

Your Nutrition Connection



This publication provides information on the plant-based diet and its link to health, including breast cancer risk

The Plant-Based Diet and Breast Cancer Risk

What is the plant-based diet?

A “plant-based diet” puts more emphasis on eating plant foods such as vegetables and fruits, whole-grains and legumes (beans) and less emphasis on eating animal foods. Plant foods that are low in calories, high in nutrients and dietary fibre should fill 2/3 or more of your plate while animal foods, such as cheese, meat, fish, poultry and eggs should make up the rest. The plant-based diet is *not* a vegetarian or weight loss diet; it follows Canada’s Food Guide.

Why eat a plant-based diet?

Research shows that eating mostly plant foods, such as a variety of colourful vegetables, fruit, whole grains and legumes (dried peas, beans and lentils) daily may lower your risk of cancer and other chronic diseases like heart disease, diabetes and obesity, and promote your overall health.

Experts say that people who want to reduce their overall cancer risk should adopt a plant-based diet. In 2007, the World Cancer Research Fund and the American Institute for Cancer Research released a report titled “Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective.” This report reflects the findings of thousands of studies that looked at links between food, nutrition, physical activity and cancer risk. The report identified eight recommendations on how people can reduce cancer risk. Six of the recommendations focused on foods. Adopting a plant-based diet is one of these recommendations.

What’s the link between the plant-based diet and breast cancer risk?

There is no direct link between reduced *breast* cancer risk and the plant-based diet; however, there is a strong link between eating a plant-based diet and lower *overall* cancer risk. Eating a diet rich in vegetables, fruits, whole grains and legumes will provide you with fibre, vitamins, minerals

and phytochemicals that may help protect against cancer. Phytochemicals are natural substances that give plants their unique colours, tastes and properties. For example, antioxidants such as vitamins C and E and beta-carotene, which are abundant in many plant-based foods, may protect our cells from damage by cancer-causing agents. Other phytochemicals, such as indoles, isoflavones and polyphenols, may also protect against cancer. Plant-based foods are naturally low in calories and high in fibre (which helps you feel full). Achieving and maintaining a healthy body weight is strongly linked to lower cancer risk and eating a mostly plant-based diet can help you do this.

What does this mean?

Eating a plant-based diet will nourish your body with cancer protective substances and may assist in achieving or maintaining a healthy weight.

**WCRF/AICR RECOMMENDATIONS FOR CANCER PREVENTION
FOR THE GENERAL POPULATION (2007)**

1. Maintain a healthy body weight (Body Mass Index within the normal range).
2. Enjoy moderate physical activity for at least 30 minutes every day.
3. Avoid sugary drinks. Eat foods that are high in calories and fat and low in fibre *less often*.
4. Eat mostly plant foods (vegetables, fruits, whole grains and legumes, such as beans).
5. Limit intake of red meats (pork, beef and lamb) and avoid processed meats.
6. If consumed, limit daily alcoholic intake to 2 drinks for men and 1 drink for women.
7. Limit intake of salt; do not eat mouldy grain or legumes.
8. Meet your nutrient needs through diet, rather than supplements.

What are the plant-based diet recommendations?

1. Eat mostly plant foods.
2. Eat 5 or more servings of a variety of colourful non-starchy vegetables and fruits every day.
3. Balance starchy vegetables, roots or tubers with non-starchy vegetables, fruits and legumes.
4. Eat a variety of whole grains and/or legumes with every meal.
5. Limit refined starchy foods.



