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PATIENT & CAREGIVER EDUCATION

# Nutrition and Breast Cancer: Making Healthy Diet Decisions

This information explains nutrition guidelines for people who have breast cancer, a history of breast cancer, or a high risk for breast cancer.

You can read the entire resource or just the sections that apply to you. If you have any questions, speak with your dietitian, doctor, or nurse.

## Lifestyle and Breast Cancer Risk

A healthy diet and lifestyle are associated with overall wellness. Studies show diet and lifestyle may play a role in breast cancer and its recurrence (when cancer comes back).

Keys to overall good health include:

- Achieving and maintaining an appropriate body weight
- Eating a balanced, mostly plant-based diet
- Exercising regularly
- Getting enough sleep

Certain factors that make a person more likely to get breast cancer cannot be changed. These include:

- Female sex
- The age at which you had your first period
- Increasing age
- Family history
- Genetics

Other factors that make a person more likely to get breast cancer can be changed.

These include:

- Being overweight or obese, especially for women who have gone through menopause
- Lack of exercise
- Drinking too much alcohol
- Smoking

## **Breast cancer and men**

Breast cancer is about 100 times less common in men than in women. Risk factors for breast cancer in men are similar to those for breast cancer in women. They include:

- Increasing age
- Family history
- Obesity
- Inherited gene mutations
- Heavy alcohol intake

Most of the breast cancer research and clinical trials have been done in women. However, most of the diet and lifestyle guidelines and recommendations in this resource are appropriate for both men and women. If you have questions about specific information, ask your doctor, nurse, or dietitian.

## **Maintaining a Healthy Body Weight**

Achieving and maintaining the right body weight is one of the most important things you can do for your health. Excessive body weight (specifically, body fat) is associated with an increased risk for some diseases, including certain types of cancer, type 2 diabetes, and heart disease. In fact, obesity may soon become the number one lifestyle factor that contributes to cancer in the United States.

Women who have gone through menopause and are overweight or obese have a greater risk for breast cancer. Research suggests that unnecessary weight gain during or after breast cancer treatment can increase the risk of disease recurrence as well as the risk for developing other primary cancers.

## Body mass index

Body mass index (BMI) is a measure of body weight based on height. It is one way to measure body weight. It may or may not indicate overall wellness and does not measure body fat versus muscle mass. However, it can be a useful tool in determining health and disease risk. An ideal BMI for an adult is between 18.5 and 24.9.

Find your BMI on the table below. First, find your height in the left-hand column. Go across to the next column on the same line and find your weight. Next, look at the corresponding BMI at the top of your column. This is your BMI. For example, if you weigh 130 pounds and you are 5 feet tall (60 inches), your BMI is 25.

BMI Table														
BMI	Normal					Overweight					Obese			
	19	20	21	22	23	24	25	26	27	28	29	30	35	40
Height (feet and inches)	Body Weight (pounds)													
4' 10"	91	96	100	105	110	115	119	124	129	134	138	143	167	191
4' 11"	94	99	104	109	114	119	124	128	133	138	143	148	173	198
5' 0"	97	102	107	112	118	123	128	133	138	143	148	152	179	204
5' 1"	100	106	111	116	122	127	132	137	143	148	153	158	185	211
5' 2"	104	109	115	120	126	131	136	142	147	153	158	164	191	218
5' 3"	107	112	118	124	130	135	141	146	152	158	163	169	197	225
5' 4"	110	116	122	128	134	140	145	151	157	163	169	175	204	232
5' 5"	114	120	126	132	138	144	150	156	162	168	174	180	210	240
5' 6"	118	124	130	136	142	148	155	161	167	173	179	186	216	247
5' 7"	121	127	134	140	146	153	159	166	172	178	185	191	223	255
5' 8"	125	131	138	144	151	158	164	171	177	184	190	197	230	262
5' 9"	128	135	142	149	155	162	169	176	182	189	196	203	236	270
5' 10"	132	139	146	153	160	167	174	181	188	195	202	209	243	278
5' 11"	136	143	150	157	165	172	179	186	193	200	208	215	250	286
6' 0"	140	147	154	162	169	177	184	191	199	206	213	221	258	294
6' 1"	144	151	159	166	174	182	189	197	204	212	219	227	265	302
6' 2"	148	155	163	171	179	186	194	202	210	218	225	233	272	311
6' 3"	152	160	168	176	184	192	200	208	216	224	232	240	279	319
6' 4"	156	164	172	180	189	197	205	213	221	230	238	246	287	328

You can also calculate your BMI using this tool:

[www.nhlbi.nih.gov/health/educational/lose\\_wt/BMI/bmicalc.htm](http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm)

The table below shows weight classifications according to the National Institutes of Health (NIH).

<b>Weight Classification</b>	<b>BMI</b>
Underweight	Less than 18.5
Normal	18.5 to 24.9
Overweight	25.0 to 29.9
Obesity	30.0 to 39.9
Extreme Obesity	40.0 or higher

Source: [www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/bmi\\_dis.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/bmi_dis.htm)

Keep in mind that BMI is only one health measure. Other measures include waist-to-hip ratio and waist circumference, which look at weight in your abdominal area. Extra weight in the abdominal area is associated with an increased risk for certain illnesses even in people with an ideal BMI.

## **Managing weight gain after diagnosis and treatment**

People often gain weight after breast cancer diagnosis and treatment. This is not seen as often with other types of cancer. Premenopausal women seem to gain more weight than postmenopausal women.

There are a number of reasons why people may gain weight during treatment, including:

- Eating too many calories
- Decrease in physical activity
- Early menopause
- Depression and anxiety
- Increased appetite from steroids
- “Comfort” eating or “emotional” eating
- Increased eating due to side effects of treatment like fatigue or nausea

It may be difficult to lose the weight gained during treatment. Therefore, it is important to try to maintain a healthy weight during treatment.

Use the guidelines below to help prevent weight gain. Work with your dietitian on your weight goals.

- Choose a balanced diet.
- Decrease the total amount of food you eat.
- Exercise regularly.
- Control portion sizes.
- Always place food on a plate so that you know how much you are eating.
- Avoid eating while watching TV, during “screen time” (such as checking email or watching a movie), or while talking on the phone.
- Drink 8 (8-ounce) glasses of liquids per day. Choose water or other drinks without calories such as seltzer.
- Limit your intake of fruit juice to no more than 1 cup per day. It’s better to eat whole fruit than drink juice.

## Balancing your plate

The balance of foods on your plate is important when trying to eat healthy. Keep in mind the picture of the plate in Figure 1. This can help you choose the appropriate serving sizes of different foods.

Two-thirds (or more) of your plate should be vegetables, fruits, whole grains, or beans.

For your vegetables, try to choose non-starchy ones such as:

- Broccoli
- Cabbage
- Cauliflower
- Leafy greens (e.g., spinach, lettuce, kale, collards, bok choy)
- Mushrooms
- Asparagus

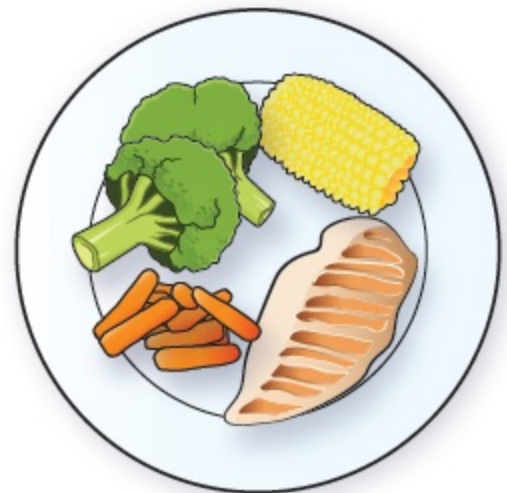


Figure 1. Balancing your plate

- Zucchini
- Peppers
- Tomatoes

Your grains, fruits, and other fiber-rich carbohydrates include:

- Whole grains (e.g., brown rice, whole-wheat pasta, quinoa, barley)
- Starchy vegetables (e.g., potatoes, sweet potatoes, corn, pumpkin)
- Whole fruits (e.g., berries, apples, pears, kiwis, oranges)

No more than one-third of your plate should be animal protein. Some good sources are:

- Fish
- Non-fat or low-fat dairy products (e.g., plain yogurt)
- Eggs
- Poultry

For protein, you can also substitute plant proteins, such as beans.

Your meal might not always look exactly like the plate shown here. You could have a cup of lentil and vegetable soup and a small apple, and you'd be getting a similar kind of meal and proportions. Also, you might get more vegetables at lunch and dinner than at breakfast. Just keep in mind the ideas of “mostly plant based” and “portion controlled” for all meals.

## **Managing portion sizes**

It is important to think about serving sizes. Serving sizes of bottled, packaged, and restaurant foods and drinks have increased over the years. The table below lists the amount of food that is equal to 1 serving size.

<b>Food Group</b>	<b>Food</b>	<b>Amount of 1 serving size</b>
Bread, cereal, rice, and pasta	Bread	1 slice
	Bagel, New York City style	1/4 bagel
	Cereal (hot)	1/2 cup
	Cereal (cold)	1 ounce (1/2 cup to 1 cup, depending on cereal)
	Pasta	1/2 cup
	Rice	1/2 cup
	Vegetables	Cooked or raw, chopped
Juice		1/4 cup
Raw, leafy		1 cup
Fruits	Chopped, cooked, or canned (unsweetened)	1/2 cup
	Dried	1/4 cup
	Juice	3/4 cup
	Fresh	1 medium fruit
Milk, yogurt, and cheese	Milk or yogurt	1 cup
	Natural cheeses (mozzarella, Swiss, muenster, cheddar, provolone, Gouda)	1 1/2 ounces
Lean meat, poultry, fish, beans, eggs, and nuts	Cooked beans	1/2 cup
	Cooked meat or fish	3 ounces
	Eggs	1
	Nuts	1/3 cup
	Peanut butter	2 tablespoons

Use the following examples of everyday items to help determine your serving sizes:

- 3 ounces of meat, poultry, or fish is about the size of a deck of cards.
- One cup of fruit, vegetables, or cereal is about the size of a baseball.
- 2 tablespoons of peanut butter is about the size of a ping-pong ball.

