



PATIENT & CAREGIVER EDUCATION

# Nutrition and Prostate Cancer: Making Healthy Diet Decisions

This information explains nutritional guidelines to follow a healthy diet and lower your risk of prostate cancer.

You can read the entire resource or just the sections that apply to you. If you have any questions, talk with your dietitian or healthcare provider.

## Lifestyle and Prostate Cancer Risk

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

Keys to overall good health include:

- Achieving and maintaining a healthy body weight
- Eating a balanced, mostly plant-based diet
- Limiting red meat and avoiding processed meat
- Exercising regularly

## 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 type 2 diabetes, heart disease, and certain types of cancer. These include cancer of the esophagus, pancreas, colon, rectum, kidney, gallbladder, and prostate. Being overweight or obese can lead to advanced prostate cancer.

### Find your body mass index (BMI)

BMI is a measurement of the amount of fat in your body based on your height and weight. It can help you learn if your weight is healthy or not. A healthy BMI for an adult is between 18.5 and 24.9.

BMI	Weight category
18.4 or lower	Underweight
18.5 to 24.9	Normal
25 to 29.9	Overweight
30 or higher	Obese

You can calculate your BMI using the tool on this website:

[www.nhlbi.nih.gov/health/educational/lose\\_wt/BMI/bmicalc.htm](http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm). You can also find your BMI on the BMI table below. To use the table:

1. Find your height in the left-hand column.
2. Once you find your height, look across that same row to find your weight.
3. Once you find your weight, look at the corresponding BMI at the top of the column. This is your BMI.

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

For example, if you're 5 feet, 5 inches tall and you weigh 168 pounds, then your BMI is 28. This means you're considered overweight. Your goal should be to achieve a BMI that puts you in the normal range.

If your BMI is above 25, look for the weights that correlate with a healthy BMI for your height. That should be your target weight.

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 (belly) area. Extra weight in the abdominal area is associated with an increased risk for certain illnesses, even in people with a normal BMI.

## Find out your caloric needs

Your caloric need is the number of calories your body needs. It depends on:

- Your age
- Your muscle mass (how much muscle you have)
- The amount and type of exercise you do
- Your overall health

An adult female generally needs 1600 to 2200 calories per day. An adult male generally needs 2200 to 2800 calories per day. In general, if you're older or less active, you need fewer calories. If you have a lot of muscle or are very active, you need more calories.

Finding out how many calories your body needs can help you gain or lose weight. There are 3,500 calories in 1 pound of body weight.

Your body weight in pounds x 12 = your estimated daily caloric need

If you need to lose weight, subtract 500 calories from your estimated daily caloric need. If you need to gain weight, add 500 calories to your estimated daily caloric need.

For example, if you weigh 200 pounds:

- 200 pounds x 12 = 2,400 calories (your estimated daily need)
- For weight loss: 2,400 calories - 500 calories = 1,900 calories per day
- For weight gain: 2,400 calories + 500 calories = 2,900 calories per day

If you need to lose weight, or just want more information on a balanced diet, you can also visit the United States Department of Agriculture (USDA) website at [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov). You can enter your height, weight, age, and activity level, and a healthy meal plan will be created for you. You may also schedule an appointment with an outpatient dietitian for diet counseling.

## Manage your portion sizes

It's 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	¼ bagel
	Cereal (hot)	½ cup
	Cereal (cold)	1 ounce (½ cup to 1 cup, depending on cereal)
	Pasta	½ cup
	Rice	½ cup
	Vegetables	Cooked or raw, chopped
Juice		¼ cup
Raw, leafy		1 cup
Fruits	Chopped, cooked, or canned (unsweetened)	½ cup
	Dried	¼ cup
	Juice	¾ cup
	Fresh	1 medium fruit
Milk, yogurt, and cheese	Milk or yogurt	1 cup
	Natural cheeses (mozzarella, Swiss, muenster, cheddar, provolone, Gouda)	1 ½ ounces
Lean meat, poultry, fish, beans, eggs, and nuts	Cooked beans	½ cup
	Cooked meat or fish	3 ounces
	Eggs	1
	Nuts	⅓ cup
	Peanut butter	2 tablespoons

You can also use the following examples of everyday items to help determine your portion sizes (see Figure 1).



3 ounces of meat  
is about the size of a  
deck of cards.