Chickpea and Cherry Tomato Salad

1. Eat mostly plant foods

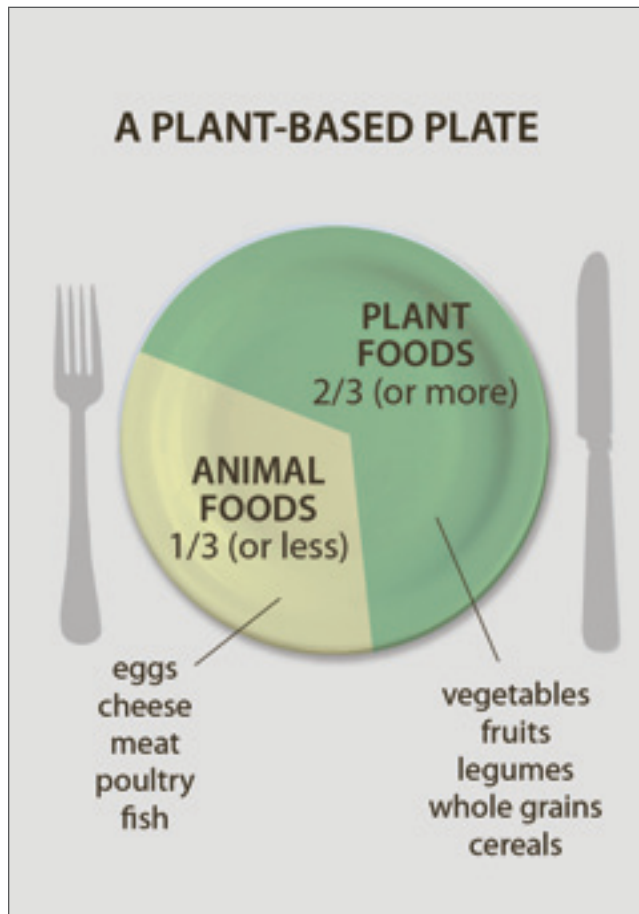
- Eat a wide variety of plant foods prepared in a healthy way every day. Vegetables, fruits, whole grains and legumes should fill 2/3 or more of your plate.
- Select more unprocessed grains, non-starchy vegetables and fruits and legumes.

2. Eat 5 servings or more of a variety of non-starchy vegetables and fruits daily

Non-starchy vegetables, fruits, roots and tubers include: apples, berries, cantaloupe, oranges, pears, beets, bok choy, broccoli, carrots, eggplant (aubergine), garlic, green leafy vegetables, Jerusalem artichoke, Swiss chard, parsnips, parsley, okra, turnip, rutabaga and more.



NON-STARCHY



STARCHY

Starchy vegetables, roots and tubers include: cassava, corn, plantain, potato, sweet potato, taro, yam, yucca and more.

What is a serving of vegetables or fruits?

A serving is a recommended portion size as per Canada's Food Guide. Women aged 19-50 and 51+ should be consuming 7-8 servings of vegetables and fruits each day. Eating the recommended servings of vegetables and fruits daily is easier than you think!

- Chopped vegetables or fruit (e.g. carrots, broccoli, strawberries, cantaloupe) = ½ cup or 125ml
- Leafy vegetables (e.g. romaine lettuce, spinach, arugula) = 1 cup or 250ml
- Fresh fruit (e.g. apple, pear, orange) = 1 medium-sized
- Dried fruit (e.g. apricots, cherries, cranberries) = ¼ cup or 60ml

Easy ways to add more colourful vegetables and fruits to your meals!

- Sprinkle fresh, frozen or dried fruits (blueberries, strawberries) on your cereal.
- Add frozen or fresh berries to your favourite smoothie.
- Top your salad with fresh (pears, strawberries) or dried (cranberries, cherries) fruit.



Boston Lettuce and Pear Salad—add fresh and/or dried fruit to your salads

- Add dried apricots or cherries and chopped vegetables to your couscous, brown rice or quinoa. Add red peppers, mushrooms or spinach to your omelette or scrambled eggs.
- Have a salad for lunch or as part of your evening meal.
- Add grilled roasted red peppers, avocado slices or spinach to your wraps.
- Add green onions and fresh dill to spice up your egg salad sandwich.
- Use fruit or vegetable puree, such as pureed beets, zucchini or applesauce to replace oil or margarine when baking.
- Increase the amount and type of vegetables to your stir-fries* or casseroles.
- Replace potatoes for mixed roasted vegetables* (celeriac, butternut squash, multi-coloured carrots, beets, turnips, parsnips).