- A medium size bagel is about the size of a hockey puck.
- A medium baked potato is about the size of a computer mouse.
- 1 ounce of cheese is about the size of a domino.
- 1 ounce of nuts is about 1 small handful.
- A teaspoon of butter is about the size of a die.

## Common measurements

Use measuring cups and spoons to measure your portions. Here are some common measures that may be helpful to remember.

- 3 teaspoons = 1 tablespoon
- 4 tablespoons =  $\frac{1}{4}$  cup
- 4 ounces =  $\frac{1}{2}$  cup
- 8 ounces = 1 cup
- 1 cup =  $\frac{1}{2}$  pint
- 2 cups = 1 pint

## Understanding food labels

Reading and understanding food labels can help you make wise food choices.

There are new food labels coming out on foods that will provide more information and be easier to read. These changes include:

- Listing added sugars. The World Health Organization (WHO) recommends that most people limit added sugars to 25 grams per day.
- The amount of vitamin D and potassium that is in a serving of the food.
- The serving size for foods and beverages will be changed to reflect amounts that people actually eat.
- The number of calories and the serving size will be in larger, bolder numbers, making them easier to read.
- The percentage of daily value for nutrients such as sodium, fiber and vitamin D are being updated based on newer scientific evidence.

Here is an example of the current food label and the new food label.



<b>Nutrition Facts</b>			
Serving Size 2/3 cup (55g)			
Serving Per Container About 8			
Amount Per Serving			
<b>Calories</b> 230	Calories from Fat 72		
% Daily Value*			
<b>Total Fat</b> 8g	<b>12%</b>		
Saturated Fat 1g	5%		
Trans Fat 0g			
<b>Cholesterol</b> 0mg	<b>0%</b>		
<b>Sodium</b> 160mg	<b>7%</b>		
<b>Total Carbohydrate</b> 37g	<b>12%</b>		
Dietary Fiber 4g	16%		
Sugars 1g			
<b>Protein</b> 3g			
Vitamin A	10%		
Vitamin C	8%		
Calcium	20%		
Iron	45%		
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

<b>Nutrition Facts</b>	
8 servings per container	
<b>Serving size</b>	<b>2/3 cup (55g)</b>
Amount per serving	
<b>Calories</b>	<b>230</b>
% Daily Value*	
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 3g	5%
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>7%</b>
<b>Total Carbohydrate</b> 37g	<b>13%</b>
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	<b>20 %</b>
<b>Protein</b> 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

Figure 2. Old food label (left) and new food label (right)

## How to read food labels

The label below lists the nutritional content of a 1 cup serving of macaroni and cheese. The arrows point to the boxes on the right, which explain what each line means.

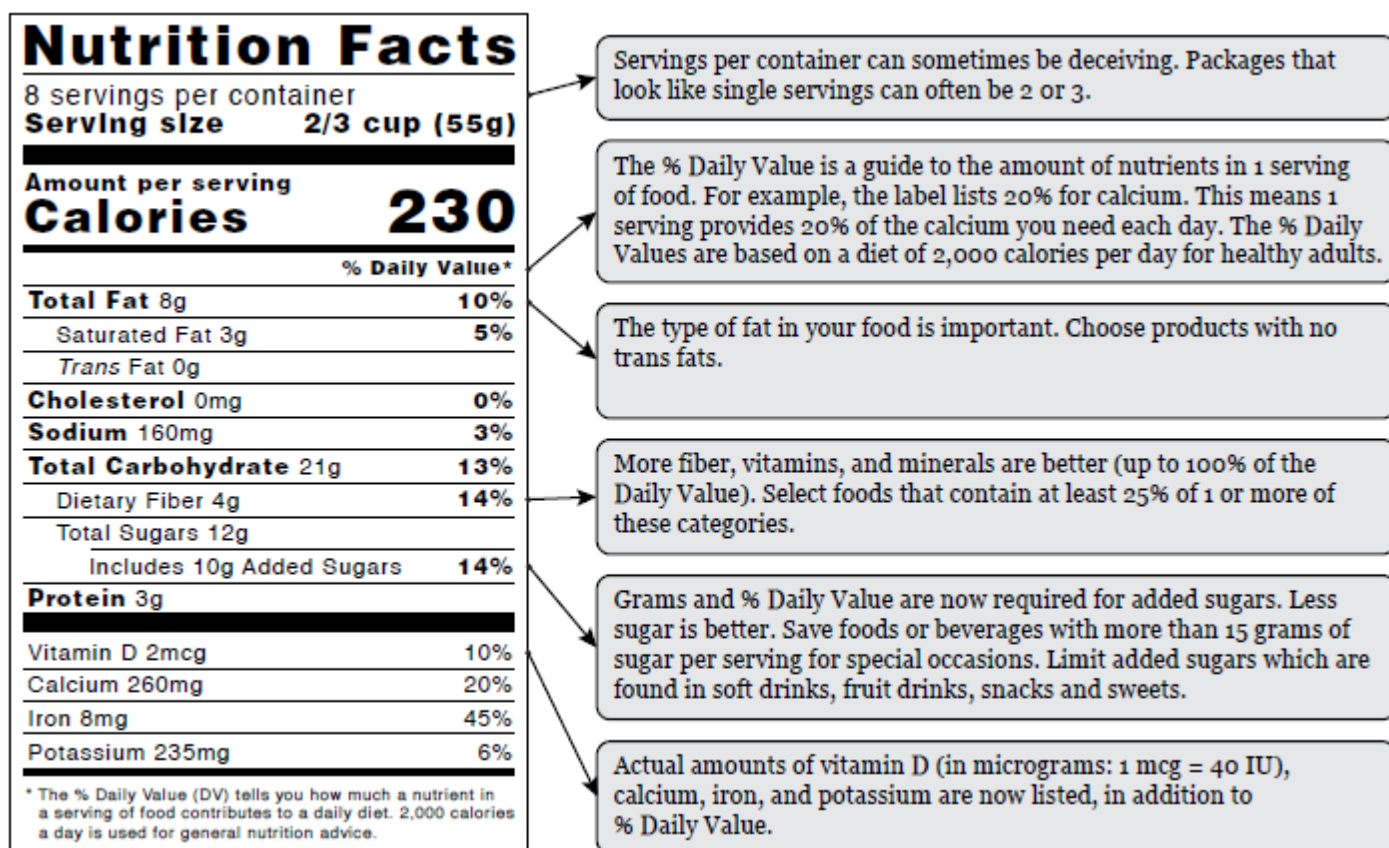


Figure 3. How to read food labels

## Keeping a food diary

Tracking what you eat and drink with a written food diary helps you be more aware of your choices. It can improve your mindfulness and awareness of what, when, and why you eat. For example, you might find you eat too much late at night when you're more tired than hungry. You might notice that you have certain snacks because you are stressed or bored.

People who keep food records over time are often more likely to achieve their nutrition and body weight goals. Keeping a food diary can also help you be more accountable about the foods that you eat.

To keep accurate food records, it is best to write down what you eat right after you eat it, including the portion size. Be as detailed as possible. For example, rather than writing "cereal and milk," write "1 cup bran flakes and 1/2 cup lowfat milk." You might also include how you were feeling at the time you ate. See the sample food diary in the "Sample Food Diary" section for an example. Your dietitian can help you use these records to meet your nutrition goals.

Many people find writing a food diary by hand with pen and a small notebook works best. If you prefer to use your smartphone, many apps can help you track

your eating. You may also use the “Notes” section in your smartphone. Any method of keeping a food diary is fine, as long as it works for you.

Keep in mind that you do not have to change your diet all at once. Set one or two goals each week. If you have setbacks, you can learn from them. Small changes add up to big results over time.

## **Designing a Healthy Diet**

The guidelines below can help you design a healthy diet. Remember there is no “one size fits all” diet to promote wellness or cancer risk reduction. However, most healthy diets do have some common characteristics. Work with your dietitian to find the diet that is best for you.

### **Control your calories**

Choose foods that naturally contain less calories for their volume. These include whole vegetables, fruits, fiber-rich carbohydrates, and lean proteins.

- Watch portion sizes at all meals and snacks.
- Avoid all-day snacking. Eat your set meals and have snacks only if you need them.
- Avoid sweetened drinks such as sodas and soft drinks.
- Limit juice to no more than 1 cup a day.
- Limit how much alcohol you drink.

### **Choose plant-based foods**

- Vegetables, fruits, and other whole plant foods should be the largest part of your diet.
- Choose a wide variety of vegetables and fruits. Choose ones with different colors, such as dark green, purple, orange, yellow, red, and white.
- Aim to eat about 3 cups of vegetables and 1 to 2 cups of fruit each day. Be sure to stay within your caloric needs.

### **Limit total and added sugars**

- There is no clear evidence on how sugar affects cancer risk. However, it is wise

to limit added sugars for many reasons. Foods and beverages with added sugars often add too many calories to the diet. Over time, they can contribute to overweight or obesity, chronic hyperglycemia (high blood sugar) and hyperinsulinemia (too much insulin circulating in the blood), and insulin resistance. These conditions are associated with an increased risk for developing cancer.