3 ounces of fish is  
about the size of  
a checkbook.



1 cup of cut fruit,  
cut vegetables, or  
cereal is about the size  
of a baseball.



A medium size bagel  
is about the size of  
a hockey puck.



1 ounce of cheese  
is about the size of  
a domino.



1 teaspoon of butter  
is about the size of  
a die.

Figure 1. Example portion sizes

## Understand food labels

Reading and understanding food labels can help you make smart food choices. In the United States, food labels are being updated so they will give more information and be easier to read. Changes include:

- Listing the amount of added sugars in a serving.
- Listing the amount of vitamin D and potassium in a serving.
- Making the calories and serving size larger and bolder so they're easier to read.
- Updating the serving size to reflect amounts that people actually eat.
- Updating the percentage of daily value for nutrients such as sodium, fiber and vitamin D 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			
<b>Amount Per Serving</b>			
<b>Calories</b> 230	Calories from Fat 72		
<b>% Daily Value*</b>			
<b>Total Fat</b> 8g	<b>12%</b>		
Saturated Fat 1g	5%		
<i>Trans Fat</i> 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>
<b>Amount per serving</b>	
<b>Calories</b>	<b>230</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 3g	5%
<i>Trans Fat</i> 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 serving of macaroni and cheese. The arrows point to the boxes on the right, which explain what each line means.

<b>Nutrition Facts</b>	
8 servings per container	
<b>Serving size</b>	<b>2/3 cup (55g)</b>
<b>Amount per serving</b>	
<b>Calories</b>	<b>230</b>
<b>% Daily Value*</b>	
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 3g	<b>5%</b>
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>3%</b>
<b>Total Carbohydrate</b> 21g	<b>13%</b>
Dietary Fiber 4g	<b>14%</b>
Total Sugars 12g	
Includes 10g Added Sugars	<b>14%</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.

- Servings per container can sometimes be deceiving. Packages that look like single servings can often be 2 or 3.
- The % Daily Value is a guide to the amount of nutrients in 1 serving of food. For example, the label lists 20% for calcium. This means 1 serving provides 20% of the calcium you need each day. The % Daily Values are based on a diet of 2,000 calories per day for healthy adults.
- The type of fat in your food is important. Choose products with 3 grams of fat or less per serving and choose products with the least amount of saturated or trans fats.
- More fiber, vitamins, and minerals are better (up to 100% of the Daily Value). Select foods that contain at least 25% of 1 or more of these categories.
- Grams and % Daily Value are now required for added sugars. Less sugar is better. Save foods or beverages with more than 15 grams of sugar per serving for special occasions. Limit added sugars which are found in soft drinks, fruit drinks, snacks and sweets.
- Actual amounts of vitamin D (in micrograms: 1 mcg = 40 IU), calcium, iron, and potassium are now listed, in addition to % Daily Value.

Figure 3. How to read food labels

This food label shows that macaroni and cheese is high in total fat and saturated fat. Due to its high fat content, this food wouldn't be considered a healthy choice.

### Get active

Physical activity and exercise are a necessary part of a healthy lifestyle. By doing at least 30 minutes of moderate exercise most days of the week, you can stay fit. You can burn about 150 calories a day (about 1,000 calories a week) by doing moderate exercise.

- To stay at your current weight, do at least 60 minutes of moderate to vigorous activity on most days of the week.
- If you need to lose weight, do at least 60 to 90 minutes of moderate to vigorous activity each day.

Moderate exercise is when your breathing gets faster but you aren't out of breath (for example, you can have a conversation but can't sing) and you develop a sweat after 10 minutes. Vigorous activity is when your breathing is fast, you can't say more than a few words without stopping for a break, and you start to sweat in a few minutes.

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 (feeling more tired or weak than usual) and increase energy
- Reduce depression or anxiety (strong feelings of worry or fear)
- Prevent or relieve constipation (having fewer bowel movements than usual)
- Improve joint pain
- Reduce the risk for other types of cancer and many chronic health conditions and diseases
- Improve overall health

There are other benefits of exercise for people with cancer. If you're receiving chemotherapy, you may feel tired during the day. Exercise can help reduce fatigue and boost energy. 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 exercises 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 example, if you don't have 1 whole hour to exercise, try walking for 30 minutes twice a day. Try the following ideas for exercise:

- Take the stairs instead of the elevator.
- Get off the bus or subway 1 stop early and walk the rest of the way.
- Walk to work, class, or the store or walk your pets.
- Take a 2-mile brisk walk in 30 minutes.
- Increase your time spent on household tasks, such as vacuuming, mopping, dusting, and washing dishes (45 to 60 minutes).



