

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

Introduction

Daily we are faced with information from the media on the “newest” or “latest” study to prevent cancer or “reduce our risk of getting cancer.” We are encouraged to get a certain screening test or eat certain foods to prevent cancer. These studies can get confusing. It is important to remember that no one study provides the last word on any subject, and single news reports may put too much emphasis on what appear to be contradictory or conflicting results. In brief news stories, reporters cannot always put new research findings in their proper context. They may not even be aware that the “new” study they are reporting conflicts findings from the same or a similar study reported in the previous month.

There is no “magic” test or pill we can take to absolutely prevent cancer. But, there are simple things we can do that will help to decrease our risk factors for getting cancer. A risk factor is anything that affects your chance of getting a disease, such as cancer, heart disease, diabetes, etc.

Cancer develops when there is damage to the genes that control cell growth. This damage to genes can occur different ways:

1. We may inherit a damaged gene from one or both of our parents.
2. A gene may become damaged from a variety of things that we experience throughout our lifetime.

We can't control what we inherit from our parents, but we can do things for ourselves that can help protect our cells from being damaged. For the great majority of people who do not use tobacco, controlling their weight, watching what they eat, and performing some type of physical activity are the most important things they can do to modify or decrease their cancer risk. Behaviors such as avoiding exposure to tobacco products, maintaining a healthy weight, staying physically active throughout life, and consuming a healthy diet can substantially reduce one's lifetime risk of developing cancer.⁵⁻⁸ These same behaviors are also associated with decreased risk of developing cardiovascular disease.

The American cancer Society created guidelines on nutrition and physical activity that may reduce a person's risk of developing cancer. A summary of these guidelines, along with common questions, many people have about diet and exercise and its relationship to cancer are below.

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

Nutrition and Physical Activity Guidelines for Reducing Your Risk of Developing Cancer (American Cancer Society Recommendations)

A. Maintain a healthy weight throughout life.

- Balance calorie intake with physical activity.
- Avoid excessive weight gain throughout life.
- Achieve and maintain a healthy weight if currently overweight or obese.



1. Does being overweight increase cancer risk?

- Yes. Being overweight or obese is linked with an increased risk of cancers of the breast (among women after menopause), colon, endometrium, esophagus, kidney, and possibly other sites as well.

2. If I lose weight, can I lower my cancer risk?

- There is limited information from research studies showing the benefits of weight loss and decreasing cancer risk. However, some studies do show that weight loss may decrease the risk of breast cancer.
- Because of other proven health benefits, people who are overweight are encouraged to lose weight.
- Avoiding excessive weight gains as an adult combined with physical activity is important to not only decrease your cancer risk but also to possibly decrease the risk of other chronic diseases like heart disease or diabetes.
- Physical activity is a key factor in reaching or staying at a healthy body weight and your risk is lowered whether or not the activity affects your weight.

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

B. Adopt a Physically Active Lifestyle

- **Adults:** Engage in at least 30 minutes of moderate to vigorous physical activity, above usual activities, on 5 or more days of the week; 45 to 60 minutes of intentional physical activity are preferable.
- **Children and adolescents:** Engage in at least 60 minutes per day of moderate to vigorous physical activity at least 5 days per week.

1. Will increasing physical activity really lower my cancer risk?

- Yes. People who engage in moderate to vigorous levels of physical activity are at a lower risk of developing colon and breast cancer than those who do not.
- **Adults:** Engage in at least 30 minutes of moderate to vigorous physical activity, above usual activities, on 5 or more days of the week; 45 to 60 minutes of intentional physical activity are preferable.
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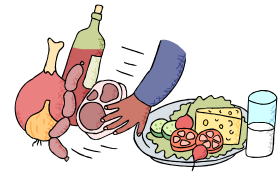
2. What is the difference between moderate and vigorous levels of physical activity?