- The World Health Organization (WHO) recommends limiting added sugars to no more than 5% of total calories. This comes out to 25 grams (or 6 teaspoons) of added sugar for someone eating 2,000 calories a day.
- You don't need to limit naturally occurring sugars as much as added sugars. Naturally occurring sugars are found in foods such as fresh fruit and milk. Eat these these foods in the right portions. It is possible to get too much sugar from eating too much of these foods.
- Read food labels. Ingredients are listed in descending order. This means that the product has more of the ingredients that are listed first, and less of those listed last.
- Sugar is sugar whether it is raw, brown, white, organic, or powdered. If you are concerned about the sugar content in packaged foods, check the label. Make sure it is not one of the first few ingredients on the list.
- If you have other health concerns, such as diabetes, prediabetes, insulin resistance, or obesity, talk with your dietitian.
- Food labels list added sugars in many ways. Some names to watch for are:

<ul style="list-style-type: none"> <li>• Corn syrup</li> <li>• Brown rice syrup</li> <li>• High-fructose corn syrup</li> <li>• Muscovato</li> </ul>	<ul style="list-style-type: none"> <li>• Fruit juice concentrate</li> <li>• Maltose</li> <li>• Dextrose</li> <li>• Evaporated cane juice</li> <li>• Turbinado sugar</li> </ul>	<ul style="list-style-type: none"> <li>• Sucrose</li> <li>• Glucose</li> <li>• Fructose</li> <li>• Barley malt</li> <li>• Raw sugar</li> </ul>	<ul style="list-style-type: none"> <li>• Honey</li> <li>• Maple syrup</li> <li>• Cane sugar</li> <li>• Invert sugar</li> </ul>
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## Fiber in your diet

Fiber is good for your health and may help to:

- Stabilize your blood sugar.
- Improve your cholesterol levels.
- Improve your bowel function.

Most adults should consume at least 25 to 35 grams of fiber per day. To reach fiber goals each day, most adults need:

- About 2 ½ cups of vegetables or legumes, and
- 2 cups of fruit, and
- 3 servings of whole grains (this is equal to 1 ½ cups of whole-grain cereal, oats, whole-wheat pasta, millet, quinoa, brown rice, or other cooked whole grains, or 3 slices of whole-wheat bread)

Increasing your fiber over a short period of time can cause gas and bloating. Therefore, increase your fiber intake slowly and drink plenty of water. This will help your body adjust to the change.

Vegetables, fruits, beans, and whole grains are usually high in fiber. They also have many vitamins and minerals. Whole grains include the entire grain seed. They are better for you than refined grains. Examples of whole grains are:

<ul style="list-style-type: none"> <li>• Brown rice, black rice, and wild rice</li> <li>• Spelt</li> <li>• Millet</li> </ul>	<ul style="list-style-type: none"> <li>• Quinoa</li> <li>• Bulgur</li> <li>• Oats and oatmeal</li> </ul>	<ul style="list-style-type: none"> <li>• Buckwheat</li> <li>• Barley</li> <li>• Whole wheat</li> <li>• Popcorn</li> </ul>
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Read the labels on your foods to find those that are high in fiber. Labels that list the word “whole” or “whole grain” before the first ingredient are good fiber sources. For example, look for “whole wheat flour” as the first ingredient in bread, not just “wheat flour.”

Some foods such as yogurts and snack bars now contain added fiber, such as inulin. There is not enough evidence to suggest that these added fibers have the same health benefits as those present naturally in food.

In general, a high-fiber food has at least 3 grams of fiber per serving. The table below lists some good food sources of fiber.

Food	Portion	Fiber (grams)
<b>Vegetables</b>		
Artichoke, cooked	1 medium	10 grams
Broccoli, cooked	1 cup	6 grams

Carrots, raw	1 cup, chopped	3.5 grams
Baked potato with skin	1 small	3 grams
Cauliflower, cooked	1 cup	3 grams
<b>Fruit</b>		
Raspberries (fresh or frozen)	1 cup	8 grams
Pear (with skin)	1 medium	5.5 grams
Avocado	1/2 medium	5 grams
Apple (with skin)	1 medium	4.5 grams
Orange	1 medium	3 grams
<b>Grains</b>		
Whole wheat pasta	1 cup	6 grams
Wild rice, cooked	1/2 cup	5 grams
Whole wheat bread	2 slices	4 grams
Popcorn (air-popped)	3 cups	3.5 grams
Barley, cooked	1/2 cup	3 grams
<b>Beans, legumes, nuts, seeds</b>		
Lentils, cooked	1/2 cup	8 grams
Black beans, cooked	1/2 cup	7.5 grams
Almonds	1 ounce	3.5 grams
Pistachios	1 ounce	3 grams

## Fats in your diet

Some fat in our diets is necessary and healthy. There are different types of fat. Some are healthier than others.

Fat is calorie-dense. One gram of fat has more than 9 calories, while 1 gram of a carbohydrate or a protein has 4 calories. Therefore, high-fat foods have a lot of calories in a small amount of food. If you are trying to lose weight or maintain weight loss, this is important.

For some medical conditions, limiting fat may be helpful. However, for most people, there is no need to avoid fat. What is important is to avoid eating too many calories and to choose healthier types of fats.

## **Eat less saturated and trans fats**

These fats may raise unhealthy types of cholesterol levels. This is associated with heart disease.

- Saturated fats are naturally occurring fats. They are found in meats (such as pork and beef) and full-fat dairy products (such as cheese and butter). Most of the saturated fat Americans eat comes from foods like burgers, sandwiches, pizza, and desserts.
- Most trans fats are made when liquid fats turn into solid fats through a process called “hydrogenation.” The Food and Drug Administration (FDA) has recognized that trans fats are a health threat. Food manufacturers are being required to remove trans fats from packaged foods. However, as they are phased out, you may still see them occasionally. Read the nutrition label, also known as the food label. Trans fats are sometimes listed as “partially hydrogenated oil.”
  - Foods that may have trans fats include coffee creamers, some margarine, microwave popcorn, and processed or packaged cookies, cakes, chips, and crackers.

## **Choose mostly monounsaturated and polyunsaturated fats**

Studies have shown these types of fats are healthier. They are found mostly in plant foods and fish and other seafood.

Good sources of healthy essential fats include:

- Fish and other seafood
  - Salmon
  - Sardines
  - Halibut
  - Mussels
  - Cod
  - Herring
  - Anchovies
- Nuts, seeds, and oils

- Almonds
- Olive oil
- Walnuts
- Canola oil
- Pumpkin seeds
- Flaxseeds
- Vegetables and fruits
  - Avocados
  - Brussels sprouts
  - Bok choy (Chinese cabbage)
  - Seaweed

## **Reduce your alcohol intake**

Research has shown a link between alcohol intake and increased risk for breast cancer.

Women who drink, on average, more than 1 serving of alcohol per day are at an increased risk of breast cancer. The risk is higher the more alcohol you drink. Drinking a lot of alcohol may also increase the risk of breast cancer in men. The type of alcoholic drink does not matter.

Drinking too much alcohol is also linked to other health problems, such as:

- Liver disease
- Cancers of the mouth, pharynx, larynx, and esophagus
- Inflammation of the stomach and pancreas
- High blood pressure

If you drink, do so in moderation. Try to save it for special occasions. If you have any questions about alcohol, talk with your doctor, nurse, or dietitian.

Pay attention to the size of the wine glasses you use at home or in restaurants. Some wine glasses hold 20 ounces or more—up to 5 times the amount in 1 serving of wine. Keep in mind that “light beer” has fewer calories—but not less alcohol—



compared with regular beer.

Each of the following is 1 serving of alcohol:

- 4 to 5 ounces of wine or champagne (about 100 calories)
- 12 ounces of regular beer (about 150 calories)
- 1.5 ounces of hard liquor, for example, 1 shot of tequila (about 100 calories).

To help dilute alcohol, use club soda as a mixer.

## **Limit salt and sodium**

Eating foods with a lot of salt may raise blood pressure and increase the risk for stroke, heart failure, and kidney disease. Consume less than 2,300 mg of sodium (about 1 teaspoon of salt) per day. Fresh food that is not processed is usually lower in sodium.

Read food labels to find out the amount of sodium in the product. Choose foods that are labeled “low sodium,” “very low sodium,” or “sodium-free.”

Here are some tips to reduce how much sodium you eat.

- When cooking, flavor foods with fresh herbs and spices instead of salt.
- Limit canned foods.
- Limit packaged, processed, pickled, and cured foods.
- Do not add salt to food at the table.

## **Eat foods with phytochemicals**

Phytochemicals are compounds in plant foods that may be good for your health. There are thousands of phytochemicals. Some are vitamins and minerals, but there are many others. We have not identified them all and are still learning about them. Some phytochemicals you may have heard of include:

- Anthocyanins
- Beta sitosterol
- Capsaicin
- Carotenes

- Catechins
- Curcumin
- Ellagic acid
- Isoflavones(see “About phytoestrogens” for more information)
- Lignans
- Lutein
- Lycopene

The best way to get phytochemicals is to eat a wide variety of plant foods. Choose different vegetables and fruits from day to day, week to week, and season to season. Phytochemicals work best together.

You get more benefits by getting phytochemicals from whole foods rather than supplement pills. Taking pills or dietary supplements with phytochemicals may not have the same benefits as eating the foods themselves. In fact, some dietary supplements with phytochemicals may cause more harm than good.

## About phytoestrogens

### Soy and phytoestrogens

Many people have questions about soy foods and cancer risk. Do soy foods promote breast cancer? Do they help prevent breast cancer?

Soy contains phytochemicals called isoflavones. Isoflavones are one type of phytoestrogen—plant compounds that are similar in structure or function to the estrogens made in our body.

Some of the concerns you may hear about soy foods and breast cancer are based on early studies in mice. However, as more and more studies look at soy intake in humans, we can make better recommendations. Research suggests it is safe and may even be good for you to eat up to 1 serving a day of whole soy foods (see table below). This includes studies done in women with hormone-sensitive breast cancer.

Whole soy food	1 serving size
Tofu	4 ounces
Miso	2 tablespoons

Tempeh	1/2 cup
Edamame (whole soybeans)	1/2 cup
Soy milk	1 cup

Some soy ingredients do not contain a significant amount of isoflavones. They are unlikely to have significant estrogen-like effects. These foods are:

- Soybean oil
- Soy lecithin
- Soy sauce

You do not have to avoid these ingredients due to any estrogen-like effects.

