



THE HEALTH VALUE OF FRUITS AND VEGETABLES

What role have fruits and vegetables played in the past?

For nearly a century, fruits and vegetables have been recognized as a good source of vitamins and minerals. They have been especially valuable for their ability to prevent vitamin C and vitamin A deficiencies.

What are the current recommendations?

The USDA and National Institutes of Health suggest a minimum of five servings per day of fruits and vegetables combined.

What are some of the good things in fruits and vegetables?

- **vitamins**
- **minerals**
- **flavonoids** - plant chemicals that act like antioxidants
- **saponins** - plant chemicals that have a bitter taste
- **phenols** - organic compounds in foods
- **carotenoids** - vitamin A-like compounds
- **isothiocyanates** - sulfur-containing compounds
- several types of **dietary fiber**

What has changed and how?

Research of the past 20 years has shown that fruits and vegetables not only prevent malnutrition but also help in maintaining optimum health through a host of chemical components that are still being identified, tested, and measured.

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What do the newest studies show?

Heart Disease

Research from the United States, United Kingdom, and The Netherlands suggests that the role of fruits and vegetables in preventing heart disease is a protective one. Risk reduction was estimated as high as 20 - 40 percent among individuals who consumed substantial amounts of fruits and vegetables. People who were already diagnosed with coronary heart disease were able to reduce blockage modestly through exercise and an extremely low-fat, vegan-like diet rich in fruits and vegetables.

Cancer

A review by the World Cancer Research Fund and the American Institute for Cancer Research concluded in 1997 that “diets containing substantial and varied amounts of fruits and vegetables could prevent 20 percent or more of all cases of cancer.”

The strongest evidence relates to stomach and lung cancer. Other areas that show convincing results are the mouth, pharynx, esophagus, colon, and rectum.

Studies involving patients who were taking dietary supplements in place of fruits and vegetables were ended early due to a higher mortality rate among the supplement users. Researchers concluded that dietary supplements do not have the same positive effects as eating real fruits and vegetables.

Diverticulosis

Diets that are high in insoluble fiber may offer the best protection against this disease. Fruits and vegetables are high in cellulose—a type of insoluble fiber.

Stroke

Five studies have reported that high fruit and vegetable intake can reduce the risk of a stroke by up to 25 percent.

Hypertension

A 1997 study of 459 men and women found a high intake of fruits and vegetables could lower blood pressure in individuals with either high or normal blood pressure. The experimental diet included 8 - 10 daily servings of fruits and vegetables combined as well as low-fat dairy products.

Birth Defects

Folate helps prevent birth defects such as spina bifida. Fruits and vegetables such as oranges, spinach, broccoli, and dried beans are good sources of folate. Although no specific studies have examined fruit and vegetable intake and neural tube defects, scientists estimate that half of all neural tube defects could be prevented if women were consuming adequate folate.

Cataracts

Delayed development of cataracts is another beneficial effect of fruits and vegetables as indicated by some epidemiological reports. A five-fold reduction in cataract risk was found for individuals who consumed a minimum of 1 1/2 servings of fruits and vegetables each day. Carotenoid-rich fruits and vegetables containing zeaxanthin and lutein proved the most beneficial because not all carotenoids offer equal protection. Examples of fruits and vegetables that contain lutein and zeaxanthin are spinach, collards, kale and sweet corn. Supplements of beta-carotene did not reduce cataract risk.

Diabetes

Diets that are high in fiber may be able to help in the management of diabetes. Soluble fiber delays glucose absorption from the small intestine and thus may help prevent the spike in blood glucose levels that follow a meal or snack. The long-term effect may be insignificant, however, due to the many other factors that affect blood glucose.

Chronic Obstructive Pulmonary Disease

(asthma and bronchitis)

In one research study, asthmatic children in Great Britain who consumed fruit more than once a day had better lung function. The higher intake of fruits and vegetables seemed to increase the ventilation function of the lungs.

Obesity

Obesity is a condition caused by many factors. Unadorned fruits and vegetables are naturally low in calories, and may be an important way to prevent and treat obesity. One study concluded that diets that are high in fiber are associated with lower body weight.

For More Information

Ask your Iowa State University Extension county office for copies of these publications:
Cancer and Your Diet: Why "Take Chances" When You Can "Take Control" PM 1682b*
Eat for Health, NCR 454*
Foods and Your Cholesterol, NCR 334 (\$.50)*
Guide to Low-Cholesterol Foods, NCR 335*
What You Need to Know about Health Claims on Foods, PM 1790*

*These publications are available on the Iowa State University Extension Web site
www.extension.iastate.edu/Pages/pubs

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