- Take “activity breaks” at work.
- Swim laps for 20 minutes.
- Take a 4-mile bike ride in 15 minutes.
- Play volleyball for 45 minutes.
- Play basketball for 15 to 20 minutes.
- Dance for 30 minutes.
- Rake leaves or do other yard work for 30 minutes.

## Guidelines for Healthy Eating

### 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 4. This can help you choose your serving sizes of different foods.

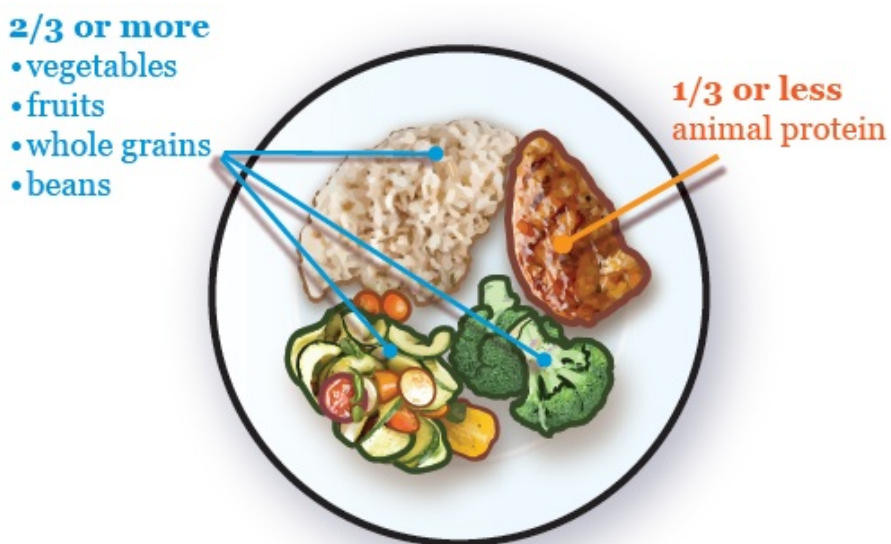


Figure 4. Balancing your plate

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 (such as spinach, lettuce, kale, collards, and bok choy)
- Mushrooms

- Asparagus
- Zucchini
- Peppers
- Tomatoes

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

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

## **Monitor the fat 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're 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.

Your fat intake should be about 20% to 35% of your calories. This is about 40 to 70 grams of fat per day for a 1,800 calorie diet.

The type of fat you eat can be as important as the amount.

## Types of cholesterol

Cholesterol is a fat-like substance. It's found only in foods that come from an animal source, such as meat, eggs, and dairy. Cholesterol travels in the blood in packages called lipoproteins. There are 2 types of lipoproteins: "good" and "bad."

- Low-density lipoprotein (LDL) is "bad" cholesterol. It can clog your arteries and cause heart disease.
- High-density lipoprotein (HDL) is "good" cholesterol. It takes cholesterol out of your body.

## Types of fats

Limiting the amount of saturated fat you eat can keep your heart healthy and make it easier to maintain your weight. Choose mostly monounsaturated fats. These fats are described below.

**Monounsaturated fats** come from plant sources. They are mostly found in:

- Olives
- Olive oil
- Canola oil
- Peanuts, peanut oil
- Almonds, hazelnuts, pecans
- Avocados

These fats can lower your total cholesterol and LDL levels. They will not affect your HDL level.

**Polyunsaturated fats** also come from plant sources. They are found in:

- Corn oil
- Safflower oil
- Sunflower oil
- Soybean oil
- Hemp oil
- Grape seed oil

These fats can lower both your total cholesterol and LDL levels.

**Saturated fats** are found in:

- Meat and chicken fat
- Whole milk and milk products
- Butter
- Lard
- Coconut, palm, and palm kernel oils

Eating foods with too much saturated fat can raise your total cholesterol and LDL levels.

