Broccoli Reduces Prostate Cancer Risk

Epidemiological studies suggest that men who consume at least one serving of cruciferous vegetables per week (e.g. broccoli, cauliflower, cabbage, etc.) are less likely to develop prostate cancer.* It's believed that chemical compounds called isothiocyanates are responsible for this protective effect, but efforts to understand the mechanisms at work have previously involved tissue culture or animal models. Now, a year-long study with human volunteers has further illuminated this phenomenon under real-life conditions.*

British researchers randomly assigned subjects to consume either a broccoli-rich or a pea-rich control diet for 12 months. Subjects' prostates were biopsied before, during, and after the study period, and differences in gene expression were scrutinized. Analyses revealed that more changes in gene expression occurred among men on the broccoli-rich diet, reaching significance within six months.

"Consuming broccoli...result[s] in complex changes to signaling pathways associated with inflammation and carcinogenesis in the prostate," concluded researchers. These changes in gene expression may account for the observation that "diets rich in cruciferous vegetables may reduce the risk of prostate cancer and other chronic disease."

—Dale Kiefer


Pomegranate Extract Inhibits Inflammation

Pomegranate extract inhibited inflammatory activity in blood isolated from treated rabbits.* Pomegranate is known to have beneficial antioxidant and anti-inflammatory properties.

In this study, four rabbits were given 10 mL of pomegranate fruit extract (equivalent to 175 mL of pomegranate juice), and two control animals received water. Blood was collected two hours later and incubated with either cyclooxygenase enzymes (COX-1 and COX-2, involved in inflammation) or with rabbit cartilage cells (chondrocytes) to test the effect of pomegranate-treated blood on inflammatory processes.

Plasma samples from treated rabbits significantly inhibited COX-1 and especially COX-2 activity as compared with untreated plasma. Treated plasma samples also inhibited the production of inflammatory mediators nitric oxide and prostaglandin E2 in chondrocytes.

The authors believe these actions suggest a future role in the treatment of arthritis: "...consumption of pomegranate fruit extract may be of value in inhibiting inflammatory stimuli-induced cartilage breakdown and production of inflammatory mediators in arthritis."

—Laura J. Ninger, ELS


Calorie Restriction Decreases Oxidative Stress, Increases Life Span

The healthful benefits of calorie restriction may be related to decreased oxidative stress associated with consuming fewer calories, rather than decreased energy intake alone, according to a new report.* Calorie restriction extends life span in experimental animals, and has been associated with numerous health benefits in humans.

Researchers studied aged mice, which received either a calorie-restricted diet, or a calorie-restricted diet rich in advanced glycation end products (AGEs). AGEs induce oxidative stress, which is correlated with organ dysfunction and decreased life span.

Old mice fed the reduced-calorie diet laced with AGEs developed blood markers of oxidative stress, followed by insulin resistance, heart and kidney damage, and decreased longevity. Virtually identical mice, which consumed the simple calorie-restricted diet, experienced no such signs of oxidative stress, and lived longer than their counterparts.

"Therefore," concluded researchers, "the beneficial effects of a [calorie restricted] diet may be partly related to reduced oxidative intake, a principal determinant of oxidant status in aging mice, rather than decreased energy intake."

—Dale Kiefer
