A healthy eating pattern that includes a variety of plant-forward foods such as vegetables, fruits, grains, oils, nuts and seeds, as well as protein and fat-free or low-fat dairy, is associated with a reduced risk of certain types of cancers, according to the Dietary Guidelines for Americans. Walnuts offer a variety of important nutrients, including good fats (13g/oz polyunsaturated fat), making them an ideal ingredient for plant-forward meals.

A pilot clinical trial and preliminarily animal and cell model research have investigated the potential benefit walnuts may have on cancer. A review of animal research pointed toward multiple nutrients in walnuts that may act in various ways to help decrease risk of cancer development. Animal and cell studies are provided as background and used to formulate hypotheses for additional research needed to determine the effects on humans.

Researchers have found that a diet including a modest amount of walnuts (equivalent to 2 ounces per day in humans) may be associated with a lower risk of breast, colorectal, and prostate cancer in mice.
**COLORECTAL CANCER**

**A STUDY FOUND** that eating walnuts may modify gut bacteria to promote colon health including colon tumor suppression. In the study, researchers incorporated walnuts into two different diets, a standard mouse diet supplemented with 0, 15, 22.5, or 30.2 percent of calories from walnuts and a typical Western diet supplemented with 0, 5.2, 10.5, or 21.4 percent of calories from walnuts. Calories from fat were proportionally lowered in each diet to compensate for the addition of walnuts. Male mice fed the Western diet with 10.5 percent of total calories from walnuts (equivalent to just over 1 ounce of walnuts in humans), showed a significant reduction in the number and size of tumors.

**ANOTHER STUDY DEMONSTRATED** that walnuts in the diet may inhibit colorectal cancer growth in mice by suppressing angiogenesis. In this study, mice with human colon cancer cells were randomized to diets containing approximately 19 percent of total energy from corn oil (control diet), flaxseed oil, or ground walnuts (equivalent to approximately 2 ounces of walnuts in humans). Compared with the corn oil diet, mice fed the walnut diet or flaxseed diet exhibited significantly slower tumor growth rates and lower tumor weights. Differences between the walnut and flaxseed diets were not statistically significant, but compared to control-fed mice, those consuming walnuts experienced significantly decreased angiogenesis which may help inhibit the progression of colorectal cancer.

---

**PROSTATE CANCER**

**WALNUTS CONTAIN SEVERAL BIOACTIVE compounds including ellagitannins (ETs), a type of polyphenol.** After consumption, ETs are metabolized to release ellagic acid (EA), which is further metabolized by gut microbiota to form urolithins, such as A (UA) and B (UB). A cell study looked at gene expression in prostate cancer cells and found that UA, the main human metabolite of walnut polyphenols, may help to inhibit or reduce the risk of prostate cancer development. Another cell study showed that a diet rich in ET-containing foods, like walnuts, could reduce the risk of prostate cancer by influencing regulatory mechanisms involved.

**EXPERIMENTAL RESEARCH SHOWED** that walnuts may help reduce prostate cancer risk in mice. Researchers found the final average tumor size in mice fed a diet enriched with walnuts (equivalent to 2 ounces of walnuts per day in humans) to be approximately 25 percent of the average size of the prostate tumors in the mice that consumed a non-walnut control diet.

---
