origins of obesity and the theory that environmental exposures during development play an important role in the current epidemic of obesity, diabetes, and metabolic syndrome.



At National Institute of Environmental Health Sciences "we find it may be useful to start thinking about obesity not just in terms of genetics and lifestyle, but also in terms of how early life exposure to these obesogenic chemicals might be setting the stage for us to gain weight later in life."

There is data showing weight gain in adult rats and mice following developmental exposure to a Number of different chemicals, 8 of which have been termed obesogens by some researchers. At National Institute of Environmental Health Sciences, "we find it may be useful to start thinking about obesity not just in terms of genetics and lifestyle, but also in terms of how early life exposure to these obesogenic chemicals might be setting the stage for us to gain weight later in life."

Prevention and Treatment of Obesity



We eat for a number of complex reasons, such as smell, taste, texture, temperature, learned and emotional responses. Self-management *education* or *training* is a key step in improving health outcomes and quality of life. This training focuses on self-care behaviors, such as healthy eating, being active, and monitoring blood sugar. It is a collaborative process in which diabetes educators, (physicians, etc.), help people with or at risk for diabetes gain the knowledge, problem-solving, and coping skills needed to successfully self-manage the disease and its related conditions.

Prevention and Treatment, continued from page 5 . . .

Pharmacological and surgical treatment options for weight loss are numerous and more commonly used. Research studies performed by The U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, have disclosed the following information for the medical treatment of obesity:

- >Medications work by suppressing the appetite.
- >No evidence indicates that any particular drug promotes more weight loss than another drug.
- >All of these drugs have side effects.
- >The choice of drug may be made on an individual basis, based on tolerance to the expected side effects.



We eat for a number of complex reasons – understand yours.



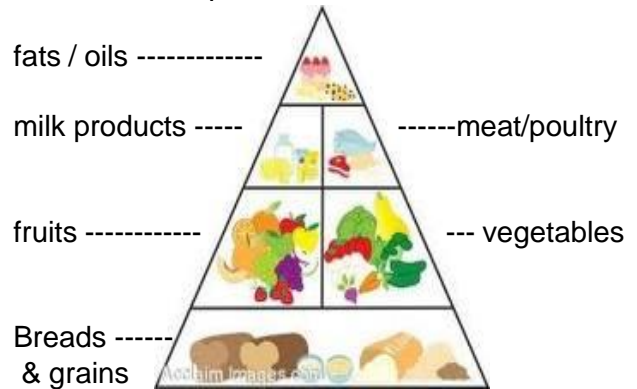
Surgical procedures result in weight loss by restricting the size of the stomach or bypassing a portion of the intestines. Surgical treatment is more effective than nonsurgical treatment for weight loss and the control of some comorbidities in patients with a body mass index of 40 or greater. More data are needed to confirm or deny the effectiveness of surgery for less severely obese persons. Surgical treatment is associated with a substantial number of complications and adverse events, although most of these are reported as minor.

There is no literature at this time regarding pharmaceutical or surgical treatment of the child and adolescent population. Researchers are exploring medication treatments for obese children who are at high-risk for Type 2 diabetes because there may not be a behavioral modification that consistently works.

Nutrition To help a child maintain a healthy weight, balance the calories the child consumes from foods and beverages with the calories the child uses through physical activity and normal growth. The goal for overweight and obese children and teens is to reduce the rate of weight gain while allowing normal growth and development. Children and teens should NOT be placed on a weight reduction diet without the consultation of a health care provider.

To help families develop healthy eating habits: provide plenty of vegetables, fruits, and whole-grain products. Include low-fat or non-fat milk or dairy products. Try to use the food groups from the chart to the right for all meals.

Choose lean meats, poultry, fish, lentils, and beans for protein. Serve reasonably-sized portions. Encourage your family to drink lots of water. Reducing the calorie-rich temptations of high-fat and high-sugar, or salty snacks can also help children develop healthy eating habits.



One out of every three American children are now overweight or obese.



Encourage children and teens to participate in at least 60 minutes of moderate intensity physical activity most days of the week, preferably daily.

How Can Caregivers and Family Help ?

Medical care is essential for monitoring the individual for obesity related health risks. The obese individual may feel self-conscious or embarrassed by their condition. An obese person may delay seeking medical care. They may also be less likely to receive certain preventive care services, such as pap smears, breast examinations, and pelvic and/or prostate examinations. Encourage the person to be attentive to their health care and to talk to their medical provider.

- > Treat the individual with respect and be supportive of any weight loss efforts.
- > Make certain that their home is safe, free of obstacles in walkways both indoors and outdoors.
- > When possible provide sturdy, armless chairs and high, firm sofas.