- Moderate – Intensity Physical Activity – requires a moderate amount of effort and noticeably increases the heart rate. See chart for examples.
- Vigorous – Intensity Physical Activity – requires a large amount of effort and causes rapid breathing and an increase in heart rate

Moderate – Intensity Physical Activity	Vigorous – Intensity Physical Activity
Dancing	Running
Gardening	Walking/ Climbing Briskly Up a Hill
Housework and domestic chores	Fast Cycling
Traditional hunting and gathering	Aerobics
Active involvement in games and sports with children, walking pets	Competitive sports and games (e.g. Traditional games, football, volleyball, Hockey, Basketball)
General building tasks (roofing, thatching, painting),	Heavy Shoveling or digging or digging ditches
Carrying/moving moderate loads (≤ 20 pounds).	Carrying/moving heavy loads (≥ 20 pounds).

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

C. Eat a healthy diet, with an emphasis on plant sources



- Choose foods and drinks in amounts that help achieve and maintain a healthy weight.
 - Eat 5 or more servings of a variety of vegetables and fruits each day.
 - Choose whole grains over processed (refined) grains.
 - Limit intake of processed and red meats.
1. Maintain a healthy weight

Will eating less fat lower my cancer risk?

- There is little evidence that the total amount of fat a person eats affects cancer risk.
- But diets high in fat tend to be high in calories and may contribute to obesity, which in turn is linked with an increased risk of several types of cancer.
- Some studies have shown that that certain types of fats, such as saturated fats, may increase cancer risk.
- Other studies have shown that other types of fat (omega-3 fatty acids, found mainly in fish), monounsaturated fatty acids (found in olive and canola oils), or other polyunsaturated fats reduce cancer risk.



2. Eat a variety of fruits and vegetables



Vegetables (including legumes) and fruits are complex foods, each containing many numerous potentially beneficial vitamins, minerals, fiber, and other substances. Eating a variety of fruits and vegetables is associated with decreased risk of lung, esophageal, stomach, and colorectal cancer.

Is there a difference in nutritional values among fresh, frozen, and canned vegetables and fruits?

- Yes, but they can all be good choices.

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

- Fresh foods are usually thought to have the most nutritional value. But frozen foods can often be more nutritious than fresh foods because they are often picked ripe and quickly frozen (whereas fresh foods may lose some of their nutrients in the time between harvesting and eating).
- Canning is more likely to reduce the heat-sensitive and water-soluble nutrients because of the high heat that must be used. Be aware that some fruits are packed in heavy syrup, and some canned vegetables are high in sodium (salt).
- Choose vegetables and fruits in a variety of forms, and pay attention to the label information.

Does cooking affect the nutritional value of vegetables?

- Boiling vegetables, especially for long periods, can leach out their content of water-soluble (B and C) vitamins.
- Microwaving and steaming are the best ways to preserve these nutrients in vegetables.

Do certain vitamins found in fruits and vegetables lower cancer risk?

- Yes, current evidence suggest that getting vitamins from eating vegetables, fruits, and enriched grain products can lower cancer risk.
- However, taking high doses of vitamins and minerals (in pill form) does not have the same benefit and may, in some instances, cause harm.

Vitamin/Mineral	Research Study Results	Foods Found In
Vitamin A <ul style="list-style-type: none"> • Helps in the growth and repair of body tissue • Found in animal food sources as retinol • Also made from beta-carotene in plant-based foods. 	<ul style="list-style-type: none"> • Alcohol, coffee, or excessive iron can deplete the body's supply Vitamin A • Vitamin A supplements, whether in the form of beta-carotene or retinol, have not been shown to lower cancer risk, • High-dose supplements may increase the risk for lung cancer in current and former smokers 	liver carrots spinach dried apricots egg yolks sweet potatoes mangoes cantaloupe milk
Vitamin C <ul style="list-style-type: none"> • Helps protect cells from free radical 	<ul style="list-style-type: none"> • Many studies have linked intake of <u>foods</u> rich in vitamin C to a reduced risk for cancer. 	oranges bell peppers parsley grapefruits strawberries lemon juice