**Omega-3 fatty acids** are needed for good health, especially for heart health. They are found mainly in oily fish. It's recommended that you eat at least 2 (4-ounce) servings of omega-3 rich fish per week. Fish that have omega-3 fatty acids include:

- Salmon
- Tuna
- Mackerel

Foods that contain smaller amounts of omega-3 fatty acids include:

- Leafy green vegetables
- Walnuts
- Soybeans
- Flax seeds

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

Stay away from saturated fats found in butter, animal fat, palm and coconut oil, and trans fats in stick margarine, fried foods, and baked goods. Note that any food that has “partially hydrogenated” oil in the ingredients list has trans fat.

## **Choose mostly mono and polyunsaturated fats**

Nutrition guidelines recommend that most of your fat intake come from mono and polyunsaturated fat sources. They are found mostly in plant foods and fish and other seafood.

## **Tips for Trimming Fat from Your Diet**

Reducing the amount of animal fat in your diet may decrease prostate cancer risk. Here are some ways you can trim the fat off your diet:

- Read food labels. Notice the amount of fat your food has in it but also pay attention to the serving size. Eating 2 servings of a food doubles the amount of calories and fat you take in.
- Limit spreads that are high in fat. These include:
  - Butter
  - Margarine
  - Cream cheese
  - Mayonnaise
  - Certain salad dressings. Try lemon juice or balsamic vinegar and herbs on salads instead of high-fat bottled dressings.
- Choose lean cuts of meat, such as skinless chicken or turkey and fish.
- Eat no more than 18 ounces of red meat per week and avoid processed meats like hot dogs, sausage, bacon, and cold cuts.
- Have more non-meat meals like tofu, lentils, or bean chili.
- Remove the fat and skin from your meat before cooking it.
- Avoid deep-fried foods. Prepare foods by baking, broiling, steaming, or pan-frying with non-stick cooking spray instead
- Add more flavor to your foods with herbs and spices instead of butter, oil, or gravies.
- Use fruit or fruit juices in your marinades. Try kiwi, papaya, lemon, or lime juice.
- Use vegetable stock or low-sodium tomato juice instead of butter or oil to cook your vegetables, meats, and seafood.
- Refrigerate your soups and skim off the fat layer that forms on top.
- Make scrambled eggs or omelets by using 1 yolk with 2 egg whites. You can also use an egg substitute product.
- Choose canned tuna or sardines that are packed in water rather than oil. Otherwise, drain oil-packed canned tuna or sardines to decrease the fat.
- Cook with canola or olive oil. These oils have the least amount of saturated fat.
- Choose skim, fat-free, or low fat milk, yogurt, and cheeses instead of the full fat versions.
- Include nuts and avocado in your diet as they contain healthy monounsaturated oils, but only in small amounts because they are also high in fat and calories.
- Have sorbets, fruit ices, low fat ice cream, or frozen yogurt instead of regular ice cream.
- Top baked potatoes, chicken, or fish with salsa, fat-free dressing, or plain low-fat yogurt.

## Include fiber in your diet

Fiber is an important part of your diet because it:

- Helps regulate bowel movements (poop) and prevent constipation.
- Provides a feeling of fullness.
- Helps with weight loss.
- Can help reduce cholesterol.
- Can lower the risk for diabetes, heart disease, and obesity.

### Sources of fiber

Plant foods are the best sources of fiber. In addition to fruits and vegetables, eating a variety of whole grains, cereals, legumes (such as beans, peas, and lentils), nuts, and seeds can provide the fiber you need.

Read your food labels carefully to find out if the foods you choose have whole grains. Food labels must have the word “whole” right before the name of the grain. For example, when choosing a wheat bread or pasta, the label must read “whole wheat,” not “enriched wheat flour.”

Here are some tips to get more fiber and whole grains in your diet:

- Eat foods such as whole-wheat bread, brown rice, barley, whole oats, oatmeal, bran cereals, and popcorn.
- Try pancakes, muffins, or bread mixes made with whole-wheat or buckwheat flour.
- Choose a whole grain like barley and add a small amount of dried fruit or toasted nuts.
- Add beans to rice, pasta, salad, and soups.
- Choose fresh fruits and vegetables instead of juices.

Slowly increase how much fiber you eat and drink at least 8 (8-ounce glasses) of liquids each day.

For more information on how to include fiber in your diet, read *Food Sources of Fiber* ([www.mskcc.org/pe/food\\_sources\\_fiber](http://www.mskcc.org/pe/food_sources_fiber)).

