

Cancer & Nutrition



Learn more

To meet with our oncology dietitians at any point during your cancer journey, please ask your physician, nurse or nurse navigator for a referral. Dietitian services are available at no cost.

Phytochemicals: Cancer fighters in the foods we eat

Phytochemicals are nutrients that naturally occur in plants. (Phyto means plant in Greek.) Phytochemicals provide plants with color, odor and flavor. Once we eat them however, research shows they can influence the chemical processes inside our bodies in helpful ways.

Benefits of Phytochemicals

Phytochemicals have the proven potential to:

- Stimulate the immune system
- Block what we eat, drink and breathe from becoming cancer-producing substances
- Reduce inflammation that makes cancer growth more likely
- Prevent DNA damage and help with DNA repair
- Reduce damage to cells that can spark cancer
- Slow cancer cell growth rate
- Trigger damaged cells to die before they can reproduce
- Help regulate hormones

Improving Your Health

To get the greatest health benefits:

- Eat a varied diet high in a variety of vegetables, fruits, whole grains and beans
- Favor brightly colored or strongly flavored vegetables and fruits, which are often the best sources of phytochemicals
- Stick to natural food sources. Phytochemical supplements may not be as easily absorbed as those naturally occurring in food.

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Guide to Phytochemicals

Thousands of phytochemicals have been identified, and scientists have only begun to investigate their health benefits. This chart lists the phytochemicals getting the greatest attention, the foods that contain them and the potential health benefits.

Phytochemicals

Phytochemical(s)	Plant Source	Possible Benefits
Carotenoids (such as beta-carotene, lycopene, lutein, zeaxanthin)	Red, orange and green fruits and vegetables including broccoli, carrots, cooked tomatoes, leafy greens, sweet potatoes, winter squash, apricots, cantaloupe, oranges and watermelon	May inhibit cancer cell growth, work as antioxidants and improve immune response
Flavonoids (such as anthocyanins and quercetin)	Apples, citrus fruits, onions, soybeans and soy products (tofu, soy milk, edamame, etc.), coffee and tea	May inhibit inflammation and tumor growth; may aid immunity and boost production of detoxifying enzymes in the body
Indoles and Glucosinolates (sulforaphane)	Cruciferous vegetables (broccoli, cabbage, collard greens, kale, cauliflower and Brussels sprouts)	May induce detoxification of carcinogens, limit production of cancer-related hormones, block carcinogens and prevent tumor growth
Inositol (phytic acid)	Bran from corn, oats, rice, rye and wheat, nuts, soybeans and soy products (tofu, soy milk, edamame, etc.)	May slow cell growth and work as an antioxidant
Isoflavones (daidzein and genistein)	Soybeans and soy products (tofu, soy milk, edamame, etc.)	May inhibit tumor growth, limit production of cancer-related hormones and generally work as an antioxidant
Isothiocyanates	Cruciferous vegetables (broccoli, cabbage, collard greens, kale, cauliflower and Brussels sprouts)	May induce detoxification of carcinogens, block tumor growth and work as an antioxidant
Polyphenols (such as ellagic acid and resveratrol)	Green tea, grapes, wine, berries, citrus fruits, apples, whole grains and peanuts	May prevent cancer formation, prevent inflammation and work as an antioxidant
Terpenes (such as perillyl alcohol, limonene, carnosol)	Cherries, citrus fruit peel, rosemary	May protect cells from becoming cancerous, slow cancer cell growth, strengthen immune function, limit production of cancer-related hormones, fight viruses, work as an antioxidant

American Institute for Cancer Research. (April 10, 2013). Phytochemicals: The Cancer Fighters in the Foods We Eat. *AICR: Diet, What We Eat*. Retrieved from: http://www.aicr.org/reduce-your-cancer-risk/diet/elements_phytochemicals.html