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

<p>damage</p> <ul style="list-style-type: none"> Improves iron absorption 	<ul style="list-style-type: none"> No study data is present that shows Vitamin C supplements (pill form) have decreased the 	<p>papaya cauliflower kale mustard greens Brussel sprouts</p>
<p>Vitamin D</p> <ul style="list-style-type: none"> Keeps bones and teeth strong and healthy Regulate cell growth and activity Reduces inflammation 	<ul style="list-style-type: none"> May have helpful effects on some types of cancer, including cancers of the colon, prostate, and breast. More research is needed to define the best levels of intake and blood levels of vitamin D for cancer risk reduction, 	<p>Obtained through skin exposure to ultraviolet (UV) radiation. Milk Dairy products (eggs, cheese) Vitamin D fortified cereals Salmon Sardines Shrimp Cod</p>
<p>Vitamin E</p> <ul style="list-style-type: none"> Protects skin from ultraviolet light Prevents cell damage from free radicals Allows cells to talk to each other 	<p>Current studies have not proven a link with taking Vitamin E and preventing cancer.</p>	<p>Mustard greens, chard, sunflower seeds, turnip greens, spinach, and olives</p>
<p>Calcium</p> <ul style="list-style-type: none"> Maintains healthy, strong bones Supports proper functioning of nerves and muscles 	<ul style="list-style-type: none"> Several studies have suggested that foods high in calcium might help reduce the risk for colorectal cancer, Taking calcium supplements slightly decreases the formation of colorectal adenomas (polyps). But there is also evidence that a high calcium intake, mainly through supplements, is linked with increased risk for prostate cancer, especially for prostate cancers that are more aggressive. 	<p>Dairy products People who get much of their calcium from dairy products should select low-fat or non-fat choices to reduce their intake of saturated fat</p> <p>Leafy green vegetables, spinach, turnip greens, mustard greens, and collard greens</p>
<ul style="list-style-type: none"> Folate B vitamin found in many vegetables, beans, fruits, whole grains, and fortified breakfast cereals. 	<p>Too little foliate may increase the risk of cancers of the colon, rectum, and breast, especially in people who drink alcoholic beverages.</p>	<p>Romaine lettuce, spinach, asparagus, turnip greens, mustard greens, calf's liver, parsley, collard greens, broccoli, cauliflower, beets, and lentils</p>

KNOW YOUR STATUS REDUCING YOUR CANCER RISK



3. Choose whole grains over processed (refined) grains

Grains such as wheat, rice, oats, and barley, and the foods made from them, are an important part of an overall healthful diet. Whole grain foods, which are those made from the entire grain seed, are relatively low in caloric density and can contribute to maintaining energy balance. In addition, whole grains are higher in fiber, certain vitamins, and minerals than processed (refined) flour products. Some of these vitamins and minerals have been associated with lower risk of cancer.

What is dietary fiber, and can it prevent cancer?

- Dietary fiber includes a wide variety of plant carbohydrates that humans cannot digest. Specific categories of fiber are "soluble" (like oat bran) or "insoluble" (like wheat bran and cellulose). Soluble fiber helps to reduce blood cholesterol, which lowers the risk of coronary heart disease.
- The link between fiber and cancer risk is weak, but eating these foods (beans, vegetables, whole grains, and fruits) is still recommended. These foods contain other nutrients that may help reduce cancer risk and have other health benefits.



4. Limit red meat and other processed foods

Should I avoid processed meats?

- Some studies have shown that eating large amounts of processed meats with increased risk of colorectal and stomach cancers. This may or may not be due to nitrites, which are added to many luncheon meats, hams, and hot dogs to maintain color and to prevent contamination with bacteria.
- Consumption of processed meats and meats preserved by methods involving smoke or salt increases exposure to potentially cancer causing chemicals, and should be minimized.