**recipe follows*

3. Balance intake of starchy vegetables, roots and tubers with non-starchy vegetables, fruits and legumes

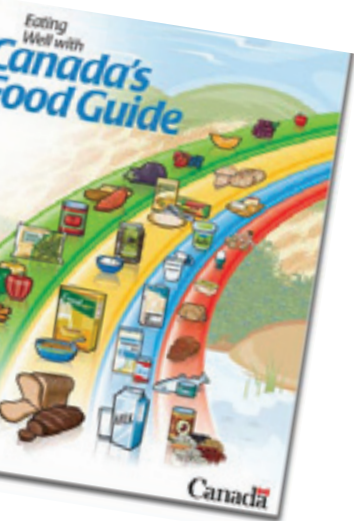
- Starchy vegetables, roots and tubers are lower in fibre, antioxidants and phytochemicals and higher in calories compared to non-starchy vegetables, fruits and legumes.

4. Eat relatively unprocessed grains and/or legumes with every meal

- Whole grains are good sources of carbohydrate and fibre, vitamins, minerals, phytochemicals and in some cases whole grains, such as quinoa, are rich in protein.
- Canada's Food Guide recommends that at least half of our daily grain product choices should be whole grains. Women aged 19-50 and 51+ should eat 6-7 servings of grain products daily and half of these (3-4 servings) should be whole grains.

What is a serving of grain products?

- Pasta, brown rice, bulgur, quinoa, kasha = ½ cup or 125ml
- Hot cereal (oatmeal) = ¾ cup or 175ml
- Cold cereal = 30g, this could range from ¼ to 1 ¼ cup depending on cereal type. For example, 1 cup (28g) of Kellogg's® Rice Krispies® is close to 1 serving. In contrast, a ½ cup (36g) of Kellogg's® All-Bran® is just over 1 serving. Look on the Nutrition Facts Labels to help determine the serving size of your favourite cereal.
- Bagel and flat breads, whole grain = ½ bagel (45g) or ½ pita (35 g)
- Popcorn = 2 cups or 500ml
- Bran muffin, whole-grain = ½ large muffin (35g)
- Bread, whole-grain = 1 slice (35g)



Wheat Berry Salad with Dried Cranberries, Walnuts and Carrots

What are whole grains?

“Whole grains” include all three parts of the seed (the bran, the endosperm and the germ). Compared to refined (processed) grains from which most of the bran and germ are removed, whole grain wheat, rice, barley, oats, wild rice, rye and corn contain more nutrients, more fibre and less fat.

How can you find whole grain foods?

Choose whole grains such as bulgur, millet, brown rice, kasha, quinoa, pot barley, amaranth, buckwheat, oats, rye, spelt, triticale, wild rice. Look for the word “whole grains” in the ingredient lists on food labels of cereals, bread, buns, bagels, pasta and other grain products. If the food contains whole grains, the first ingredient should have the words “whole” or “whole grain” followed by the name of the grain, such as “whole wheat”, “whole oats”, “whole rye”, “whole grain corn”. Whole grains may also be listed as the first ingredient, such as “brown rice”, “wild rice”, “barley”, “bulgur” or “oats”. Whole wheat flour may, or may not, contain the germ portion of the whole grain. Whole wheat bread (including 100% whole wheat) and breads and cereals labeled as “multigrain” and/or “organic” may, or may not, be made with whole grains.

Bran

provides fibre, B vitamins, minerals, such as magnesium, iron and zinc, phytochemicals and some protein

Endosperm

provides carbohydrate and protein

Germ

provides B vitamins, unsaturated fats, vitamin E, minerals and phytochemicals

A GRAIN KERNEL

Easy ways to add more whole grains to your everyday meals

- Mix 2 or 3 whole grain breakfast cereals together.
- Choose whole grain pastas and couscous.
- Add cooked millet, bulgur, brown rice or kasha to vegetables and stews.
- Add roasted nuts, fresh herbs (thyme) and dried or fresh fruit (cranberries) to quinoa and barley.
- Add rolled oats, wheat germ, oat bran or wheat bran to pancakes, muffins and other baked goods.
- Make your own whole grain tortilla chips by cutting whole grain flour tortillas into triangles. Spray lightly with canola oil and bake at 350°F until crisp.
- Choose whole grain breads, pitas, wraps, flatbreads or buns.