Other soy ingredients contain a higher amount of isoflavones. These include:

- Soy protein isolate
- Soy protein concentrate

You may see these ingredients in foods such as canned soups, frozen entrees, protein bars and drinks, meat replacements, and packaged snack items. The effects of these ingredients have not been studied well. We recommend limiting your intake of them. By limiting these foods, you are not missing out on any significant beneficial nutrients. In fact, you will probably decrease your intake of processed and packaged foods, which are often high in sugar, sodium, and other less healthy contents.

Soy foods may offer health benefits. For example, tofu is a good source of protein and calcium. However, it is unlikely that any one food, all by itself, will either cause or prevent breast cancer. For most people, a healthy diet is one that contains mostly whole foods, including a wide variety of plant foods.

## **Soy and isoflavone supplements**

While eating whole soy foods is fine, we do not recommend that you take soy isoflavone pills, soy protein powders, or other concentrated soy supplements. Some studies suggest they may increase breast cancer risk in certain groups of women, but we aren't sure yet.

In many cases, research shows that eating certain whole foods is beneficial, but

eating isolated extracts or high-dose supplements of compounds in these foods may be harmful. This seems to be true with soy. Too much of any substance, even if it is natural, is often unsafe. If in doubt, eat the foods, but don't take the pills.

## Flaxseeds and phytoestrogens

Whole and ground flaxseeds contain compounds called lignans. Like soy isoflavones, lignans have phytoestrogenic qualities. In other words, they have natural effects that weakly resemble human estrogens. You do not have to avoid all flaxseed. Some research suggests a benefit with eating flaxseed in moderation. Keep in mind, the best way to get the health benefits from seeds and nuts is to eat a variety of them. Flaxseeds may have health benefits but so do walnuts, almonds, pumpkin seeds, and many other nuts and seeds.

Flaxseed oil does not contain lignans. Therefore, it does not have phytoestrogenic properties.

## Other plant compounds and phytoestrogens

Some other plants have phytoestrogenic qualities. There is no need to avoid any whole food with regard to potential estrogenic properties. You may see lists of foods cited as “estrogenic,” but there is no research suggesting you should eliminate any actual foods from your diet.

However, people who have had a history of breast cancer should avoid certain plant compounds **in concentrated or dietary supplement form**. These include (but are not limited to):

- Red clover
- Chasteberry
- Black cohosh
- Evening primrose
- Dong quai
- Licorice

There may be other plant compounds that you should avoid taking in supplements that are not on this list. Speak with your doctor, nurse, or dietitian before taking any dietary supplement.

## About supplements

There are many supplements on the market. Americans spend about 30 billion dollars a year on dietary supplements, even though there is very little evidence that they are helpful for most people.

A balanced, mostly plant-based diet provides the right amounts of vitamins, minerals, and antioxidants for most people. This is generally the healthiest and best way to get them.

Some people may need to supplement certain nutrients. You may need supplements if you:

- Have certain medical conditions
- Are on certain special diets
- Are vegan (do not eat any animal products)
- Are 65 years of age or older
- Are pregnant or plan to soon become pregnant
- Have a known nutrient deficiency or insufficiency (you don't have or get enough of a certain nutrient)

Ask your doctor or dietitian for more information if you think you might need to take supplements.

Supplement makers are not required to have standards for the safety, content, and quality of their products. They do not have to prove that a supplement is safe or effective before it is sold. Just because a product is “natural” does not mean it is safe. The FDA only spot tests 1% of the 65,000 dietary supplements on the market.

Keep in mind the following precautions with dietary supplements:

- They may interact with medications, including chemotherapy and endocrine therapy.
- They may interact with each other.
- They may cause serious side effects.

It is important for your entire healthcare team to know about any supplements you are taking. This includes vitamins, minerals, herbs, botanicals and other supplements.

You may receive conflicting information from family, friends, health food stores, and the Internet about supplements. It can be hard to find reliable information. Your dietitian can help you sort through any advice you get.

To learn more about supplements, ask your nurse for the resource [\*Herbal Remedies and Cancer Treatment\*](#).

You can also visit the MSK Integrative Medicine Service website at: [www.mskcc.org/cancer-care/integrative-medicine](http://www.mskcc.org/cancer-care/integrative-medicine). Click on “About Herbs, Botanicals, and Other Products” for detailed information about different dietary supplements. There is also a free MSK iPhone app called “About Herbs” that you can download.

Other resources include the American Cancer Society ([www.cancer.org](http://www.cancer.org)) and the American Institute for Cancer Research ([www.aicr.org](http://www.aicr.org))

## **Organic food guidelines**

Many people choose to eat organic foods over conventional (not organic) foods. Organic plant foods are grown without the use of synthetic pesticides or herbicides. Organic animal foods are made from animals that have not been given growth hormones or any antibiotics, and have not been fed any animal by-products.

Foods labeled organic are made without bioengineering. That means that the genes in them cannot be changed, so they can't have genetically modified organisms (GMOs). Ionizing radiation, which is a process to sterilize food, cannot be used.

Before foods can be labeled “organic,” they must meet certain guidelines. The government must inspect the farm or facility where the food is grown or animals are raised.

The US Department of Agriculture (USDA) has 4 categories for labeling organic products.

- 100% organic: must contain only organic ingredients.
- Organic: must contain at least 95% organic ingredients.
- Made with organic ingredients: must contain at least 70% organic ingredients. Organic ingredients may be listed on the display panel. There are certain

restrictions on the other 30% of ingredients (e.g., they cannot contain GMOs). The USDA organic seal cannot be used on the package.

- Products that have fewer than 70% of organic ingredients cannot use the term “organic” on the front label. Organic ingredients may be listed on the ingredient list.

Placing labels on these food items is voluntary. You may also see the words “natural,” “free range,” or “hormone-free” on food labels. Do not confuse them with “organic.” Only foods with the USDA organic seal have been certified as meeting USDA standards.

An organization called The Environmental Working Group publishes lists of what they call the “Dirty Dozen Plus™” and “Clean 15™” fruits and vegetables. The Dirty Dozen have been found to contain the highest amounts of pesticides if they are grown conventionally (not organic). The Clean 15 are fruits and vegetables that have the least amounts of pesticides when grown conventionally.

<b>Dirty Dozen Plus™</b>	<b>Clean 15™ Plus</b>
1. Strawberries	1. Avocados
2. Apples	2. Sweet corn
3. Nectarines	3. Pineapple
4. Peaches	4. Cabbage
5. Celery	5. Sweet peas (frozen)
6. Grapes	6. Onions
7. Cherries	7. Asparagus
8. Spinach	8. Mangos
9. Tomatoes	9. Papaya
10. Sweet bell peppers	10. Kiwi
11. Cherry tomatoes	11. Eggplant
12. Cucumbers	12. Honeydew melons
13. Snap peas	13. Grapefruit
14. Blueberries	14. Cantaloupe
15. Potatoes	15. Cauliflower
16. Hot peppers	16. Mushrooms

17. Lettuces

18. Kale and collards

17. Sweet potatoes

18. Broccoli

**If you aren't able to get organic vegetables and fruits, it is still better to eat conventional ones than none at all.**

The Environmental Protection Agency (EPA) and FDA consider pesticides, herbicides, and growth hormones to be safe. The USDA makes no claims that organic food is safer or better than non-organic food. Organic foods usually cost more and are not always readily available. There is no research to show whether organic foods can reduce cancer risk. If you are concerned about your intake of added hormones from food, you may wish to choose animal products (e.g., chicken, eggs, meat, milk and dairy) that are labeled “organic” or “no added hormones.” For more information, speak with your dietitian.

## **Tobacco**

Tobacco increases the risk for:

- Lung cancer
- Heart disease
- Bladder, mouth, and throat cancers

If you smoke, try to quit. If you need help, please ask your doctor or nurse for a referral to the MSK Tobacco Cessation Program, or call 212-610-0507.

## **Eating Well During Your Breast Cancer Treatment**

Treatment for breast cancer may include surgery, chemotherapy, radiation therapy, immunotherapy, biologic therapy, other therapies, or a combination of these. Eating well during your breast cancer treatment can help you:

- Feel stronger
- Maintain energy
- Manage side effects
- Prevent or reduce undesired weight gain or weight loss



- Get the right nutrients
- Reduce risk for food-borne infections
- Avoid dehydration

## **During chemotherapy**

### **Food safety**

If you are being treated with chemotherapy, you are at an increased risk for getting an infection or foodborne illness (food poisoning). This is because the treatments can lower the number of white blood cells in your body. These cells fight bacteria (germs) and keep your immune system strong. Avoid foods that are not prepared, stored, or handled correctly. This can happen where you shop for food, eat out, or even at home.

Symptoms of food poisoning may include:

- Abdominal (belly) cramps
- Nausea
- Vomiting
- Diarrhea
- Fever

Food poisoning may go undiagnosed. This is because some side effects of cancer treatments may cause similar symptoms.

Follow the food safety guidelines below to help prevent food poisoning.

### **Shopping**

- Do not buy packages that are torn or leaking, or canned goods that have dents, bulges, or leaks.
- Choose fruits and vegetables that are not bruised.
- Do not buy foods past their expiration date.
- Pick up frozen and refrigerated items last when shopping so that they spend less time outside of the freezer or refrigerator.
- Only buy pasteurized dairy products. Avoid unpasteurized, soft cheeses, such as Brie, Camembert, fresh raw mozzarella, and some blue cheeses.

- Only buy refrigerated eggs.

## Storage

- Keep the refrigerator temperature between 33° F and 40° F.
- Set the freezer temperature to 0° F.
- Keep the temperature of your pantries and cupboards between 50° F and 70° F.
- Keep your pantries and cupboards clean, dry, dark, and cool.
- Cook or freeze fresh poultry, fish, and meat within 2 days.
- Do not leave perishable foods out for more than 2 hours.
- Avoid overloading your refrigerator. Cold air needs room to circulate.
- Do not keep leftovers for more than 2 to 3 days.
- Store fresh meat, fish, and poultry in separate plastic bags. Put them on the bottom shelf of the refrigerator so they don't leak on other foods.
- Keep hot foods at a minimum temperature of 140° F.
- Keep cold foods at a maximum temperature of 40° F.

