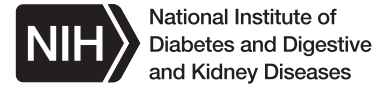


# Do You Know Some of the Health Risks of Being Overweight?

U.S. Department of Health  
and Human Services



## WIN *Weight-control Information Network*

Overweight and obesity may increase the risk of many health problems, including diabetes, heart disease, and certain cancers. If you are pregnant, excess weight may lead to short- and long-term health problems for you and your child.

This fact sheet tells you more about the links between excess weight and many health conditions. It also explains how reaching and maintaining a normal weight may help you and your loved ones stay healthier as you grow older.

### How can I tell if I weigh too much?

Gaining a few pounds during the year may not seem like a big deal. But these pounds can add up over time.

How can you tell if your weight could increase your chances of developing health problems? Knowing two numbers may help you understand your risk: your body mass index (BMI) score and your waist size in inches.

#### Body Mass Index

The BMI is one way to tell whether you are at a normal weight, are overweight, or have obesity. It measures your weight in relation to your height and provides a score to help place you in a category:

- normal weight: BMI of 18.5 to 24.9
- overweight: BMI of 25 to 29.9
- obesity: BMI of 30 or higher

For an online tool that will calculate your BMI score, see the Resources section of this fact sheet.

### What kinds of health problems are linked to overweight and obesity?

Excess weight may increase the risk for many health problems, including

- type 2 diabetes
- high blood pressure
- heart disease and strokes
- certain types of cancer
- sleep apnea
- osteoarthritis
- fatty liver disease
- kidney disease
- pregnancy problems, such as high blood sugar during pregnancy, high blood pressure, and increased risk for cesarean delivery (C-section)

#### Waist Size

Another important number to know is your waist size in inches. Having too much fat around your waist may increase health risks even more than having fat in other parts of your body.

Women with a waist size of more than 35 inches and men with a waist size of more than 40 inches may have higher chances of developing diseases related to obesity.

## Know your health numbers

Below are some numbers to aim for. <sup>1,2</sup>

Measure	Target
BMI	18.5–24.9
Waist size	Men: less than 40 in. Women: less than 35 in.
Blood pressure	120/80 mm Hg or less
LDL (bad cholesterol)	Less than 100 mg/dL
HDL (good cholesterol)	Men: more than 40 mg/dL Women: more than 50 mg/dL
Triglycerides	Less than 150 mg/dL
Blood sugar (fasting)	Less than 100 mg/dL

## Type 2 Diabetes

### What is type 2 diabetes?

Type 2 diabetes is a disease in which blood sugar levels are above normal. High blood sugar is a major cause of heart disease, kidney disease, stroke, amputation, and blindness. In 2009, diabetes was the seventh leading cause of death in the United States.<sup>3</sup>

Type 2 diabetes is the most common type of diabetes. Family history and genes play a large role in type 2 diabetes. Other risk factors include a low activity level, poor diet, and excess body weight around the waist. In the United States, type 2 diabetes is more common among blacks, Latinos, and American Indians than among whites.<sup>4</sup>

### How is type 2 diabetes linked to overweight?

About 80 percent of people with type 2 diabetes are overweight or obese.<sup>5</sup> It isn't clear why people who are overweight are more likely to develop this disease. It may be that being overweight causes cells to change, making them resistant to the hormone insulin. Insulin carries sugar from blood to the cells, where it is used for energy. When a person is insulin resistant, blood sugar cannot be

taken up by the cells, resulting in high blood sugar. In addition, the cells that produce insulin must work extra hard to try to keep blood sugar normal. This may cause these cells to gradually fail.

### How can weight loss help?

If you are at risk for type 2 diabetes, losing weight may help prevent or delay the onset of diabetes. If you have type 2 diabetes, losing weight and becoming more physically active can help you control your blood sugar levels and prevent or delay health problems. Losing weight and exercising more may also allow you to reduce the amount of diabetes medicine you take.

## Diabetes Prevention Program

The Diabetes Prevention Program (DPP) was a large clinical study sponsored by the National Institutes of Health to look at ways to prevent type 2 diabetes in adults who were overweight.

The DPP found that losing just 5 to 7 percent of your body weight and doing moderately intense exercise (like brisk walking) for 150 minutes a week may prevent or delay the onset of type 2 diabetes.

## High Blood Pressure

### What is high blood pressure?

Every time your heart beats, it pumps blood through your arteries to the rest of your body. Blood pressure is how hard your blood pushes against the walls of your arteries. High blood pressure (hypertension) usually has no symptoms, but it may cause serious problems, such as heart disease, stroke, and kidney failure.