What is a legume?

Legumes are a family of plants that produce seeds in pods, such as beans, peas and lentils.

What is a serving of legume?

Since legumes are high in protein and often eaten in place of meat they are included as a Meat Alternative on Canada's Food Guide.



From top left: split green and yellow peas, black beans, white lentils, white navy beans, red kidney beans

Women aged 19-50 and 51+ years should eat 2 servings of meat and alternatives per day and choose meat alternatives such as beans, lentils and tofu more often.

One serving of cooked legumes (beans, lentils, peas) = $\frac{3}{4}$ cup or 175ml.

Compared to meat, legumes are:

1. Lower in fat.
2. Higher in dietary fibre (meat contains no fibre).
3. Lower in calories, which could help you achieve and maintain a healthy weight.

Legumes are also:

1. A good source of protein.
2. A high source of B vitamins and minerals such as iron.
3. A source of phytochemicals.

Cooking with legumes

- **Canned beans, peas and lentils** - These are already cooked, just rinse well in cold water and add to your favourite dish.
- **Dried beans and peas** - Rinse and soak overnight in water to help them cook faster. Boil beans in fresh water. Gather and discard any foam that comes to the surface while cooking. Cook until tender as per package directions. Alternatively, follow the package directions for a quick cooking method.
- **Dried lentils and split peas** – these do not need to be pre-soaked. They are smaller and cook faster; just rinse and cook.

Easy ways to add more legumes to your everyday meals and snacks!

- Add a can of rinsed beans to homemade soups and stews.
- Blend chickpeas, red kidney beans or black beans with garlic, lemon juice and olive oil to make a spread. Serve with vegetables or whole wheat pita as a snack or add it to a vegetable wrap.

- Make lentil patties instead of hamburgers by using cooked lentils instead of beef. Serve on a whole wheat bun with yogurt and fresh herbs.
- Have vegetarian tortillas with beans, lettuce, tomato, peppers and avocados.
- Create vegetarian chili by replacing the meat with a variety of beans.
- Add half a can of beans to frittatas or omelettes to make a high-fibre, high-protein breakfast or entrée.
- Marinate soybeans in vinegar, a little oil and your favourite spices and herbs. Serve on a cracker for an appetizer.
- Make a lentil curry with your favourite vegetables and brown rice.
- Mix legumes and chopped vegetables, quinoa, pot barley or couscous for a tasty side dish.
- Add chickpeas to your salad.

5. Limit refined starchy foods

Refined starchy foods include products made from white flour such as bread, pasta, pizza, white rice, and foods that are high in fat and sugar and low in fibre, such as cakes, pastries, biscuits, cookies, doughnuts and other baked goods. Small portions of these foods may be eaten in moderation.

Overall message

No single food can reduce your risk of cancer, but a healthy balanced diet that includes a variety of plant-based foods may help lower your cancer risk and promote overall health.



Berry Fruit Smoothie

Plant-Based Meal Plan—A Day at a Glance

BREAKFAST:

Berry Fruit Smoothie – 1 cup skim milk, almond or fortified soy milk, ½ banana, 2 tbsp low-fat yogurt, ½ cup mixed fresh or frozen berries (strawberries, blueberries, raspberries), 2 tbsp ground flax seed

OR

Toast and Fruit – Whole-grain toast with a nut butter (peanut, hazelnut or almond) and fruit salad (e.g. banana and peach slices with cottage cheese)

LUNCH:

Veggie Wrap – Whole-grain tortilla, hummus spread, spinach, avocado or hardboiled egg slices, roasted red peppers, red onion, crumbled goat or feta cheese

Parfait – 1 cup low-fat yogurt, ¼ cup bran cereal or buds topped with fresh (pear slices, berries) or dried fruit (apricots, cranberries)

SNACK:

Veggies & Dip – Hummus or guacamole and chopped veggies (peppers, carrots, celery, broccoli, tomatoes, cauliflower) and/or whole-grain pita pieces

Skim Milk – 1 cup

DINNER:

Romaine and Spinach Salad, topped with fresh fruit (strawberries, pears, blueberries) or dried fruit (cranberries, cherries, or chopped apricots) and toasted nuts (slivered almonds, chopped walnuts or pistachios) and drizzled with balsamic vinaigrette

Beanie-Veggie Frittata* with feta cheese

**recipe follows*

Recipes

Chicken and Mixed Vegetable Stir-Fry with Orange and Ginger Marinade

Try out this recipe with other vegetables (bok choy, snow peas, mushrooms) and fruits (orange or pineapple segments). Don't be limited to chicken, this marinade works well with tofu, beans or shrimp.

