

Does Body Weight Affect Cancer Risk?

Being overweight or obese is clearly linked to an overall increased risk of cancer. According to research from the American Cancer Society, excess body weight is thought to be responsible for about 11% of cancers in women and about 5% of cancers in men in the United States, as well as about 7% of all cancer deaths.

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What types of cancer are linked with excess body weight?

Being overweight or obese is clearly linked with an increased risk of many types of cancer, including:

- Breast cancer (in women past menopause)
- Colon and rectal cancer
- Endometrial cancer (cancer of the lining of the uterus)
- Esophagus cancer
- Gallbladder cancer
- Kidney cancer
- Liver cancer
- Ovarian cancer
- Pancreas cancer

- Stomach cancer
- Thyroid cancer
- Multiple myeloma
- Meningioma (a tumor of the lining of the brain and spinal cord)

Being overweight or obese might also raise the risk of other cancers, such as:

- Non-Hodgkin lymphoma
- Male breast cancer
- Cancers of the mouth, throat, and voice box
- Aggressive forms of prostate cancer

The link to body weight is stronger for some cancers than for others. For example, excess body weight is thought to be a factor in more than half of all endometrial cancers, whereas it is linked to a smaller portion of other cancers.

Why does excess body weight increase the risk of cancer?

Excess body weight may affect cancer risk in a number of ways, some of which might be specific to certain cancer types. Excess body fat might increase cancer risk by affecting:

- Inflammation in the body
- Cell and blood vessel growth
- Cells' ability to live longer than they normally would
- Levels of certain hormones, such as insulin and estrogen, which can fuel cell growth
- Other factors that regulate cell growth, such as insulin-like growth factor-1 (IGF-1)
- The ability of cancer cells to spread (metastasize)

The links between body weight and cancer are complex and are not yet fully understood. For example, while studies have found that excess weight is linked with an increased risk of breast cancer in women after menopause, it does not seem to increase the risk of breast cancer before menopause. The reasons for this are not clear.

The timing of weight gain might also affect cancer risk. Being overweight during childhood and young adulthood might be more of a risk factor than gaining weight later in life for some cancers. For example, some research suggests that women who are

overweight as teenagers (but not those who gain weight as adults) may be at higher risk for developing ovarian cancer before menopause.

Clearly, more research is needed to better define the links between body weight and cancer.

Does losing weight reduce cancer risk?

Research on how losing weight might lower the risk of developing cancer is limited. Still, there's growing evidence that weight loss might reduce the risk of some types of cancer, such as breast cancer (after menopause) and endometrial cancer.

Some body changes that occur as a result of weight loss suggest it may, indeed, reduce cancer risk. For example, overweight or obese people who intentionally lose weight have reduced levels of certain hormones that are related to cancer risk, such as insulin, estrogens, and androgens.

While we still have much to learn about the link between weight loss and cancer risk, people who are overweight or obese should be encouraged and supported if they try to lose weight. Aside from possibly reducing cancer risk, losing weight can have many other health benefits, such as lowering the risk of heart disease and diabetes. Losing even a small amount of weight has health benefits and is a good place to start.

How common is excess body weight?

Modern life in America has led many people to eat more unhealthy foods, eat bigger food portions, and be less active. As a result, the number of Americans who are overweight or obese (very overweight) has been rising. More than 1 in 3 American adults is now obese, and another 1 in 3 is overweight.

Being overweight or obese can have far-reaching health consequences. According to the US Centers for Disease Control and Prevention (CDC), excess body weight increases a person's risk for:

- Heart disease
- Type 2 diabetes
- High blood pressure
- High cholesterol levels
- Stroke
- Gallbladder disease

- Sleep apnea and breathing problems
- Arthritis
- Low quality of life
- Depression and anxiety
- Certain cancers

Overweight and obese people, on average, do not live as long as people who stay at a healthy body weight throughout their lives.

Excess body weight in children and teens

Not only are more adults overweight or obese, but more children are, too. Among children and teens, about 20% are now obese. This number is much higher than it was a few decades ago, although it has leveled off in recent years.