A blood pressure of 120/80 mm Hg (often referred to as “120 over 80”) is considered normal. If the top number (systolic blood pressure) is consistently 140 or higher or the bottom number (diastolic blood pressure) is 90 or higher, you are considered to have high blood pressure.



### How is high blood pressure linked to overweight?

High blood pressure is linked to overweight and obesity in several ways. Having a large body size may increase blood pressure because your heart needs to pump harder to supply blood to all your cells. Excess fat may also damage your kidneys, which help regulate blood pressure.

### How can weight loss help?

Weight loss that will get you close to the normal BMI range may greatly lower high blood pressure. Other helpful changes are to quit smoking, reduce salt, and get regular physical activity. However, if lifestyle changes aren't enough, your doctor may prescribe drugs to lower your blood pressure.

## Heart Disease

### What is heart disease?

Heart disease is a term used to describe several problems that may affect your heart. The most common type of problem happens when a blood vessel that carries blood to the heart becomes hard and narrow. This may keep the heart from getting all the blood it needs. Other problems may affect how well the heart pumps. If you have heart disease, you may suffer from a heart attack, heart failure, sudden cardiac death, angina (chest pain), or

abnormal heart rhythm. Heart disease is the leading cause of death in the United States.<sup>3</sup>

### How is heart disease linked to overweight?

People who are overweight or obese often have health problems that may increase the risk for heart disease. These health problems include high blood pressure, high cholesterol, and high blood sugar. In addition, excess weight may cause changes to your heart that make it work harder to send blood to all the cells in your body.

### How can weight loss help?

Losing 5 to 10 percent of your weight may lower your chances of developing heart disease. If you weigh 200 pounds, this means losing as little as 10 pounds. Weight loss may improve blood pressure, cholesterol levels, and blood flow.

## Stroke

### What is a stroke?

A stroke happens when the flow of blood to a part of your brain stops, causing brain cells to die. The most common type of stroke, called ischemic stroke, occurs when a blood clot blocks an artery that carries blood to the brain. Another type of stroke, called hemorrhagic stroke, happens when a blood vessel in the brain bursts.

### How are strokes linked to overweight?

Overweight and obesity are known to increase blood pressure. High blood pressure is the leading cause of strokes. Excess weight also increases your chances of developing other problems linked to strokes, including high cholesterol, high blood sugar, and heart disease.

### How can weight loss help?

One of the most important things you can do to reduce your stroke risk is to keep your blood pressure under control. Losing weight may help you lower your blood pressure. It may also improve your cholesterol and blood sugar, which may then lower your risk for stroke.

## Cancer

### What is cancer?

Cancer occurs when cells in one part of the body, such as the colon, grow abnormally or out of control. The cancerous cells sometimes spread to other parts of the body, such as the liver. Cancer is the second leading cause of death in the United States.<sup>3</sup>

### How is cancer linked to overweight?

Gaining weight as an adult increases the risk for several cancers, even if the weight gain doesn't result in overweight or obesity. It isn't known exactly how being overweight increases cancer risk. Fat cells may release hormones that affect cell growth, leading to cancer. Also, eating or physical activity habits that may lead to being overweight may also contribute to cancer risk.

### How can weight loss help?

Avoiding weight gain may prevent a rise in cancer risk. Healthy eating and physical activity habits may lower cancer risk. Weight loss may also lower your risk, although studies have been inconclusive.

## Sleep Apnea

### What is sleep apnea?

Sleep apnea is a condition in which a person has one or more pauses in breathing during sleep. A person who has sleep apnea may suffer from daytime sleepiness, difficulty focusing, and even heart failure.

### How is sleep apnea linked to overweight?

Obesity is the most important risk factor for sleep apnea. A person who is overweight may have more fat stored around his or her neck. This may make the airway smaller. A smaller airway can make breathing difficult or loud (because of snoring), or breathing may stop altogether for short periods of time. In addition, fat stored in the neck and throughout the body may produce substances that cause inflammation. Inflammation in the neck is a risk factor for sleep apnea.

### What kinds of cancers are linked to overweight and obesity?

Being overweight increases the risk of developing certain cancers, including the following<sup>6</sup>:

- breast, after menopause
- colon and rectum
- endometrium (lining of the uterus)
- gallbladder
- kidney

### How can weight loss help?

Weight loss usually improves sleep apnea. Weight loss may help to decrease neck size and lessen inflammation.

## Osteoarthritis

### What is osteoarthritis?

Osteoarthritis is a common health problem that causes pain and stiffness in your joints. Osteoarthritis is often related to aging or to an injury, and most often affects the joints of the hands, knees, hips, and lower back.

