

Weight and Waist Measurement: Tools for Adults



U.S. DEPARTMENT
OF HEALTH AND
HUMAN SERVICES

WIN *Weight-control Information Network*

Health care providers use body mass index (BMI) and waist circumference measures to assess a person's risk of developing diabetes, heart disease, or other health problems. This fact sheet tells you how to measure your BMI and waist circumference, and what these measures mean for your health.

Body mass index

BMI measures your weight in relation to your height, and is closely associated with measures of body fat. You can calculate your BMI using this formula:

$$\text{BMI} = \frac{\text{weight (pounds)} \times 703}{\text{height squared (inches}^2\text{)}}$$

For example, for someone who is 5 feet, 7 inches tall and weighs 220 pounds, the calculation would look like this:

$$\text{BMI} = \frac{220 \text{ pounds} \times 703}{67 \text{ inches} \times 67 \text{ inches}} = \frac{154660}{4489} = 34.45$$

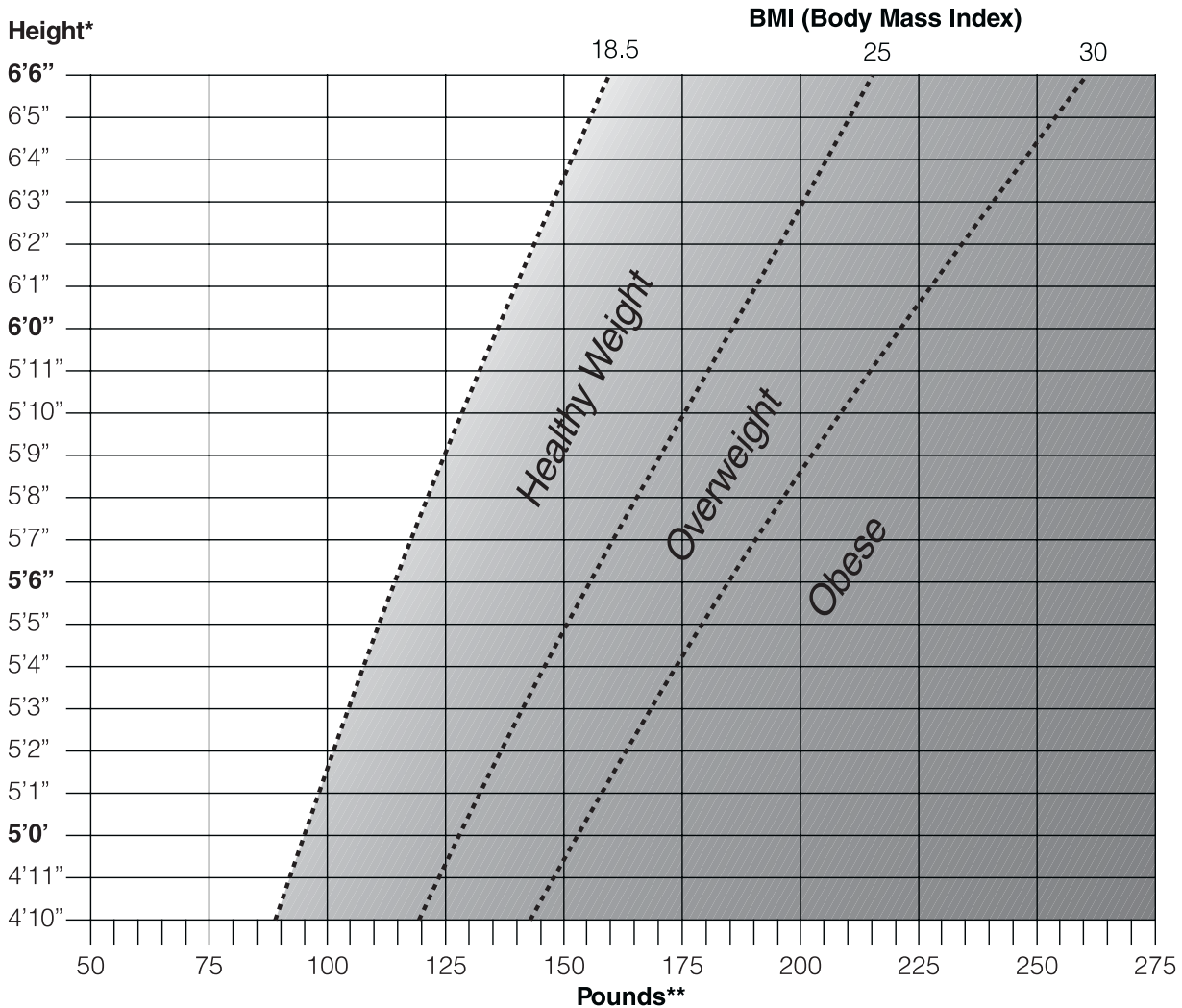
A BMI of 18.5 to 24.9 is considered healthy. A person with a BMI of 25 to 29.9 is considered overweight, and a person with a BMI of 30 or more is considered obese.