## Thawing

- For slow, safe thawing, place frozen meat, poultry, and fish in the refrigerator.
- For faster, safe thawing, place frozen food in a plastic, leak-proof bag. Then, submerge it in cold tap water.
- If you are thawing meat or poultry in the microwave, be sure to use a microwave-safe container. Defrost on the "low" or "defrost" setting. Cook meat and poultry right after you thaw it in the microwave.
- Do not thaw frozen items by leaving them out on the counter. This allows bacteria to grow.

## Preparation

- Always wash your hands thoroughly in warm, soapy water for at least 15 to 20 seconds before preparing food.
- Use an antibacterial cleaning spray to clean surfaces or spills on appliances. Look for products that have bleach or ammonia and follow the instructions for

use. Rinse towels, sponges, and dishcloths in a bleach and water solution. Keep them dry when not in use.

- Thoroughly rinse fresh fruits and vegetables under running tap water before cutting or peeling them.
- Never use bleach or detergent to wash fresh fruits and vegetables.
- Use separate cutting boards, plates, trays, and utensils for cooked and uncooked meat, poultry, and fish.
- Never use the same cutting board or utensils to slice raw meat and vegetables.

## Cooking, serving, and eating

- Cook all meats and other animal products to the minimum internal temperatures shown in the table below. The juices should run clear and there should be no pink flesh visible.
- Avoid eating raw or undercooked seafood, meat, poultry, or eggs. This includes:
  - Sushi made from raw fish
  - Tuna tartare
  - Ceviche
  - Lox
  - Rare steaks, burgers, or other meats
  - Poached, over-easy, soft-boiled, or sunny-side up eggs
  - Some fresh or homemade Caesar salad dressings and mayonnaises
- When cooling hot foods, divide larger portions into smaller portions. Place them in shallow containers so that they cool faster.

<b>Food</b>	<b>Safe Minimum Internal Temperatures</b>
Eggs	Cook until yolk and white are firm
Egg dishes	160° F
Egg sauces	160° F
Whole bird	180° F
Poultry parts (breasts, thighs, and wings)	170° F
Ground poultry	165° F

Ground beef, veal, lamb, or pork	160° F
Pork or ham	160° F
Steaks and roasts	145° F
Seafood	145° F

## Managing body weight

During chemotherapy, some people gain weight and other people lose weight. It is best to maintain a healthy body weight, avoid weight gain from too much fat tissue, and preserve muscle mass during chemotherapy. For more information on avoiding weight gain and losing weight, see the section “Maintaining a healthy body weight.”

If you are losing too much weight as a result of your chemotherapy treatment, you may want to change your diet. You may not have as much of an appetite due to side effects of treatment, fatigue, anxiety, and depression. If you lose your appetite, follow the suggestions below:

- Choose your favorite foods.
- Eat small, frequent meals or snacks.
- Eat with supportive friends or family.
- Ask for help with food purchasing and preparation.
- Listen to music you enjoy while eating.
- Plan meals on a set schedule so you don't forget to eat.
- Try homemade smoothies with nutrient-rich ingredients.
- Don't force yourself to eat a large amount at one sitting but don't skip meals entirely.

Ask your nurse or dietitian for the resource [Eating Well During and After Your Cancer Treatment](#) which has more information about maintaining your weight during your cancer treatment.

## Staying hydrated

It is important to stay well hydrated during chemotherapy. Drink at least 8 glasses of water or other non-caloric or low-calorie beverages (i.e., seltzer, tea) each day. Not drinking enough liquids can cause lightheadedness, dizziness, nausea,

constipation, fatigue, and urinary tract infection.

Try to limit sweetened drinks, soft drinks (such as cola or ginger ale), and juices.

## Keeping up your energy

Fatigue is a common side effect during chemotherapy and may get worse over time. While there is no one food to prevent or reduce fatigue, following a balanced diet, getting regular exercise, and getting enough sleep can help. In addition, try these suggestions:

- Limit your intake of refined sugars, such as candy, baked goods, and regular soda. Too much refined sugar and sweets can cause fatigue due to sharp changes in blood sugar levels. They can also add too many calories to your diet.
- Try to choose small, regularly-spaced meals containing protein-rich foods at each. Good sources of dietary protein include nuts, nut butters, eggs, quinoa, beans and legumes, fish, plain yogurt, and lean poultry.
- It is fine to have 1 or 2 cups of coffee or other caffeinated drinks a day. Do not have caffeine to stay up late, or to replace healthful meals.
- If you feel sluggish during the day, try going for a short walk instead of eating, if you are not actually hungry.
- Limit or avoid alcoholic drinks.
- Stay hydrated.

## Managing side effects

You may experience different side effects during chemotherapy treatments. Side effects vary from one person to another. They also vary from one day to the next, even in the same person. The following table shows some possible side effects during different kinds of chemotherapy.

Side effect	What to try	What to avoid
<b>Nausea</b>	<ul style="list-style-type: none"><li>• Ginger tea</li><li>• Cool or cold foods, like breakfast cereal with milk or a raw vegetable sandwich</li><li>• Fresh or frozen fruit</li><li>• Small frequent meals</li><li>• Saltine-type crackers</li></ul>	<ul style="list-style-type: none"><li>• Strong food smells or other odors</li><li>• Large meals</li><li>• Greasy, creamy, oily, or fried foods</li></ul>

	<ul style="list-style-type: none"> <li>• Broth or other simple soups</li> <li>• Hard sucking candies</li> </ul>	
<b>Constipation</b>	<ul style="list-style-type: none"> <li>• Drinking water, at least 8 (8-ounces) glasses per day</li> <li>• Raw or cooked vegetables and fruits</li> <li>• Dried fruit such as prunes or apricots</li> <li>• Beans and legumes</li> <li>• Whole grain products such as bran cereal or oatmeal</li> <li>• Plain yogurt</li> <li>• Hot tea or coffee (limit to 1 to 2 cups if caffeinated)</li> </ul>	<ul style="list-style-type: none"> <li>• White bread products</li> <li>• White rice</li> <li>• Bananas</li> </ul>
<b>Diarrhea</b>	<ul style="list-style-type: none"> <li>• Plain nonfat yogurt</li> <li>• Bananas</li> <li>• White bread products, such as a plain roll</li> <li>• Plain white rice</li> <li>• Cooked or canned fruits, small portions</li> <li>• Weakly brewed tea and plain water</li> <li>• Lean cooked fish</li> <li>• Cooked eggs</li> </ul>	<ul style="list-style-type: none"> <li>• Fruit juice and highly sweetened drinks</li> <li>• Sugar-free candies</li> <li>• High-fiber cereals or breads</li> <li>• Large portions of raw vegetables and fruits</li> <li>• Coffee or caffeinated drinks</li> </ul>
<b>Vomiting</b>	<ul style="list-style-type: none"> <li>• After vomiting stops:</li> <li>• Drinks with electrolytes such as sports drinks</li> <li>• Ice pops</li> <li>• Broth</li> <li>• Very small portions of solid foods, as tolerated</li> </ul>	Any solid food, until you stop vomiting
<b>Mouth sores</b>	<ul style="list-style-type: none"> <li>• Drinking beverages through a straw</li> <li>• Cool, soft, smooth foods and drinks</li> <li>• Rinsing with salt water or commercial alcohol-free mouthwash</li> </ul>	<ul style="list-style-type: none"> <li>• Acidic foods and drinks, such as orange juice or tomato sauce</li> <li>• Very hot foods and drinks</li> <li>• Spicy foods</li> <li>• Rough-textured or very dry foods</li> <li>• Alcoholic beverages</li> <li>• Mouthwash with alcohol</li> </ul>
<b>Changes in taste or</b>	<ul style="list-style-type: none"> <li>• Adding lemon, orange, or cucumber slices to water</li> </ul>	<ul style="list-style-type: none"> <li>• Metal utensils</li> <li>• Any foods or beverages that</li> </ul>

<b>metallic taste</b>	<ul style="list-style-type: none"> <li>• Chewing mint-flavored gum</li> <li>• Cold or cool foods</li> <li>• Fresh fruit</li> <li>• Drinking beverages through a straw</li> </ul>	taste unappealing
<b>Heartburn</b>	<ul style="list-style-type: none"> <li>• Small meals</li> <li>• Chewing food thoroughly</li> <li>• Sips of liquids</li> <li>• Sitting upright for at least one hour after meals or snacks</li> <li>• Gently elevating the head of your bed with pillows or a wedge</li> </ul>	<ul style="list-style-type: none"> <li>• Acidic foods like orange juice, tomato sauce, or coffee</li> <li>• Large meals</li> <li>• Eating or drinking quickly</li> <li>• Carbonated drinks</li> <li>• Spicy foods</li> <li>• Alcoholic beverages</li> </ul>

## Dietary supplements

Do not take most vitamin, mineral, herbal, and other dietary supplements during chemotherapy, unless recommended by your doctor or dietitian. For most people, a balanced diet supplies the right amount of nutrients.

You may need to take a supplement of vitamin D (see the section “Managing Your Bone Health”) It is usually safe to take vitamin D during chemotherapy. Talk with your doctor or dietitian about whether you should take vitamin D and what amount.

Large doses of antioxidants may decrease the effects of some cancer treatments. This is one reason it is important to avoid most vitamin and other dietary supplements during chemotherapy and radiation therapy. You will not get too many vitamins or antioxidants from a diet rich in whole foods such as fruits and vegetables.

During chemotherapy and radiation therapy, limit green tea to no more than 16 ounces per day and juicing to no more than 8 ounces per day. Also, limit or avoid vitamin- or antioxidant-enhanced drinks such as Vitamin Water®.