Some of the same health problems affecting obese adults can also affect obese children. These include heart disease risk factors such as high cholesterol levels and high blood pressure, as well as asthma, sleep apnea, type 2 diabetes, muscle and joint problems, and liver disease. Obese children and teens are also at higher risk for anxiety, depression, and social and psychological problems, such as being bullied and having poor self-esteem.

Overweight and obese children and teens are also more likely to have weight problems as adults, as well as the risk of health problems that can come with this.

How to find your body mass index (BMI)

Finding your body mass index, or BMI, is a way to help you figure out if you are at a healthy weight for your height. BMI is a number based on your weight and height. In general, the higher the number, the more body fat a person has. BMI is often used as a screening tool to decide if your weight might be putting you at risk for health problems such as heart disease, diabetes, and cancer.

BMI is used to broadly define different weight groups in adults 20 years old or older.

- **Underweight:** BMI is less than 18.5
- **Normal weight:** BMI is 18.5 to 24.9
- **Overweight:** BMI is 25 to 29.9
- **Obese:** BMI is 30 or more

In adults, BMI is calculated the same way for both men and women. There are several ways to find your BMI. (See below for information about how to calculate BMI in children and teens.)

Use the American Cancer Society BMI calculator

BMI can be easily calculated using [our online calculator](#)¹.

Use a BMI chart

Charts are another easy way to find your BMI. To use the table below, find your height on the left side of the chart, then go across to the weight that is closest to yours. At the top of the chart you can see your BMI, and at the bottom of the chart you can see which category you fit into – healthy weight, overweight, or obese:

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Height	Weight in Pounds																
4'10"	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
4'11"	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
5'	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
5'1"	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
5'2"	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
5'3"	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
5'4"	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
5'5"	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
5'6"	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
5'7"	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
5'8"	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
5'9"	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
5'10"	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
5'11"	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
6'	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
6'1"	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
6'2"	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
6'3"	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
	Healthy Weight						Overweight					Obese					

Source: US Department of Health and Human Services, National Institutes of Health, National Health, Lung, and Blood Institute. The Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults: Evidence Report. September 1998 [NIH pub. No. 98-4083].

Some examples:

This table shows us that a woman who is 5 ft. 4 in. tall is considered overweight (BMI is 25 to 29) if she weighs between about 145 and 169 pounds. She is considered obese

(BMI is 30 or more) if she is closer to 174 pounds or more.

A man who is 5 ft. 10 in. tall is considered overweight (BMI is 25 to 29) if he weighs between about 174 and 202 pounds, and is obese (BMI is 30 or more) if he is closer to 209 pounds or more.

Calculate your BMI

You can also calculate your own BMI. The actual formula to determine BMI uses metric system measurements: weight in kilograms (kg) divided by height in meters, squared (m^2).

When using pounds and inches, the formula needs to be altered slightly. Multiply your weight in pounds by 703. Divide that by your height in inches, squared:

$$\text{BMI} = (\text{your weight in pounds} \times 703) \div (\text{your height in inches} \times \text{your height in inches})$$

For example, if you weigh 120 pounds and are 5 ft. 3 in. (63 in.) tall:

$$\text{BMI} = (120 \times 703) \div (63 \times 63) \text{ or } 84,360 \div 3969 = 21.3$$

This is well within the healthy weight range.

BMI in children and teens

BMI can be calculated the same way for children and teens as it is for adults, but the numbers don't have the same meaning. This is because the normal amount of body fat changes with age in children and teens, and is different between boys and girls. So for kids, BMI levels that define being normal weight or overweight are based on the child's age and sex.

To account for this, the US Centers for Disease Control and Prevention (CDC) has developed age- and sex-specific growth charts. These charts are used to translate a BMI number into a percentile based on a child's sex and age. The percentiles are then used to determine the different weight groups:

- **Underweight:** less than the 5th percentile
- **Normal weight:** 5th percentile to less than the 85th percentile
- **Overweight:** 85th percentile to less than the 95th percentile
- **Obese:** 95th percentile or higher

An easy way to determine your child's BMI percentile is to use the CDC's online BMI percentile calculator at <https://www.cdc.gov/healthyweight/bmi/calculator.html>².