### Limit salt and sodium

Eating foods with a lot of salt may raise your blood pressure and increase your risk for stroke, heart failure, and kidney disease. Eat less than 2,300 milligrams (mg) of sodium (about 1 teaspoon of salt) per day. Fresh food that isn't 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:

- Don't add salt to food at the table.
- Pay attention to the ingredients. Sometimes the name of a food can be misleading. Lemon pepper, spice rubs, and adobo may contain large amounts of salt or other sources of salt, such as MSG (monosodium glutamate).
- When cooking, flavor foods with fresh herbs and spices instead of salt.
- Limit canned foods.
- Limit packaged, processed, pickled, and cured foods.
- Be aware that both fast food and regular restaurant food can contain large amounts of salt.

## **Include calcium and vitamin D in your diet**

You need calcium in your diet every day to keep your bones and teeth strong and your muscles and nerves healthy. When you're not getting enough calcium from your diet, your body takes calcium from your bones. This can make your bones weak and brittle and cause a disease called osteoporosis. Osteoporosis puts you at greater risk for bone fractures.

Here are tips for getting more calcium in your diet:

- Have at least 2 to 3 servings of skim or low-fat dairy every day. Include milk, yogurt, or cheese. If you have trouble eating lactose (a sugar found in milk products), try lactose-free products, such as Lactaid® milk or soy products.
- Almonds, leafy greens, soybeans, canned sardines, and salmon are also good sources of calcium.
- Foods such as cereals and orange juice usually have added calcium.
- Many people, including women during menopause, need calcium supplements. Speak with your doctor or a dietitian to find out more about your calcium needs.

Your body needs vitamin D so it can absorb the calcium in your diet. Vitamin D is found in dairy products and some fatty fishes. Your body can also make vitamin D from sunlight. Most people get all the vitamin D they need from sunlight. But, if you don't spend much time outside or if you usually keep your skin covered (such as for religious reasons), you may need to take a vitamin D supplement.

## **Daily recommended intake**

The table below lists the daily amount of calcium and vitamin D you need per day based on your age.

<b>Age</b>	<b>Calcium (mg)</b>	<b>Vitamin D (IU)</b>
0 to 6 months	200 mg	400 IU
7 to 12 months	260 mg	400 IU
1 to 3 years	700 mg	600 IU
4 to 8 years	1,000 mg	600 IU
9 to 18 years	1,300 mg	600 IU
19 to 50 years	1,000 mg	600 IU
51 to 70 years	1,200 mg for women and 1,000 for men	600 IU
70 years and older	1,200 mg	800 IU

IU=International Units

Most of your bone mass is made during childhood and early adulthood. But, you're never too old to improve your bone health. To do this, eat foods that are rich in calcium and vitamin D and take part in daily weight-bearing activities, such as walking, jogging, lifting weights, or jumping rope. All of these things can help make your bones stronger.

## **Reduce your alcohol intake**

Research has shown a link between how much alcohol you drink and your risk for cancer of the esophagus, mouth, and head and neck, and cirrhosis of the liver. It's also high in calories. If you drink, do so in moderation.

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 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.

If you have any questions about alcohol, talk with your doctor, nurse, or dietitian.



## Sample meal plan

Here are some sample menus to help you use healthy foods in your diet. These menus aren't right for every person. Individual needs and tastes vary, so you don't need to follow the menus exactly. However, they may give you ideas for healthy meals and snacks.

