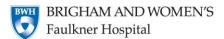
# **Nutrition During Cancer Treatment**



Balanced nutrition is an important part of cancer treatment, as well as survivorship and prevention. A healthful diet can help rebuild your body's cells and energy levels, especially if you are receiving chemotherapy or radiation treatment. The most effective diet for you to follow both before and after surgery is one that is well-balanced with a variety of nutrients from fruits and vegetables, whole grains, lean protein sources and healthful fats. Staying adequately hydrated with non-caffeinated beverages is also important.

# **Fruits and Vegetables**

Fruits and vegetables naturally contain powerful and beneficial substances called phytochemicals and antioxidants, which may help to inhibit the growth and spread of tumors or even to destroy existing tumor cells. Fruits and vegetables contain essential vitamins, minerals and fiber that may help protect not only against cancer but also other chronic diseases. Choose deeply-colored produce and aim for 5-9 servings daily.

#### **Whole Grains**

Whole grains are grains that have undergone minimal processing so the bran, germ, and endosperm are retained, as opposed to refined grains that only retain the endosperm. The whole grain contains phytochemicals, fiber, and nutrients such as folic acid, magnesium, and vitamin E. Eating whole grains may lower the risk for various diseases, including cancer.

#### **Lean Protein**

Protein is needed to help rebuild cells and for healthy immune function. Protein can be obtained from animal and plant sources. Choose protein foods low in saturated fat and cholesterol, such as skinless chicken or turkey breast, fish (especially cold-water fish that contain omega-3 fats such as salmon or mackerel), canned tuna and egg whites. Good plant choices include beans, nuts, seeds, and low or non-fat dairy foods such as low-fat milk, yogurt, and cheese.

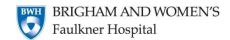
#### **Healthful Fats**

Some fat in the diet is needed to help build cells, produce hormones, cushion vital organs, and facilitate absorption of certain vitamins. It also improves the flavor of food. But not too much is needed, and unsaturated and omega-3 fats should be used. Unsaturated fats such as olive oil and canola oil are recommended for cooking. Nuts, nut butters, seeds, and avocados are other good sources of unsaturated fats. Fatty cold-water fish, walnuts, and flaxseeds are rich in omega-3 fats. It is recommended to avoid foods high in saturated fat, trans fat, and cholesterol, which are found in butter, lard, coconut oil, full-fat dairy products, red meat, the skin of poultry, and many processed baked goods.

#### **Hydration**

Our bodies on average contain about 60% water, which every system in the body needs to function normally. Water is lost daily through sweating, breathing, urinating, and other everyday body functions. Most adults need to drink about 8-12 cups of non-caffeinated fluids daily to replenish that amount, with higher amounts recommended with higher activity levels, or due to excess water loss from diarrhea or vomiting. Water, low-fat milk, soups, and 100% fruit juices in moderation are recommended.

# **Nutrition During Cancer Treatment** (continued)



#### **Vitamins and Other Supplements**

If you are eating a well-rounded diet, additional vitamins are generally not needed. You may already be taking a general multivitamin or individual supplements such as calcium or vitamin D. Always inform your doctor of all supplements you are using, especially herbal supplements. Generally, you may be asked to discontinue all supplements two weeks prior to surgery as certain supplements may affect blood clotting. After surgery, discuss supplement use with your health care provider or dietitian to determine which ones are appropriate to resume using.

### Soy

Soy is a controversial food, particularly for patients with estrogen-receptor-positive breast tumors. Soy is a source of high-quality protein, vitamins, fiber, and phytoestrogens (literally plant estrogens). It is not yet clear if soy estrogens mimic the action of the human hormone estrogen and promote the growth of breast tumors, or if they act protectively by blocking the action of human estrogen. Studies have shown that large groups of women who ate high amounts of soy had a protective effect from breast tumor recurrence. Soy may be especially beneficial if whole soy foods are eaten that replace a diet high in saturated fat and animal protein. However, use of high-dose soy supplements has been shown to promote tumor growth, and it is recommend to avoid high-dose soy supplements.

More research is needed before making specific dietary recommendations about soy foods. Two to three servings of soy per week in its whole form, such as soy milk, edamame, tofu, and miso is considered safe and nutritious, even for patients with estrogen-receptor-positive breast cancer.

## **Eating Tips Before and After Surgery**

Aim to eat a well-rounded diet that includes foods from each food group above. Being well-nourished and well-hydrated can improve your chances of having a faster recovery and healing time. After surgery, you may experience constipation, nausea or vomiting, or a decreased appetite. Try eating small, frequent meals or snacks consisting of nutrient-dense foods that include a lean protein source. Eat fiber-rich whole grains and high-fiber breads and cereals. If you have lost your appetite, try homemade nutrition shakes made with low-fat milk, fruit, Greek yogurt or whey protein powder. Avoid foods and beverages that contain calories but little else (e.g.: cookies, candy, soda) as this can contribute to fatigue and a prolonged healing time.