For more information on dietary supplements, see the section “About supplements”.

## During hormone therapy

Hormone treatments include tamoxifen, leuprolide (Lupron®), and aromatase inhibitors such as anastrozole (Arimidex®), exemestane (Aromasin®), and letrozole (Femara®). These may be used for short or long periods of time. If you

are on this kind of treatment, review the following guidelines.

## **Medication-nutrient interactions**

Grapefruit and grapefruit juice interact with a number of medications. Avoid eating or drinking them if you are taking tamoxifen.

Certain dietary supplements interact with tamoxifen and other hormone treatments. Always check with your doctor or dietitian before starting any dietary supplements.

## **Managing body weight**

For some people, hormone therapies can make it harder to maintain a healthy body weight. See the section “Maintaining a Healthy Body Weight” for more information on weight management.

## **Diet and hot flashes**

Hot flashes are a problem for some women during menopause and for people getting treatment for breast cancer. Hot flashes vary from person to person. They may last for different periods of time. How often they come and go may also be different.

Research shows maintaining a healthy body weight or losing weight if you are overweight may help with hot flashes.

A stressful or warm environment can trigger a hot flash. Some foods and beverages can also trigger or worsen hot flashes. If you are experiencing hot flashes, avoid or limit the following:

- Caffeinated beverages
- Chocolate
- Alcohol
- Spicy foods
- Hot beverages

Many dietary supplements are marketed to help relieve hot flashes. They often contain potentially phytoestrogenic botanicals, such as red clover and black cohosh, or soy isoflavones. There is not enough evidence to show these supplements are effective in reducing hot flashes or safe for people who have or



have had breast cancer. It is best to avoid them.

## Managing Your Bone Health

Over time, all adults experience some degree of bone loss. However, some people have a condition called osteopenia, in which your bone mineral density is lower than normal. Having osteopenia can lead to osteoporosis, a disease in which your bones become weak and more likely to fracture (break).

Osteoporosis is often called a silent disease because there are usually no symptoms unless you have a fracture. The fractures usually occur in the spine, hip, ribs, and wrist. They can occur from doing normal, everyday activities.

Primary osteoporosis can be caused by the normal process of aging, menopause, or both. Secondary osteoporosis can develop as a side effect of cancer treatment. Taking aromatase inhibitors, a form of endocrine therapy, can increase bone loss and therefore increase the risk for osteoporosis and fracture.

To help keep your bones strong and reduce fracture risk:

- Eat calcium-rich foods.
- Get enough vitamin D.
- Do exercises that are weight-bearing, strengthening, and improve balance and flexibility.

## Calcium

Calcium is a mineral that your body needs to build and maintain your bones and teeth. If there is not enough calcium in your diet, your body takes calcium from your bones.

The recommended amount of calcium a person needs depends on age and sex.

Sex	Age (years)	Recommended daily intake (milligrams)
Female	19 to 50	1,000 mg
	Over 50	1,200 mg
Male	19 to 70	1,000 mg
	Over 70	1,200 mg

For people with osteoporosis, the recommended amount of calcium is 1,500 mg per day.

Dairy products are one good source of calcium. If you are lactose intolerant, you may want to try yogurt and lactose-free milk. Also, there are now many foods and drinks available that have calcium added to them. Add up how much calcium you are getting in your typical daily diet. This will help you know if you need to take a calcium supplement.

## Food sources of calcium

Food	Portion size	Calcium in portion (milligrams)	Calories in portion
<b>Dairy foods</b>			
Yogurt, plain, nonfat	1 cup (8 ounces)	265	150
Cheddar cheese	1½ ounces	307	171
Gruyere cheese	1½ ounces	430	176
Parmesan cheese	1½ ounces	503	167
Milk, low-fat	1 cup (8 ounces)	305	102
Milk, whole	1 cup (8 ounces)	276	149
<b>Non-dairy alternatives</b>			
Soy milk, plain, calcium-fortified	1 cup (8 ounces)	301	80
Rice milk, plain, calcium-fortified	1 cup (8 ounces)	283	113
Almond milk, vanilla, calcium-fortified	1 cup (8 ounces)	451	91
<b>Seafood</b>			
Sardines, canned in oil, with bones, drained	2 sardines	92	50
Salmon, sockeye, canned, drained	4 ounces	263	189
Ocean perch, Atlantic, cooked	4 ounces	39	109
Mussels, steamed	4 ounces	37	195

<b>Fruits and vegetables</b>			
Collards, cooked	1/2 cup	134	31
Turnip greens, cooked	1/2 cup	104	29
Kale, cooked	1/2 cup	47	18
Bok choy (Chinese cabbage), raw	1 cup	74	9
Brussels sprouts	1/2 cup	28	28
Figs, fresh	2 medium figs	35	74
<b>Nuts, beans, and soy</b>			
Almonds	1/4 cup	96	207
White beans, canned	1/2 cup	96	150
Edamame (soybeans), prepared	1/2 cup	49	95
Tofu, firm, prepared with calcium sulfate*	1/2 cup	253	88
<b>Other foods and beverages</b>			
Fortified, ready-to-eat cereals (various)**	3/4 cup to 1 cup	250-1,000	100-210
Orange juice, calcium fortified**	1 cup	500	117
Oatmeal, plain, instant, fortified**	1 packet prepared	98	101
Mineral water (e.g., San Pellegrino®, Perrier®)	1 cup (8 ounces)	33	0
Basil, dried	1 teaspoon	31	3

\*Calcium content is for tofu processed with a calcium salt. Tofu processed with other salts does not provide significant amounts of calcium.

\*\*Check food labels, as amount of calcium varies.

Source: USDA National Nutrient Database for Standard Reference

Available at: <http://ndb.nal.usda.gov>

## Taking a calcium supplement

It is best to get calcium from food. However, not everyone can get enough through food alone. Therefore, you may need a calcium supplement. You do not need a

prescription to buy a supplement. Your doctor, nurse, or dietitian can recommend the amount of calcium that is best for you.

There is no benefit to taking more than the recommended dose of calcium. If you are getting enough from foods, you do not have to take a supplement. Taking more than the recommended amount of calcium can have health risks.

Choose a brand-name supplement. Look for labels that say “purified” or have the USP (United States Pharmacopeia) symbol. This helps ensure the supplement meets certain standards for quality and purity.

Tips for taking calcium supplements:

- Check with your doctor before taking calcium supplements if you:
  - Take diuretics (water pills)
  - Take large amounts of antacids for indigestion
  - Have ever had kidney stones
  - Have had problems with your parathyroid glands
- Take your calcium in divided doses for the best absorption. Do not take more than 500 mg at a time.
  - Most calcium supplements are best absorbed when taken with food.  
Calcium citrate is a form that can be taken either with food or on its own.
- Take calcium supplement pills with a glass of water.
- Don't buy calcium tablets that are made from bone, coral, or dolomite. They may contain lead or other harmful metals.
- Calcium supplements can cause constipation. If you have this side effect, increase your liquid and fiber intake. If the constipation does not go away, call your doctor, nurse, or dietitian.
- Calcium supplements do not replace other treatments for osteoporosis. Even if you take a calcium supplement, you should also eat foods that are rich in calcium. You should also continue to do weight-bearing exercises, such as walking.

## Vitamin D

Vitamin D helps your body absorb calcium. It is important for maintaining strong

bones. Your body makes vitamin D after being exposed to the sun. Vitamin D is also found in some foods, such as fatty fish, cod liver oil, eggs, and fortified milk. However, it may be difficult to get enough vitamin D from sunlight and foods alone. Your doctor or dietitian may tell you to take vitamin D supplements. These can be prescription or over-the-counter vitamin D supplement pills, or calcium supplements with added vitamin D.

Some people have an increased risk for having low levels of vitamin D. They include:

- People who don't spend much time outside of the house.
- People who spend little time in the sun or regularly cover their body and face with sunblock.
- People who are overweight or obese.
- People with darker skin.
- People with certain medical conditions, such as celiac disease.
- Older adults.

Talk with your doctor, nurse, or dietitian about how much vitamin D you need. Ask if your blood levels of vitamin D should be checked.

## Being Physically Active

Regular physical activity is important for good health. Most studies suggest that 30 to 60 minutes per day of moderate- to high-intensity physical activity is associated with a reduction in breast cancer risk. Staying active can also:

- Help you achieve and maintain a healthy body weight.
- Improve heart health.
- Keep your bones strong.
- Help prevent falls.
- Build lean muscle mass and reduce fat tissue.
- Improve cognitive function, including memory, thought-processing, and speech.
- Reduce fatigue and increase energy.

- Reduce depression or anxiety.
- Prevent or relieve constipation.
- Improve joint pain.
- Reduce the risk for other types of cancer and many chronic health conditions and diseases.
- Improve overall health.

Researchers have found other benefits of exercise for people with cancer. If you are receiving chemotherapy, you may feel tired during the day. Exercise can help reduce fatigue and boost energy. Exercise may also help you get through your treatments on time and improve your self-esteem. It can strengthen your immune system, increase fitness, and help prevent weight gain.

Talk with your doctor before starting any exercise program or increasing your current exercise.

## **Adding exercise to your daily routine**

Find physical activities you enjoy. This will make it more likely that you will do them regularly. Remember that any small increases in activity will help. Set small goals and gradually work your way up.

Exercise can be broken up into 2 or 3 sessions. For instance, if you don't have 1 whole hour to exercise, try walking for 30 minutes twice a day. Try the following ideas to increase physical activity:

- Take the stairs instead of the elevator or escalator.
- Get off the subway or bus one or two stops early and walk the rest of the way.
- Go for a walk after dinner.
- Do some gentle stretches when you first get up in the morning.
- Bike, walk, or rollerblade to the store or to work instead of driving.
- Walk the dog several times a day instead of hiring a walker.
- Get up from your desk and take short walks around the office throughout the day.
- Instead of sending an email or calling a coworker, walk to his or her office.