Meal	Sample Menu #1	Sample Menu #2	Sample Menu #3
<b>Breakfast</b>	<ul style="list-style-type: none"> <li>• 1 cup of bran flakes with 2 tablespoons of raisins</li> <li>• ½ cup of skim milk</li> <li>• 1 sliced banana</li> <li>• Coffee or tea with skim milk</li> </ul>	<ul style="list-style-type: none"> <li>• 8 ounces of low-fat vanilla or fruit yogurt</li> <li>• 1 cup of cooked whole oats with 2 teaspoons of mixed cinnamon and sugar</li> <li>• ½ cup of fresh or canned fruit (in its own juice)</li> <li>• Coffee or tea with skim milk</li> </ul>	<ul style="list-style-type: none"> <li>• Vegetable frittata (1 egg, 2 egg whites, and 1 cup of julienned vegetables)</li> <li>• 1 cup of cantaloupe cubes</li> <li>• Coffee or tea with skim milk</li> </ul>
<b>Lunch</b>	<ul style="list-style-type: none"> <li>• Tuna salad (4 ounces of tuna packed in water and 1 tablespoon of low-fat mayonnaise)</li> <li>• 1 slice of multigrain bread</li> <li>• ½ cup of cold bean (canned, drained, and rinsed) and carrot salad</li> <li>• 1 cup of grapes</li> <li>• 16 ounces of sparkling water with a fresh lemon wedge</li> </ul>	<ul style="list-style-type: none"> <li>• Turkey sandwich (3 ounces of roasted turkey breast on 2 slices of whole-grain bread, 1 tablespoon of low-fat mayonnaise or mustard, ¼ of a sliced avocado, lettuce, and tomato)</li> <li>• 1 medium apple</li> <li>• 8 ounces of chocolate skim milk</li> </ul>	<ul style="list-style-type: none"> <li>• 1 ½ cups of black bean and corn soup*</li> <li>• Whole-grain roll with 1 slice of low-sodium cheese</li> <li>• 1 cup of mixed-greens salad</li> <li>• Salad dressing: 1 tablespoon of olive oil and 1 tablespoon of balsamic vinegar</li> </ul>
<b>Snack</b>	<ul style="list-style-type: none"> <li>• 15 almonds</li> <li>• 1 orange</li> </ul>	<ul style="list-style-type: none"> <li>• 2 cups of air-popped popcorn (no added butter)</li> </ul>	<ul style="list-style-type: none"> <li>• ½ cup of 1% cottage cheese</li> <li>• ½ cup of fresh fruit</li> </ul>
<b>Dinner</b>	<ul style="list-style-type: none"> <li>• 4 ounces of whole-wheat pasta</li> <li>• ½ cup of tomato sauce with no added salt</li> <li>• 1 tablespoon of</li> </ul>	<ul style="list-style-type: none"> <li>• 2 cups of vegetarian chili</li> <li>• 2 slices of whole-wheat bread or 1 medium whole-wheat dinner roll</li> <li>• 1 cup of mixed-greens salad</li> <li>• Salad dressing: 1 tablespoon of olive oil and 1 tablespoon of balsamic vinegar</li> </ul>	<ul style="list-style-type: none"> <li>• 6 ounces of broiled salmon</li> <li>• 1 cup of spinach and mushrooms sautéed in 2 tablespoons of</li> </ul>

	<ul style="list-style-type: none"> <li>grated Parmesan cheese</li> <li>• 4 ounces of grilled chicken breast</li> <li>• 6 steamed asparagus spears</li> <li>• 1 cup of mixed greens with tomato, red onion, and 4 black olives</li> <li>• 2 tablespoons of low-fat dressing</li> </ul>	<ul style="list-style-type: none"> <li>• 2 slices of watermelon</li> </ul>	<ul style="list-style-type: none"> <li>oil and garlic</li> <li>• 1 sweet potato, sliced and roasted in the oven</li> <li>• 1 cup of cooked mushrooms</li> <li>• 1 cup of brown rice</li> </ul>
<b>Snack</b>	<ul style="list-style-type: none"> <li>• 1 fresh pear topped with 1 crumbled graham cracker and 2 tablespoons of low-fat yogurt</li> </ul>	<ul style="list-style-type: none"> <li>• ½ cup of fruit sorbet topped with 1 cup of fresh or frozen strawberries or raspberries</li> </ul>	<ul style="list-style-type: none"> <li>• 1 cup of sugar-free cocoa made with skim milk</li> <li>• 1 baked apple topped with cinnamon</li> </ul>
<b>Nutritional Content</b>	<ul style="list-style-type: none"> <li>• 1,780 calories</li> <li>• 58 g fat</li> <li>• 10 g polyunsaturated fat</li> <li>• 12 g saturated fat</li> <li>• 30 g monounsaturated fat</li> <li>• 211 mg cholesterol</li> <li>• 37 g fiber</li> <li>• 933 mg calcium</li> <li>• 1,800 mg sodium</li> <li>• 3,370 mg potassium</li> </ul>	<ul style="list-style-type: none"> <li>• 1,800 calories</li> <li>• 28 g fat</li> <li>• 5 g polyunsaturated fat</li> <li>• 8 g saturated fat</li> <li>• 9 g monounsaturated fat</li> <li>• 81 mg cholesterol</li> <li>• 47 g fiber</li> <li>• 1,300 mg calcium</li> <li>• 1,600 mg sodium</li> <li>• 4,200 mg potassium</li> </ul>	<ul style="list-style-type: none"> <li>• 1,700 calories</li> <li>• 47 g fat</li> <li>• 6 g polyunsaturated fat</li> <li>• 13 g saturated fat</li> <li>• 20 g monounsaturated fat</li> <li>• 320 mg cholesterol</li> <li>• 44 g fiber</li> <li>• 1,050 mg calcium</li> <li>• 2,300 mg sodium</li> <li>• 3,300 mg potassium</li> </ul>