With the approval of a physician, help the obese person establish their own realistic lifestyle goals. An obese person may experience depression which can cause feelings of helplessness and hopelessness. Set a realistic goal for reducing calories and adjusting to maintain gradual weight loss of 1 to 2 pounds per week. Substitute words like *diet* and *exercise* with *making healthy choices* and *activity*.



- > Set realistic goals for physical activity.
- > Begin with more activity than presently practiced to slowly improve cardiovascular health.
- > Set goals for increased moderate physical activity most days of the week, for example, taking the stairs, parking farther away, exercising while watching TV.

Research various weight loss strategies and use resources as needed. (*see Resources on page 8*).

Getting started

- Create a personal plan. Remember to seek your physicians advice and approval.
- Eat better by lowering calories, balanced eating, consider a referral to a dietician.
- Watch weight. Caregiver and family members should be supportive and respectful of weight loss as well as periods of no weight change; weigh person privately and only when necessary. Have a weight scale with adequate capacity (greater than 350 pounds). Record weight without comments.
- Encourage an increase in physical activity. Start small and build, for example, start by walking 10 minutes a day. Built to 30 minutes, then to 60 minutes.
- Consider consulting with Registered Dietitians, Certified diabetes educators, and exercise physiologists.
- Behavioral management or counseling can help to keep the commitment to weight loss. Other helpful and supportive actions would be to monitor the individuals stimulus control and encourage social support. Help to identify behaviors that may lead to increased weight gain such as stress, emotional eating, and boredom.
- Manage eating in social situations, dining out, take-out-foods, and food label reading.
- Attend community wellness events.
- Remain motivated - this is a long-term project.
- Reward the progress – buy a new outfit when 15 pounds are lost.

Assisting with daily living activities:

- >Pay attention to skin breakdown or sores.
- >Wash & carefully dry between and under folds of body fat.
- >Be sure that the individual is safe in their home; indoor walkways are clear, no loose rugs, furniture is solid.
- >Offer to assist with food shopping to encourage the individual to select healthy foods that have been identified in their diet.
- >If the individual lives alone, encourage Lifeline Alarm service for emergencies such as falling.
- >Use a hoist lift when necessary to transfer the individual.
- >Watch for pressure sores from wheelchairs. The sides of a chair pressing against the body will cause sores. A wheelchair must be customized to fit the individual properly.
- >To overcome poor self-esteem and foster self-acceptance , encourage the person to take charge of their care plan and take slow steps towards their plan goals.
- >Control diabetes (if applicable) through sugar testing and following medication instructions.
- >If cardiac problems or hypertension exists, monitor blood pressure.
- >Watch for lower extremity edema.
- >Keep the individual motivated to lose weight.

Remain motivated
This is a long term project.



Like smoking, preventing obesity may require a consortium of efforts through community, government, medical, and family efforts.



Other Resources

Center for Disease Control's Division of Nutrition, Physical Activity, and Obesity, DNPAO:
<http://www.cdc.gov/nccdp/dnpao/>

The Obesity Society,
(research, education, advocacy):
<http://obesity.org>

Children and Nutrition:
<http://www.jamieoliver.com/foundation/>

The Center for Child Obesity:
www.childobesity.com

In Arizona: Obesity Action Coalition:
www.obesityaction.org
search by state

U.S. Dept of Health & Human Services, National Institute of Health:
<http://win.niddk.nih.gov/>





EMPLOYEE NAME
PLEASE PRINT:

DATE:

I understand the information presented in this in-service.

I have completed this in-service and answered the questions in the quiz correctly.

EMPLOYEE
SIGNATURE:

CONSUMER / PR
SIGNATURE:

CDPC USE ONLY

Score: _____

Hours: _____

Self: _____

Group: _____

Obesity

Quiz

Please complete the quiz below. Fill in your name, date and have the Consumer sign on the left side of this page.

1. Obesity is measured through _____.
2. Obesity results from excessive _____ intake and inadequate amounts of _____.

Circle the best answer(s)

3. A BMI score of 40.0 and above:
 - A. is healthy
 - B. is normal for a child
 - C. is extremely obese
 - D. all of the above
4. Obesity is a major risk factor for:
 - A. hypertension
 - B. diabetes
 - C. certain cancers
 - D. all of the above

Circle TRUE or FALSE

5. The recommended daily allowance of calories for adult males is 2,900.
TRUE or **FALSE**
6. The recommended daily allowance of calories for adult females is 2,200.
TRUE or **FALSE**
7. The recommended daily allowance for a 6 - 8 year old child is 1,642.
TRUE or **FALSE**
8. Environmental factors never plays a role in obesity.
TRUE or **FALSE**
9. Medications and surgery are the only solution to treating obesity.
TRUE or **FALSE**
10. Wheelchairs can cause pressure sores on an obese person.
TRUE or **FALSE**