- Park your car a distance away from your destination and walk the rest of the way.
- Plan active social activities with friends and family. For example, instead of meeting for lunch or coffee, go for a bike ride. Instead of watching a movie with your children, go to the park with them.
- When golfing, walk instead of using a cart.
- Walk or play Frisbee at the beach or in the park instead of lying down or sitting.
- After going out for dinner, go out dancing.
- Make walking or biking date nights with your spouse or partner.
- Clean your house or apartment.
- If it's raining or snowing outside, walk laps inside a mall.

The table below will help you determine how much exercise you need each week, depending on your goals.

Goal	Type and Amount of Exercise
To gain substantial health benefits (e.g., decreased risk for heart disease, stroke, depression, type 2 diabetes)	150 minutes (2½ hours) per week of moderate-intensity exercise (e.g., brisk walking, dancing), 75 minutes of vigorous exercise (e.g., running, rowing, uphill hiking), or an equal combination
For further health benefits (e.g., weight loss, weight maintenance, decreased risk for certain cancers)	More than 300 minutes (5 hours) per week of moderate-intensity exercise, 150 minutes (2½ hours) per week of vigorous exercise, or an equal combination

Sources: US Department of Health and Human Services, the American Cancer Society, and the American College of Sports Medicine.

Check the table below to see how many calories you can burn during 1 full hour of exercise. These are estimates for a 150-pound person. If you weigh less than 150 pounds, you will burn fewer calories. If you weigh more than 150 pounds, you will burn more calories.

Activity	Estimated Calories Used in 1 Hour (for 150-pound person)
Brisk walking	300

Relaxed walking	200
Jogging	675
Gardening	320
Playing with kids	215
Vacuuming or mopping	150
Biking (flat surface)	440
Yoga (moderate intensity)	360
Dancing	370
Golf	240
Swimming	600

## Physical activity log

Use a physical activity log to help you keep track of how much exercise you do each week. If you have any special health considerations or questions about designing an exercise program, talk with your doctor.

## Frequently Asked Questions

### What is the best anti-cancer diet?

There is no one type of diet that can prevent or cure cancer. However, a diet with a variety of whole plant foods, low added sugars, and the right number of calories for you is probably the best diet for overall health and disease risk reduction.

You may have heard of the Mediterranean Diet, which is associated with health benefits. The Mediterranean Diet includes many vegetables, beans, fruits, seafood, and healthy plant oils such as olive oil and nuts. It includes very little refined carbohydrates (such as white bread products), sugars, and meats.

Reaching and maintaining a healthy body weight is one of the best ways you can reduce your cancer risk. But even someone who follows a “perfect” diet can develop cancer or have the cancer recur (come back). Cancer involves many more factors than diet alone.

### What foods are good for a person with cancer?

The best foods for any given person depend on that person’s individual needs and tolerances. These vary widely from person to person.



For example, someone who is trying to lose weight might benefit from eating a variety of fresh raw vegetables and high-fiber grains. But if someone has diarrhea during chemotherapy or radiation therapy, those foods would not be the best choices. Speak with your (or your loved one's) dietitian to determine what foods might be good to eat and what might be good to limit or avoid.

## **Is it true that sugar feeds cancer?**

Although this sounds like a simple question, the answer is quite complex. The truth is, *all* of the cells in our bodies use a form of sugar (glucose) for growth and energy, so sugar feeds all cells, not just tumor cells.

Still, it is a good idea to limit sugars from foods and drinks, as well as limit total calories. Eating too much sugar – or too much of *any* food – contributes to extra body weight in the form of fat. We do know that overweight and obesity increase the risk for developing cancer.

Diets with too much sugar (and too many calories overall) can also lead to increased levels of insulin and other hormones that may contribute to tumor development. However, if you eat an overall healthy diet, having an occasional cookie will not in itself cause cancer growth.

For more information, see the Academy of Nutrition and Dietetics article about sugar and cancer at [www.oncologynutrition.org/erfc/healthy-nutrition-now/sugar-and-cancer/](http://www.oncologynutrition.org/erfc/healthy-nutrition-now/sugar-and-cancer/).

## **What is the relationship between red meat and cancer?**

Eating processed red meat, such as bacon, hot dogs, ham, and sausage, is associated with an increased risk for certain types of cancer. Research shows eating 50 grams a day of processed meat (about 2 slices of ham or bacon) increases colon cancer risk by 18%. However, you don't have to eliminate all meat from your diet. Keep portion sizes small and be sure to fill most of your plate, at most meals, with whole vegetables and other plant foods.

## **Are coffee or other drinks with caffeine okay to drink?**

It is fine for most people to drink moderate amounts of coffee or other caffeinated drinks such as black or green tea. In fact, research suggests that there are possible health benefits associated with drinking moderate amounts of coffee. Avoid or limited sweetened beverages with added caffeine ("energy" drinks) and don't drink alcoholic beverages with added caffeine. Also remember that some

coffee shop drinks have a lot of calories and sugar.

## **Which foods or supplements boost immune function?**

Research has not shown that any single food or oral dietary supplement can improve your immune function. Your immune system relies on many factors. However, a balanced diet can help make sure that your body is strong enough for treatment. Regular exercise can also help you have healthy immune function.

Other ways to support your body and immune system during treatment or any time include:

- Avoiding smoking or other tobacco use.
- Getting enough sleep.
- Maintaining a healthy body weight.
- Limiting alcohol intake.
- Managing stress.
- Managing blood pressure.
- Washing your hands appropriately.

During chemotherapy, make sure to follow food safety precautions, such as cooking meats thoroughly and avoiding unpasteurized foods. This will help your body when it is less able to fight off infections.

## **What is the best diet for weight loss? Are there any foods that speed metabolism?**

Research shows that limiting the amount of calories you eat is the best way to lose weight and keep it off. Weight loss and weight maintenance require a lifestyle change rather than a “diet”. Cutting out whole food groups such as fats or carbohydrates isn’t likely to be effective and is almost impossible to keep doing over time.

There are no foods that boost metabolism. However, by exercising, you can increase your lean muscle tissue. This will increase the rate at which your body burns calories. Exercise regularly to keep or increase lean muscle mass and decrease fat mass.

## **Sample Meal Plan**

Here is a 1-week sample meal plan. Each day's menu has about 1,600 calories. These plans are not right for every person. Individual needs and tastes vary, so you don't need to follow the plans exactly. However, they may give you ideas for healthy meals and snacks.

<b>Day 1</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	2 whole-grain frozen waffles topped with 1 cup of mixed berries (frozen or fresh)  1 cup of coffee or tea with 2 tablespoons of milk or milk replacement
Snack	2 tablespoons of whole, unsalted almonds
Lunch	Turkey sandwich made with: <ul style="list-style-type: none"> <li>• 1 whole-wheat pita</li> <li>• 1 slice Swiss cheese</li> <li>• 3 ounces of sliced turkey breast</li> <li>• Sliced fresh tomato</li> <li>• Sliced red onion</li> <li>• 1 teaspoon of mustard</li> </ul> 1 small square of dark chocolate
Dinner	4 ounces of baked flounder with fresh lemon and black pepper  $\frac{2}{3}$ cup cooked barley  1 cup of steamed string beans or broccoli  Small garden salad made with: <ul style="list-style-type: none"> <li>• 1 cup of mixed greens</li> <li>• <math>\frac{1}{2}</math> cup of other raw vegetables (such as mushrooms, carrots, cauliflower)</li> <li>• 1 tablespoon of olive oil vinaigrette salad dressing</li> </ul>
Snack	1 medium pear

<b>Day 2</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	$\frac{1}{2}$ of a whole-wheat or oat bran bagel with 1 tablespoon of peanut butter (or other

	nut butter, such as cashew, almond, or sunflower)
Snack	6 ounces of plain, nonfat yogurt or low-fat yogurt  2 large Brazil nuts
Lunch	Tricolor salad made with: <ul style="list-style-type: none"> <li>• 1 cup of arugula</li> <li>• ½ cup of radicchio</li> <li>• ½ cup of endive</li> <li>• 1 tablespoon of pine nuts</li> <li>• 1 tablespoon of raisins</li> <li>• 2 teaspoons of balsamic or other flavored vinegar</li> <li>• ½ cup of cooked pumpkin or squash topped with nutmeg, to taste</li> </ul>
Dinner	Pasta with chicken and artichoke. Toss together the following: <ul style="list-style-type: none"> <li>• 1 cup of cooked whole-wheat penne</li> <li>• 5 ounces of grilled skinless and boneless chicken breast, chopped</li> <li>• 2 teaspoons of olive oil mixed with 1 teaspoon of lemon juice</li> <li>• ½ cup of artichoke hearts (rinsed and drained, if canned)</li> <li>• ½ cup diced tomato</li> <li>• 2 tablespoons of chopped fresh parsley</li> </ul>
Snack	1 cup of watermelon

<b>Day 3</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	1 whole-wheat English muffin with 1 tablespoon of butter or butter replacement  ½ of a banana  1 hard-boiled egg  1 cup of coffee or tea with 2 tablespoons of milk or milk replacement
Lunch	8 to 10 ounces of vegetarian lentil soup  1 small whole-grain roll (about the size of a fist)
Snack	6 ounces of plain, nonfat yogurt or low-fat yogurt

	2 clementines or 1 small orange
Dinner	Seafood stir-fry made with: <ul style="list-style-type: none"> <li>• 5 ounces of sea bass</li> <li>• 2 teaspoons of peanut oil</li> <li>• 1 teaspoon of soy sauce</li> <li>• 1 tablespoon of unsalted peanuts</li> <li>• 1 cup of sliced zucchini and carrots</li> </ul> $\frac{2}{3}$ cup of cooked brown rice
Snack	$\frac{1}{2}$ cup of coconut sorbet  1 tablespoon of slivered almonds