### \*Recipe for Black Bean and Corn Soup

- 28-ounce can of low-sodium crushed tomato and basil
- 8 ounces of low-sodium tomato juice
- 16-ounce can of rinsed black beans
- 16-ounce can of rinsed white beans

- 16-ounce can of rinsed kidney beans
- 16-ounce can of sweet corn
- 1 teaspoon of dry oregano
- ½ teaspoon of rosemary
- ½ teaspoon cracked red pepper flakes (optional)

Mix ingredients in a large pot and bring to a boil. Turn down heat and let simmer for 10 minutes. Serves 4.

## Nutritional Supplements

The following nutrients are being studied for possible effects on prostate cancer. Vitamin, mineral, and herbal supplements may interfere with certain treatments for prostate cancer. Always check with your healthcare provider before taking any nutritional supplements.

For more information about herbs and minerals, visit: [www.aboutherbbs.com](http://www.aboutherbbs.com).

### Multivitamin/mineral supplements

- Multivitamins with high levels of selenium, vitamins C and E, and beta-carotene, may interfere with chemotherapy and radiation therapy.
- Eat whole fruits and vegetables to ensure you're getting all the vitamins you need without interfering with your treatment. Fruits and vegetables also contain phytochemicals (compounds found in plants that have a beneficial effect on your health) and fiber not found in a vitamin pills.

### Carotenoids

- Carotenoids are what give certain fruits and vegetables their colors. Two common carotenoid types are lycopene (found in tomatoes, guava, pineapple, and watermelon) and beta-carotene (found in dark green leafy vegetables, and yellow/orange vegetables like carrots and sweet potatoes).
- Studies suggests that lycopene from foods may reduce prostate cancer risk.
- Beta-carotene rich foods and supplements are unlikely to have any significant effects on the risk of prostate cancer.
- Avoid taking beta-carotene supplements and juicing foods rich in it. It's safe to eat foods with beta-carotene.

## Flaxseed

- Flaxseed has been shown to help reduce the growth and spread of prostate cancer and a good source of omega-3 fatty acids and fiber.
- Whole flaxseeds don't get absorbed by your body so make sure your flaxseeds are ground in order to get their health benefits.
- Flaxseed oil doesn't have the same benefits as ground flaxseeds.

## Folate

- It's important to take the right amount of folate. A study found that taking folic acid supplements can more than double your risk of developing prostate cancer.
- Adding just the right amount of folate (400 micrograms) in your diet can slightly lower your risk for prostate cancer.
- Eat a balanced diet with folate-rich foods such as fortified breakfast cereals and grain products, liver, legumes, dark green leafy vegetables, asparagus, avocado, and nuts.

## Green Tea

- Green tea is unlikely to reduce the risk of prostate cancer but it continues to be researched.

## Selenium and vitamin E

Selenium and vitamin E are antioxidants studied in the Selenium and Vitamin E Cancer Prevention Trial (SELECT) for their possible role in prostate cancer prevention.

- The study found that selenium and vitamin E supplements, taken either alone or together, didn't prevent prostate cancer. People taking vitamin E alone actually had a small increase in their risk of developing prostate cancer.
- We don't recommend taking selenium or vitamin E supplements. Get your selenium and vitamin E intake by eating foods such as seafood, whole grains, vegetable oil, margarine, nuts, seeds, eggs, whole grain breads, and cereals.