Limitations and concerns about the use of BMI

Doctors and nurses often use BMI to help find out if a person might have a weight problem. BMI gives a good estimate of total body fat for most people, but it doesn't work well for everybody. For example:

- Bodybuilders or other very muscular people can have a high BMI because of their muscle mass, even though they're not necessarily overweight.
- The BMI can also underestimate body fat in people who have lost muscle mass, such as some older people.

For most adults, the BMI is a good way to get an idea of healthy weight ranges. But it's not always the final word in deciding if a person is overweight or obese. There are other things to think about when judging how much someone should weigh.

A person with a high BMI should be evaluated by a health care provider, who might use other factors such as skinfold thickness (a measure of body fat), waist size, evaluations of diet and family health problems, and other factors to find out if a person's weight might pose a health risk.

What does the American Cancer Society recommend about body weight?

To help lower your risk of cancer

As part of its [Guideline for Diet and Physical Activity for Cancer Prevention](#)³, the American Cancer Society recommends that people try to **get to and stay at a healthy weight throughout life**. The best way to stay at a healthy body weight is to balance how much (and what) you eat with how active you are. If you are overweight, the best way to get to a healthy body weight is to limit the calories you take in, and burn more calories through physical activity.

Follow a healthy eating pattern: You can lower the number of calories you take in by eating healthier foods; eating smaller amounts of food (smaller portion sizes); limiting between-meal snacks; and limiting foods and drinks that are high in calories, fat, and/or added sugars, and that provide few nutrients. Fried foods, cookies, cakes, candy, ice cream, and regular soft drinks should be replaced with vegetables and fruits, whole

grains, beans, and lower calorie beverages.

Be physically active: The American Cancer Society recommends that **adults** get 150 to 300 minutes of moderate intensity or 75 to 150 minutes of vigorous intensity activity each week (or a combination of these). Getting more is even better. **Children and teens** should get at least 1 hour of moderate or vigorous intensity activity each day.

It's also important to limit the time you spend sitting, lying down, watching TV, and looking at your phone or computer. Doing some physical activity on top of your usual activities, no matter what your level of activity, can have many health benefits.

Along with helping you get to or stay at a healthy weight, eating a healthy diet and increasing your physical activity can have their own health benefits, including lowering your risk of cancer.

For people already diagnosed with cancer

More and more evidence suggests that being overweight or obese raises the risk of cancer coming back after treatment and may lower the chances of survival for many cancers. Both during and after cancer treatment, people should try to get to and stay at a healthy weight whenever possible.

Some cancer survivors can be malnourished and underweight when they are diagnosed or as a result of cancer treatment. These people may need help gaining or maintaining their weight.

Other people may be overweight or obese when they are diagnosed with cancer. While each person's situation can be different, many people may choose to wait until after treatment is finished before making lifestyle changes that could result in weight loss. Others may choose to talk with their doctor about whether to try to lose modest amounts of weight during treatment, assuming it is monitored closely and does not affect treatment. If a person chooses to try to lose weight, it should be done safely, through a well-balanced diet and increased physical activity tailored to their specific needs.

After cancer treatment, weight should be managed with both dietary and physical activity strategies. One way to help get to a healthy weight is by reducing calorie intake. This can be done by eating lower-calorie foods (such as vegetables, fruits, and soups, and cooked whole grains), limiting your intake of fat and sugars, and limiting portion sizes – especially of high-calorie foods. Increased physical activity is also important in promoting weight loss, and in keeping weight off. Even if an ideal weight is not reached, it's likely that any weight loss will still have health benefits.

For more information, see [Nutrition and Physical Activity During and After Cancer Treatment: Answers to Common Questions](#)⁴.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/diet-physical-activity/body-weight-and-cancer-risk/body-mass-index-bmi-calculator.html
2. www.cdc.gov/healthyweight/bmi/calculator.html
3. www.cancer.org/cancer/risk-prevention/diet-physical-activity/acs-guidelines-nutrition-physical-activity-cancer-prevention.html
4. www.cancer.org/cancer/survivorship/be-healthy-after-treatment/nutrition-and-physical-activity-during-and-after-cancer-treatment.html

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Written by

The American Cancer Society medical and editorial content team

<https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html>

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