<b>Day 4</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	1 cup of oat-bran or shredded-wheat type cold cereal with: <ul style="list-style-type: none"> <li>• <math>\frac{3}{4}</math> cup of non-fat or low-fat milk or milk replacement</li> <li>• <math>\frac{1}{2}</math> cup of fresh or frozen blueberries</li> </ul> 1 cup of coffee or tea with 2 tablespoons of milk or milk replacement
Snack	6 ounces of plain non-fat or low-fat yogurt with 1 teaspoon of honey
Lunch	Spicy seitan sandwich made with: <ul style="list-style-type: none"> <li>• 2 slices of whole-wheat bread</li> <li>• 4 ounces of prepared chicken-style seitan topped with ground cumin and black pepper, to taste</li> <li>• 2 large Romaine lettuce leaves</li> <li>• <math>\frac{1}{4}</math> of an avocado</li> </ul>
Dinner	Mixed veggie platter made with: <ul style="list-style-type: none"> <li>• <math>\frac{1}{2}</math> cup of steamed or sautéed mixed greens (e.g., spinach, kale, bok choy, collard greens)</li> <li>• <math>\frac{1}{2}</math> cup of roasted parsnips, turnips, or other root vegetable</li> <li>• <math>\frac{1}{4}</math> cup of chickpeas</li> <li>• 1 tablespoon of olive oil</li> <li>• 2 tablespoons of grated or shredded Parmesan, Pecorino, or other hard cheese</li> <li>• Black pepper, to taste</li> </ul>

<b>Day 5</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	Homemade smoothie made in the blender with the following: <ul style="list-style-type: none"> <li>• ½ cup of orange juice mixed with ¼ cup of water</li> <li>• ½ of a banana</li> <li>• 6 ounces of plain, nonfat yogurt or low-fat yogurt</li> <li>• 1 cup of whole frozen strawberries</li> </ul> 1 cup of coffee or tea with 2 tablespoons of milk or milk replacement
Lunch	Quinoa salad (can make ahead in a larger batch) made to include the following: <ul style="list-style-type: none"> <li>• ¾ cup of cooked quinoa</li> <li>• ½ cup of cubed, cooked butternut squash</li> <li>• ½ cup of cooked mustard greens or other spicy greens</li> <li>• ½ teaspoon of ground turmeric</li> <li>• 2 teaspoons of sunflower seeds</li> <li>• Black pepper, to taste</li> </ul>
Snack	2 tablespoons of hummus or white bean dip  ½ cup of chopped carrots  1 whole-wheat pita
Dinner	1 medium slice of plain cheese pizza (blot the top with a napkin or paper towel)  1 cup of steamed broccoli or cauliflower

<b>Day 6</b>	
<b>Meal</b>	<b>Food</b>
Breakfast	Vegetable egg scramble made with: <ul style="list-style-type: none"> <li>• 2 eggs (or vegan egg replacements)</li> <li>• ½ cup of broccoli or bell pepper</li> <li>• ½ cup of chopped tomatoes</li> <li>• 1 teaspoon of olive oil</li> </ul> 1 cup of coffee or tea with 2 tablespoons of milk or milk replacement
Snack	¾ cup of non-fat or low-fat cottage cheese with ½ cup of sliced melon

Lunch	<p>Peanut butter sandwich made with:</p> <ul style="list-style-type: none"> <li>• 2 slices of whole grain bread</li> <li>• 1 tablespoon of peanut butter (or other nut butter, such as cashew, almond, or sunflower)</li> <li>• 1/2 of a medium banana, sliced</li> <li>• 1 teaspoon of honey</li> </ul> <p>1 1/2 cups of sliced carrot, celery, or zucchini sticks</p>
Dinner	<p>Pasta with pesto tofu and vegetables made with:</p> <ul style="list-style-type: none"> <li>• 1/2 cup of cooked fusilli, orecchiette, or other pasta</li> <li>• 1/2 cup of crumbled tofu (firm or extra-firm) mixed with about 3 teaspoons of prepared pesto sauce</li> <li>• 1 cup of chopped zucchini, steamed or lightly boiled in pasta water</li> <li>• 1/2 cup of spinach, steamed or lightly boiled in pasta water</li> <li>• Chopped fresh basil</li> </ul>
Snack	1 apple

Day 7	
Meal	Food
Breakfast	<p>1/2 cup of cooked oatmeal made with:</p> <ul style="list-style-type: none"> <li>• 1/2 cup of non-fat milk or milk replacement</li> <li>• 1 teaspoon of cinnamon</li> <li>• 1/4 cup of dried cranberries</li> </ul> <p>1 cup of coffee or tea with 2 tablespoons of milk or milk replacement</p>
Snack	1 navel orange
Lunch	<p>4 ounces of grilled salmon</p> <p>1 cup of mixed greens with balsamic vinegar</p> <p>1/2 cup of edamame</p>
Dinner	<p>Homemade nachos made with:</p> <ul style="list-style-type: none"> <li>• 20 tortilla chips</li> <li>• 1 ounce of shredded Monterey Jack cheese</li> <li>• 2/3 cup of black beans, rinsed and drained</li> </ul>

	<p>Bake in oven at 350° F until the cheese is just melted</p> <p>Serve with</p> <ul style="list-style-type: none"> <li>• 1/2 cup of salsa</li> <li>• 1 cup of lettuce</li> <li>• 1/2 cup of sliced jicama</li> <li>• 1/2 cup of sliced tomato or cherry tomatoes</li> </ul>
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- 1 tablespoon of chopped fresh cilantro

## Sample Food Diary

Time/place	Type of food/beverage	Amount	Activities during meal
Thursday, 8:00 AM	Coffee with half-and-half	16 oz with 3 tablespoons	
	Whole wheat bagel with peanut butter	1/2 bagel with 2 tablespoons	
	Orange	1 medium	
Noon	Fruit and nut bar (almond coconut)	1	
2:00 PM	Salad bowl	2 cups lettuce, 1/2 cup kidney beans, 1/4 cup guacamole, 1/2 cup diced tomatoes, 1/2 cup brown rice, 1 tablespoon sour cream	Finished 1 liter bottle of water started this morning
			Went to gym after work, 30 minutes on elliptical and 30 minutes stretch class
8:00 PM			Finished 1/2 liter bottle water started after lunch
8:30 PM	Mussels with garlic white wine sauce	2 cups with shells	
	French bread with butter	2 small slices with 2 teaspoons butter	
	White wine spritzer	3 oz wine and 3 oz seltzer	



	Water	1 glass	
Friday, 8:00 AM	Coffee with half-and-half	12 oz coffee with 2 tablespoons half- and-half	
	Oatmeal and blueberries	½ cup cooked with water and ¼ cup	
	Hard boiled egg	1	
10:00 AM	Plain yogurt	6 oz	
	Pistachios	2 tablespoons, unshelled	
12:30 PM	Red lentil soup	6 oz, made with olive oil, garlic, onion	
	Raw carrots	½ cup chopped, raw	
	Golden delicious apple	1 medium	Finished 1 liter bottle water started this morning
5:00 PM	Popcorn with salt	1 cup	
	Water	12 oz	
6:30 PM	Penne pasta	1 cup cooked with ½ cup tomato sauce, ½ cup sauteed broccoli, ¼ cup sauteed spinach	
	Chocolate cupcake with chocolate frosting	½ large	
	Water	8 oz	
8:00 PM	Mint tea	12 oz	

## MSK Support Services

### Evelyn H. Lauder Breast Center

300 East 66<sup>th</sup> Street (at Second Avenue) New York, NY 10065

[www.mskcc.org/cancer-care/outpatient/evelyn-h-lauder-breast](http://www.mskcc.org/cancer-care/outpatient/evelyn-h-lauder-breast)

The following services are offered at the Evelyn H. Lauder Breast Center

- Breast medicine and surgery consultation
- Diagnostic imaging

- Chemotherapy
- Social work services
- Psychiatry services
- Nutrition services
- Occupational therapy
- Special surveillance breast program
- Survivorship program
- Genetic counseling
- Art therapy

To make an appointment with a dietitian, please call 646-888-4880.

### **Integrative Medicine Service**

646-888-0800

[www.mskcc.org/cancer-care/integrative-medicine](http://www.mskcc.org/cancer-care/integrative-medicine)

The Integrative Medicine Service offers complementary therapies to cancer care. These include touch therapy, mind-body therapy, acupuncture, creative therapy, and nutrition counseling, as well as exercise programs to improve strength and promote relaxation. Their services are available to anyone receiving cancer care, whether at MSK or elsewhere, as well as to the general public.

## **External Resources**

### **Academy of Nutrition and Dietetics**

[www.eatright.org](http://www.eatright.org)

Has information about the latest nutrition guidelines and research and can help you find a dietitian in your area. The academy also publishes *The Complete Food and Nutrition Guide*, which has over 600 pages of food, nutrition, and health information.

### **American Cancer Society**

800-227-2345

[www.cancer.org](http://www.cancer.org)

Has information on diet and other cancer-related topics.

### **American Council on Exercise (ACE)**

888-825-3636

[www.acefitness.org](http://www.acefitness.org)

Has information on variety of health and fitness topics and can provide you with names of certified fitness professionals in your area.

### **American Heart Association**

800-242-8721

[www.heart.org/HEARTORG](http://www.heart.org/HEARTORG)

Has information on healthy eating and general exercise guidelines. They also publish several heart-healthy cookbooks that can be found in most bookstores.

### **American Institute for Cancer Research**

800-843-8114

[www.aicr.org](http://www.aicr.org)

Has information on diet and cancer prevention research and education.

### **BreastCancer.org**

[www.breastcancer.org](http://www.breastcancer.org)

Has information on breast cancer treatment, diagnosis, day-to-day concerns, and lowering your risk.

### **National Cancer Institute (NCI)**

800-4-CANCER

[www.cancer.gov](http://www.cancer.gov)

Has information about cancer, including summaries of treatment guidelines, research news, clinical trial listings, links to medical literature, and more.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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