You can also find your weight group on the chart on page 2. The chart applies to all adults. The higher weights in the healthy range apply to people with more muscle and bone, such as men. Even within the healthy range, weight gain could increase your risk for health problems.

Because BMI does not show the difference between fat and muscle, it does not always accurately predict when weight could lead to health problems. For example, someone with a lot of muscle (such as a body builder) may have a BMI in the unhealthy range, but still be healthy and have little risk of developing diabetes or having a heart attack.

Today, 64.5 percent of adults in the U.S. are overweight or obese. How do you know if you are among them? Two simple measures, body mass index (BMI) and waist circumference, provide useful estimates of overweight, obesity, and body fat distribution.





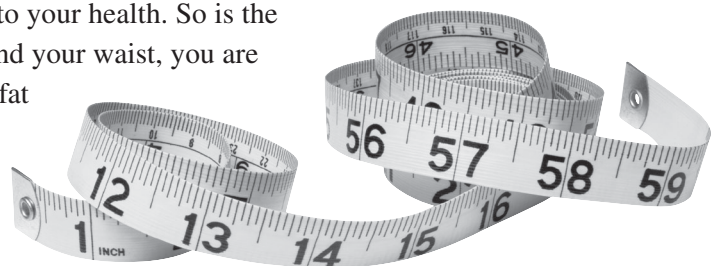
Find your weight on the bottom of the graph. Go straight up from that point until you come to the line that matches your height. Then look to find your weight group. The higher your BMI is over 25, the greater chance you may have of developing health problems.

* Without shoes ** Without clothes

BMI also may not accurately reflect body fatness in people who are very short (under 5 feet) and in older people, who tend to lose muscle mass as they age. And it may not be the best predictor of weight-related health problems among some racial and ethnic groups such as African American and Hispanic/Latino American women. But for most people, BMI is a reliable way to tell if your weight is putting your health at risk.

Waist circumference

Excess weight, as measured by BMI, is not the only risk to your health. So is the location of fat on your body. If you carry fat mainly around your waist, you are more likely to develop health problems than if you carry fat mainly in your hips and thighs. This is true even if your BMI falls within the normal range. Women with a waist measurement of more than 35 inches or men with a waist measurement of more than 40 inches may have a



higher disease risk than people with smaller waist measurements because of where their fat lies.

To measure your waist circumference, place a tape measure around your bare abdomen just above your hip bone. Be sure that the tape is snug, but does not compress your skin, and is parallel to the floor. Relax, exhale, and measure your waist.

How does overweight or obesity affect my health?

Extra weight can put you at higher risk for these health problems:

- type 2 diabetes (high blood sugar)
- high blood pressure
- heart disease and stroke
- some types of cancer
- sleep apnea (when breathing stops for short periods during sleep)
- osteoarthritis (wearing away of the joints)
- gallbladder disease
- liver disease
- irregular menstrual periods

What should I do if my BMI or waist measurement is too high?

If your BMI is between 25 and 30 and you are otherwise healthy, try to avoid gaining more weight, and look into healthy ways to lose weight and increase physical activity. Talk to your health care provider about losing weight if:

- your BMI is 30 or above, **or**
- your BMI is between 25 and 30 **and** you have:
 - two or more of the health problems listed above **or**
 - a family history of heart disease or diabetes, **or**
- your waist measures over 35 inches (women) or 40 inches (men)—even if your BMI is less than 25—**and** you have:
 - two or more of the health problems listed above **or**
 - a family history of heart disease or diabetes.

Extra weight can put you at a higher risk for many health problems including type 2 diabetes, high blood pressure, and heart disease.

Additional Reading

Healthy Eating and Physical Activity Across Your Lifespan: Better Health and You. NIH Publication No. 02-4992. June 2002. Available from WIN.

Understanding Adult Obesity. NIH Publication No. 01-3680. October 2001. Available from WIN.

Active at Any Size. NIH Publication No. 04-4352. Reprinted April 2004. Available from WIN.

Weight-loss and Nutrition Myths. NIH Publication No. 04-4561. Reprinted March 2004. Available from WIN.

Weight-control Information Network

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The Weight-control Information Network (WIN) is a national service of the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health, which is the Federal Government's lead agency responsible for biomedical research on nutrition and obesity. Authorized by Congress (Public Law 103-43), WIN provides the general public, health professionals, the media, and Congress with up-to-date, science-based health information on weight control, obesity, physical activity, and related nutritional issues.

WIN answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about weight control and related issues.

Publications produced by WIN are reviewed by both NIDDK scientists and outside experts. This fact sheet was also reviewed by Robert Kushner, M.D., Professor of Medicine, Northwestern University and Medical Director, Wellness Institute, Northwestern Memorial Hospital, and Domenica Rubino, M.D., George Washington University Weight Management Program.



National Institute of Diabetes and Digestive and Kidney Diseases

NIH Publication No. 04-5283
Reprinted June 2004

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