## Soy

- Soy products make a good heart-healthy addition to your diet as a replacement for foods that are high in animal proteins and saturated fat.
- Soy food sources should be eaten in moderation. You can get your daily dose of soy through foods like tofu, soy milk, soybeans (edamame), soy nuts, soy nut butter, miso (soy paste), and soy burgers.

- Soy supplements and soy bars aren't recommended because they don't have the same nutrients as found in whole foods. Soy bars are high in calories, sugar, and fats.

## Zinc

- Zinc is needed for normal cell functioning, nerve signaling, and for the body to protect itself against infection or disease.
- Studies have shown that taking more than 100 mg of zinc daily may increase your risk for prostate cancer, increase your LDL levels, decrease HDL levels, and slow down your immune system.
- Don't take zinc supplements. Instead get your zinc from foods like meat, fish, poultry, beans, and whole grains.

## Nutrition Concerns During Treatment

Prostate cancer treatments come with their own set of dietary guidelines and recommendations. This section explains some of the recommendations for different treatment options. For more information, ask your doctor, nurse, or dietitian for the resource *Eating Well During and After Your Cancer Treatment* ([www.mskcc.org/pe/eating\\_cancer\\_treatment](http://www.mskcc.org/pe/eating_cancer_treatment)).

### Brachytherapy

During brachytherapy (radioactive seeds inserted into the prostate), there are no dietary restrictions. You may continue with your regular diet.

### External beam radiation therapy

Diarrhea (loose or watery bowel movements) is a common side effect during some forms of radiation therapy to the prostate. Your doctor will let you know if you should follow a low fiber diet.

### Androgen deprivation therapy/hormonal therapy

The hormone testosterone allows prostate cancer cells to grow. In androgen deprivation therapy, testosterone is blocked through medications such as leuprolide (Lupron®). Another way of reducing testosterone levels is through orchiectomy (removal of the testicle). A possible side effect of hormonal therapy is weight gain. Following the healthy diet guidelines in this resource, watching portion sizes, and exercising, if possible, can help you maintain a healthy weight.

Testosterone also helps keep your bones strong so lower levels of testosterone may lead to increased risk of osteoporosis and broken bones. Protect your bones by including calcium in your daily diet.

## Chemotherapy

Side effects of chemotherapy can include loss of appetite, nausea (feeling like th, vomiting, and mouth sores, so you may have difficulty eating. During this time, try to eat small, frequent, soft, and bland meals. Dietary supplements such as Ensure® or milkshakes between meals may help increase your calorie intake.

If you have any questions or concerns about your diet or use of supplements, speak with your doctor, nurse, dietitian, or nutritionist. To find a dietitian or nutritionist that is right for you and your treatment, call 212-639-7071 to make an appointment.

## Memorial Sloan Kettering (MSK) Resources

Integrative Medicine Service: About Herbs

646-888-08800

[www.aboutherbs.com](http://www.aboutherbs.com)

Has information of different herbs, botanicals, and other products.

## External Resources

### American Cancer Society

800-227-2345

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

Has information on diet and other cancer-related topics.

### Academy of Nutrition and Dietetics

800-877-1600

[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 Institute for Cancer Research

800-843-8114

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

Has information on diet and cancer prevention research and education. They also published the AICR CUP (Continuous Update Project) Report on Diet, Nutrition, Physical Activity, and Prostate Cancer in 2018.

### Cancer Care

800-813-4673

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

Has information and resources for people living with cancer, including support groups and education.

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

800-4-CANCER (800-422-6237)

[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.

### **National Institutes of Health Office of Dietary Supplements**

301-4352920

[ods.od.nih.gov](http://ods.od.nih.gov)

Has up-to-date information on dietary supplements.

### **Prostate Cancer Foundation**

800-757-2873

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

Has information about prostate cancer, including symptoms, treatment options, and their side effects.

### **USDA My Plate Guidelines**

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

### **USDA National Agricultural Library**

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

## **Contact Information for Nutrition Services at MSK**

### **Department of Food and Nutrition in New York, NY**

212-639-7071

### **Radiation Oncology Outpatient Nutrition in New York, NY**

212-639-7622

### **Outpatient Nutrition in Commack, NY**

631-623-4000

### **Outpatient Nutrition in Rockville Centre, NY**

516-256-3651

### **Outpatient Nutrition in Basking Ridge, NJ**

908-542-3000

## Outpatient Nutrition in Westchester, NY

914-367-7000

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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