### How is osteoarthritis linked to overweight?

Being overweight is one of the risk factors for osteoarthritis, along with joint injury, older age, and genetic factors. Extra weight may place extra pressure on joints and cartilage (the hard but slippery tissue that covers the ends of your bones at a joint), causing them to wear away. In addition, people with more body fat may have higher blood levels of substances that cause inflammation. Inflamed joints may raise the risk for osteoarthritis.

### How can weight loss help?

For those who are overweight or obese, losing weight may help reduce the risk of developing osteoarthritis. Weight loss of at least 5 percent

of your body weight may decrease stress on your knees, hips, and lower back and lessen inflammation in your body.

If you have osteoarthritis, losing weight may help improve your symptoms. Research also shows that exercise is one of the best treatments for osteoarthritis. Exercise can improve mood, decrease pain, and increase flexibility.

## Fatty Liver Disease

### What is fatty liver disease?

Fatty liver disease, also known as nonalcoholic steatohepatitis (NASH), occurs when fat builds up in the liver and causes injury. Fatty liver disease may lead to severe liver damage, cirrhosis (scar tissue), or even liver failure.

Fatty liver disease usually produces mild or no symptoms. It is like alcoholic liver disease, but it isn't caused by alcohol and can occur in people who drink little or no alcohol.

### How is fatty liver disease linked to overweight?

The cause of fatty liver disease is still not known. The disease most often affects people who are middle-aged, overweight or obese, and/or diabetic. Fatty liver disease may also affect children.

### How can weight loss help?

Although there is no specific treatment for fatty liver disease, patients are generally advised to lose weight, eat a healthy diet, increase physical activity, and avoid drinking alcohol. If you have fatty liver disease, lowering your body weight to a healthy range may improve liver tests and reverse the disease to some extent.

## Kidney Disease

### What is kidney disease?

Your kidneys are two bean-shaped organs that filter blood, removing extra water and waste products, which become urine. Your kidneys also help control blood pressure so that your body can stay healthy.

Kidney disease means that the kidneys are damaged and can't filter blood like they should. This damage can cause wastes to build up in the body. It can also cause other problems that can harm your health.

### How is kidney disease linked to overweight?

Obesity increases the risk of diabetes and high blood pressure, the most common causes of chronic kidney disease. Recent studies suggest that even in the absence of these risks, obesity itself may promote chronic kidney disease and quicken its progress.

### How can weight loss help?

If you are in the early stages of chronic kidney disease, losing weight may slow the disease and keep your kidneys healthier longer. You should also choose foods with less salt (sodium), keep your blood pressure under control, and keep your blood glucose in the target range.

## NASH Clinical Research Network

The National Institute of Diabetes and Digestive and Kidney Diseases funds the NASH Clinical Research Network, which comprises eight clinical centers located throughout the United States and a coordinating center at The Johns Hopkins University.

The NASH network researches the nature and underlying cause of NASH and conducts clinical studies on prevention and treatment.

## Pregnancy Problems

### What are pregnancy problems?

Overweight and obesity raise the risk of health problems for both mother and baby that may occur during pregnancy. Pregnant women who are overweight or obese may have an increased risk for



- developing gestational diabetes (high blood sugar during pregnancy)
- having preeclampsia (high blood pressure during pregnancy that can cause severe problems for both mother and baby if left untreated)
- needing a C-section and, as a result, taking longer to recover after giving birth

Babies of overweight or obese mothers are at an increased risk of being born too soon, being stillborn (dead in the womb after 20 weeks of pregnancy), and having neural tube defects (defects of the brain and spinal cord).

### How are pregnancy problems linked to overweight?

Pregnant women who are overweight are more likely to develop insulin resistance, high blood sugar, and high blood pressure. Overweight also increases the risks associated with surgery and anesthesia, and severe obesity increases surgery time and blood loss.

Gaining too much weight during pregnancy can have long-term effects for both mother and child. These effects include that the mother will have overweight or obesity after the child is born. Another risk is that the baby may gain too much weight later as a child or as an adult.

If you are pregnant, check the sidebar for general guidelines about weight gain. Talk to your health care provider about how much weight gain is right for you during pregnancy.

### How can weight loss help?

If you are overweight or obese and would like to become pregnant, talk to your health care provider about losing weight first. Reaching a normal weight before becoming pregnant may reduce your chances of developing weight-related problems. Pregnant women who are overweight or obese should speak with their health care provider about limiting weight gain and being physically active during pregnancy.

Losing excess weight after delivery may help women reduce their health risks. For example, if

## How many pounds should I gain during pregnancy?

Guidelines from the Institute of Medicine and the National Research Council, issued in 2009, recommend the following amount of weight gain during pregnancy<sup>7</sup>:

Pre-pregnancy Weight	Amount to Gain
Underweight (BMI < 18.5)	28–40 lbs.
Normal Weight (BMI 18.5–24.9)	25–35 lbs.
Overweight (BMI 25–29.9)	15–25 lbs.
Obesity (BMI 30+)	11–20 lbs.

a woman developed gestational diabetes, losing weight may lower her risk of developing diabetes later in life.