Serves: 4

Marinade:

¼ cup orange juice, freshly squeezed
2 Tbsp of low-sodium soya sauce
1 tbsp honey
1 tsp toasted sesame oil
1 tsp ginger, shredded

1 chicken breast, sliced 1 inch pieces
2 cups brown rice, cooked
1 tbsp canola or vegetable oil, divided
1 clove garlic, crushed
1 tsp ginger, shredded
1 medium yellow onion, sliced
1 ½ red bell peppers, sliced
1 ½ cups broccoli florets
1 cup green beans
1 cup beans sprouts
¼ cup cashews, chopped



Chicken and Mixed Vegetable Stir-Fry

Directions:

1. In a bowl, whisk together marinade ingredients and pour over chicken slices. Refrigerate for 1 hour or up to 24 hours. When ready to cook, remove chicken and reserve the marinade.
2. Start cooking brown rice according to package directions (note: may take 40-45 minutes).
3. In a large non-stick skillet or wok, heat half the oil over medium-high heat. Add garlic and ginger and sauté for 1 minute.
4. Add marinated chicken and cook stirring frequently; remove chicken when cooked through (6-7 minutes).
5. Add remaining oil to the skillet/wok and heat on medium-high heat until hot. Stir-fry the onions, peppers, green beans and broccoli until the vegetables are crisp but tender (4-5 minutes).
6. Add the marinade and cooked chicken to the skillet/wok and stir gently until the marinade has coated all stir-fry ingredients and starts to thicken. Add the bean sprouts and stir-fry for another minute.
7. Serve over brown rice and sprinkle with chopped cashews.

Reminder: Increase the amount and type of vegetables and reduce the amount of meat of your favourite stir-fry recipe. Instead of white rice, serve with brown rice or whole-wheat couscous.

Perfectly Roasted Vegetables

This recipe works with lots of vegetables—try sweet potatoes, rutabaga or beets. Use leftovers in a wrap for lunch or purée them and add to vegetable soup.

Serves: 6

- 1 celeriac root
- 1 butternut squash
- 2-3 multi-coloured carrots
- 2-3 parsnips
- 4-5 Jerusalem artichokes or sunchokes
- 1 whole garlic bulb (4-5 cloves)
- Fresh herbs – rosemary, thyme or oregano
- 1 ½ tbsp olive, canola or grape seed oil
- Salt and pepper to taste

Directions:

1. Pre-heat oven to 400°F.
2. Chop celeriac and butternut squash into thumb-size pieces.
3. Cut large carrots and parsnips in half lengthwise, then cut crosswise.
4. Chop Jerusalem artichokes/sunchokes in half.
5. Break up the garlic bulb and leaving the cloves whole and unpeeled, bash them slightly with the palm of your hand.
6. Pick the herb leaves off their woody stalks.
7. Combine the vegetables and fresh herbs in a large glass roasting dish. Season with salt and freshly ground black pepper.
8. Add oil and toss vegetables to coat evenly.
9. Cook, uncovered, stirring occasionally, until tender, about 40 minutes.



Perfectly Roasted Vegetables

Quinoa Pilaf with Peppers, Chickpeas and Herbs

Try this recipe with roasted butternut squash, spinach or kale!

