

# Weight and Waist Measurement: Tools for Adults

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

NIDDK | NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

## WIN Weight-control Information Network

Today, 66 percent of adults in the United States are considered 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.

Health care providers also use 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 it 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:

$$\text{BMI} = \frac{220 \text{ pounds} \times 703}{67 \text{ inches} \times 67 \text{ inches}} = \frac{154,660}{4,489} = 34.45$$

A BMI of 18.5 to 24.9 is considered to be in the healthy range. 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.

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You can also find your weight group on the chart below. 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 overweight or obese range, but still be healthy and have little risk of developing diabetes or having a heart attack.

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-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. Where excess fat is located on your body may be another risk.

Table 1. Body Mass Index

	NORMAL						OVERWEIGHT					OBESE									EXTREME OBESITY			
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Height (Feet-Inches)	Weight (Pounds)																							
4'10"	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201
4'11"	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208
5'00"	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215
5'01"	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222
5'02"	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229
5'03"	107	112	118	124	130	135	141	146	152	158	163	169	174	180	186	191	197	203	208	214	220	225	231	237
5'04"	110	116	122	128	134	140	145	151	157	163	169	175	180	186	191	197	204	209	215	221	227	232	238	244
5'05"	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252
5'06"	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260
5'07"	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268
5'08"	125	131	138	144	151	158	164	171	177	184	190	197	204	210	216	223	230	236	243	249	256	262	269	276
5'09"	128	135	142	149	155	162	169	176	182	189	196	203	210	216	223	230	236	243	250	257	263	270	277	284
5'10"	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292
5'11"	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301
6'00"	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309
6'01"	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	275	280	288	295	302	310	318
6'02"	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326
6'03"	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335
6'04"	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344

Adapted from: George Bray, Pennington Biomedical Research Center; *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report*, National Institutes of Health, National Heart, Lung, and Blood Institute, September 1998.

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 that it 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 look into healthy ways to improve your eating and physical activity habits.

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

*Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.* September 1998. This National Heart, Lung, and Blood Institute report targets primary care practitioners and provides evidence for the effects of treatment on overweight and obesity.

*Active at Any Size.* October 2006. Available from WIN.

*Choosing a Safe and Successful Weight-loss Program.* April 2008. Available from WIN.

*Do You Know the Health Risks of Being Overweight?* October 2007. Available from WIN.

*Healthy Eating and Physical Activity Across Your Lifespan: Better Health and You.* January 2008. Available from WIN.

*Physical Activity and Weight Control.* January 2007. Available from WIN.

*Tips to Help You Get Active.* January 2006. Available from WIN.

*Understanding Adult Obesity.* November 2008. Available from WIN.

*Weight-loss and Nutrition Myths.* August 2006. Available from WIN.

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Publications produced by WIN are carefully reviewed by both NIDDK scientists and outside experts.

This fact sheet is also available at <http://www.win.niddk.nih.gov>.

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