## How can I lower my risk of having health problems related to overweight and obesity?

If you are considered to be overweight, losing as little as 5 percent of your body weight may lower your risk for several diseases, including heart disease and type 2 diabetes. If you weigh 200 pounds, this means losing 10 pounds. Slow and steady weight loss of 1/2 to 2 pounds per week, and not more than 3 pounds per week, is the safest way to lose weight.

Federal guidelines on physical activity recommend that you get at least 150 minutes a week of moderate aerobic activity (like biking or brisk walking). To lose weight, or to maintain weight loss, you may need to be active for up to 300 minutes per week. You also need to do activities to strengthen muscles (like push-ups or sit-ups) at least twice a week. See the Resources section for a hyperlink to these guidelines.



Federal dietary guidelines and the MyPlate website recommend many tips for healthy eating that may also help you control your weight (see the Resources section for hyperlinks). Here are a few examples:

- Make half of your plate fruits and vegetables.
- Replace unrefined grains (white bread, pasta, white rice) with whole-grain options (whole wheat bread, brown rice, oatmeal).
- Enjoy lean sources of protein, such as lean meats, seafood, beans and peas, soy, nuts, and seeds.

For some people who have obesity and related health problems, bariatric (weight-loss) surgery may be an option. Bariatric surgery has been found to be effective in promoting weight loss and reducing the risk for many health problems. For more information, see the Resources section to download or request a copy of the WIN fact sheet *Bariatric Surgery for Severe Obesity*.

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## Research

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts and supports a broad range of basic and clinical obesity research. More information about obesity research is available at <http://www.obesityresearch.nih.gov>.

Participants in clinical trials can play a more active role in their own health care, gain access to new research treatments before they are widely available, and help others by contributing to medical research. For more information, visit <http://www.clinicaltrials.gov>.

## Resources

### Additional Reading from the Weight-control Information Network

The following publications are available online at <http://www.win.niddk.nih.gov/publications> and also by calling WIN toll-free at 1-877-946-4627:

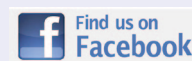
- **Bariatric Surgery for Severe Obesity** explains how this weight-loss surgery helps patients with extreme obesity to lose weight. This fact sheet explains which patients might choose this option and describes the different types of bariatric surgery.
- **Better Health and You: Tips for Adults** helps adults plan steps toward eating healthier and being more physically active. This brochure also explains the benefits of getting healthy and the harmful effects of being overweight.
- **Dieting and Gallstones** answers common questions about the causes, effects, and treatment of gallstones.
- **Fit for Two: Tips for Pregnancy** offers ideas to help women eat healthier and be physically active before, during, and after pregnancy.

### Additional Resources

- **2008 Physical Activity Guidelines for Americans**  
<http://www.health.gov/paguidelines>
- **Action for Health in Diabetes (Look AHEAD) Trial**  
<https://www.lookaheadtrial.org>
- **BMI Calculator**  
<http://www.nhlbisupport.com/bmi/bminojs.htm>
- **Dietary Guidelines for Americans, 2010**  
<http://www.health.gov/DietaryGuidelines>
- **MyPlate**  
<http://www.choosemyplate.gov>
- **National Cancer Institute**  
<http://www.cancer.gov>
- **National Diabetes Education Program**  
<http://www.yourdiabetesinfo.org>
- **National Diabetes Information Clearinghouse**  
<http://www.diabetes.niddk.nih.gov>
- **National Digestive Diseases Information Clearinghouse**  
<http://www.digestive.niddk.nih.gov>
- **National Institute of Arthritis and Musculoskeletal and Skin Diseases**  
<http://www.niams.nih.gov>
- **National Kidney Disease Education Program**  
<http://nkdep.nih.gov>
- **U.S. Department of Agriculture Nutrition Website**  
<http://www.nutrition.gov>

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The Weight-control Information Network (WIN) is a national information service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH). WIN provides the general public, health professionals, and the media with science-based, up-to-date, culturally relevant materials and tips. Topics include healthy eating, barriers to physical activity, portion control, and eating and physical activity myths. Publications produced by WIN are carefully reviewed by both NIDDK scientists and outside experts.

This publication is not copyrighted. WIN encourages users of this fact sheet to copy and share as many copies as desired. This brochure is also available at <http://www.win.niddk.nih.gov>.

Inclusion of resources is for information only and does not imply endorsement by NIDDK or WIN.

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National Institutes of Health  
NIH Publication No. 07-4098  
November 2004  
Updated December 2012

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