Serves: 4

2 cups low-sodium chicken broth
1 cup quinoa, rinsed
½ tbsp olive oil
1 shallot, finely chopped
½ red pepper, chopped
½ green pepper, chopped
2 garlic cloves, minced
1 tbsp fresh basil, finely chopped
½ tbsp fresh oregano, finely chopped
1 cup canned chickpeas, drained and rinsed
Salt and pepper to taste



Directions:

1. Bring broth to a boil.
2. Add quinoa and reduce heat, cover and simmer for 12-15 minutes, until liquid is absorbed.
3. Sauté shallots and peppers in olive oil over a medium-high heat until shallots are translucent (4-5 minutes) add herbs and garlic, sauté for one more minute; set aside.
4. Add the cooked quinoa to the vegetables and mix well, stir in chickpeas.
5. Season with salt and pepper to taste.

Quinoa Pilaf with Peppers,
Chickpeas and Herbs

Beanie-Veggie Frittata with Feta Cheese

Be adventurous and add more of your favourite vegetables, such as cherry tomatoes, jalapeño pepper, leeks or mushrooms!

Serves: 2

- 3 eggs
- Salt and pepper to taste
- ½ tbsp olive oil
- ½ red onion, chopped
- ½ red pepper, chopped
- ½ green pepper, chopped
- 1 clove garlic, crushed
- ½ cup canned black beans, drained and rinsed
- 2 tbsp feta cheese, crumbled
- 1 tbsp fresh basil, finely chopped

Directions:

1. In a medium-sized bowl whisk eggs until combined. Season with salt and pepper
2. Sauté red onions and peppers in olive oil over a medium-high heat using an oven-proof skillet until vegetables are crisp but tender (3-4 minutes). Add garlic and sauté for a further minute.
3. Add black beans and sauté for 2 minutes.
4. Set the oven broiler to high heat.
5. Add the egg to the vegetable and legume mixture in the skillet; let the bottom of the frittata cook for 1-2 minutes; add feta cheese.
6. Transfer skillet to oven broiler and cook until eggs are just set, about 2-3 minutes. To check to see if the eggs are cooked lift the edges of the frittata with a spatula; if the bottom is golden brown and the egg is set (not wobbling), it is cooked.
7. Sprinkle on basil and serve in pizza-style slices.



Sautéed Onion, Peppers and Black Beans

Where can you go for help and support?

- The dietitians at the Odette Cancer Centre can support your efforts and refer you to programs or services to help you reach your goals. To contact a dietitian, call the Patient & Family Support Program, Odette Cancer Centre at 416-480-4623.
- To find a dietitian in your area go to <http://www.dietitians.ca/> and click on “Find a Dietitian”.
- EatRight Ontario website (<http://www.eatrightontario.ca/Doorway.aspx>) offers two ways for you to contact a registered dietitian for nutrition advice. You can email (anytime) or call toll free (1-877-510-5102).

Helpful resources

- Canada’s Food Guide can help you select healthy foods. To get your copy call Health Connection at 1.800.361.5653 or download it from http://www.hc-sc.gc.ca/fn-an/index_e.html
- For plant-based diet recipe ideas, subscribe to a free recipe e-mail service such as the American Institute of Cancer Research weekly Health-e-Recipes:
http://www.aicr.org/site/PageServer?pagename=pub_subscribe_to_email
or the WebMD Daily Bite:
<https://member.webmd.com/newsletters/newsletters.aspx>
- For additional plant-based diet recipes, view or download The New American Plate Series of brochures from the American Institute of Cancer Research website:
http://www.aicr.org/site/PageServer?pagename=aicr_publications_brochures#nap
- Portion size guide for different foods http://www.aicr.org/site/PageServer?pagename=elements_serving_size
- WebMD® Portion Size Guide gives great examples of reasonable portion sizes. Download it at <http://www.webmd.com/diet/printable/portion-control-size-guide>
- EATracker will let you track your daily food and activity and show you how you stack up based on Canada’s Food Guide and Canada’s Physical Activity Guide. Go to http://www.dietitians.ca/public/content/eat_well_live_well/english/eatracker/index.asp
- Other Your Nutrition Connection brochures available at ync.sunnybrook.ca: Dietary Fat and Breast Cancer Risk; Fibre and Breast Cancer Risk; Physical Activity and Breast Cancer Risk; How to Assess Your Body Weight; Your Healthy Body Weight and Breast Cancer Risk; Food, Nutrition and Physical Activity Recommendations for Reducing Breast Cancer Risk.

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