How does cooking meat affect cancer risk?

- Adequate cooking is necessary to kill harmful bacteria in meat.
- Some research suggests that frying, broiling, or grilling meats at very high temperatures creates chemicals that might increase cancer risk.

The guidelines were developed by the American Cancer Society 2006 Nutrition and Physical Activity Guidelines Advisory Committee and approved by the American Cancer Society National Board of Directors on May 19, 2006.

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

- Techniques such as braising, steaming, poaching, stewing, and microwaving meats decrease the production of these chemicals.

5. Do certain foods or chemicals added to foods increase or decrease cancer?



Bioengineered foods

- These are foods are made by adding genes from other plants or organisms to make a plant more resistant to pests and slow spoilage.
- Some genes improve flavor, add nutrients to the food, or make the food easier to transport.
- No study has shown that the substances found in bioengineered foods now on the market are harmful or that they would either increase or decrease cancer risk because of the added genes.

Irradiated foods

- Radiation is used more often to kill harmful organisms on foods in order to extend their "shelf life."
- Radiation does not stay in the foods after treatment, and eating irradiated foods does not appear to increase cancer risk.

Organic foods

- The term *organic* is popularly used to designate plant foods grown without pesticides and genetic modifications.
- At this time, no research exists to show organic foods decrease cancer risk than similar foods grown by other farming method

Soy Products

- Soy derived foods are an excellent source of protein and a good alternative to meat.
- Soy contains several phytochemicals, (plant made) some of which have weak estrogen activity and appear to protect against hormone-dependent cancers in animal studies.
- At this time there is little data showing that soy supplements can help reduce cancer risk.
- High doses of soy could possibly increase the risk of estrogen-responsive cancers, such as breast or endometrial cancer. Women with breast cancer should take in only moderate amounts of soy foods as part of a healthy,

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

plant-based diet. They should not ingest very high levels of soy in their diet or take concentrated sources of soy such as soy-containing pills or powders, or supplements containing high amounts of isoflavones.



Vegetarian diets

- Vegetarian diets include many healthful features. They tend to be low in saturated fats and high in fiber, vitamins, and phytochemicals.
- It is not possible to conclude at this time, however, that a vegetarian diet has any special benefits for the prevention of cancer.
- Diets including lean meats in small to moderate amounts can also be healthful.
- Strict vegetarian diets that avoid all animal products, including milk and eggs, should be supplemented with vitamin B12, zinc, and iron (especially for children and women after menopause).

Food additives

- Many substances are added to foods to preserve them and to enhance color, flavor, and texture.
- New additives must be cleared by the Food and Drug Administration (FDA) before entering the food supply. Rigorous testing in animals to look for any effects on cancer is done as part of this process.
- Additives are usually present in very small quantities in food, and no convincing evidence has shown that any additive at these levels causes human cancers.



Pesticides and herbicides

- Pesticides and herbicides can be toxic when used improperly in industrial, agricultural, or other occupational settings.
- Although vegetables and fruits sometimes contain low levels of these chemicals, overwhelming scientific evidence supports the overall health benefits and cancer-protective effects of eating vegetables and fruits.

KNOW YOUR STATUS REDUCING YOUR CANCER RISK

- At present there is no evidence that residues of pesticides and herbicides at the low doses found in foods increase the risk of cancer, but fruits and vegetables should be washed thoroughly before eating.

D. If you drink alcoholic beverages, limit your intake.

- Drink no more than 1 drink per day for women or 2 per day for men.
- Alcohol raises the risk of cancers of the mouth, pharynx (throat), larynx (voice box), esophagus, liver, and breast, and probably of the colon and rectum.
- The combination of alcohol and tobacco increases the risk of some cancers far more than the effect of either drinking or smoking alone
- People who drink alcohol should limit their intake to no more than 2 drinks per day for men and 1 drink per day for women.
- A drink is defined as 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of 80-proof distilled spirits.

