

Can 5 A Day Keep Cancer Away?

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The diet-cancer link

- 1 in 4 deaths in the U.S. are due to cancer
- Improvement in diet and exercise could reduce the number of new cancer cases by 30-40%

The diet-cancer link

- People with a low intake of fruits and vegetables are at twice the risk for most types of cancers compared to those with a high intake
- The evidence for fruits and vegetables in preventing hormone-related cancers is weak to nonexistent

Money spent each year on Food Marketing

- \$2 million from NCI on *5 A Day* campaign
- \$50 million for any nationally advertised candy bar
- \$100 million for any nationally advertised soft drinks
- \$1 billion for McDonald's

Research on fruits and vegetables and cancer prevention

- The most widely studied cancers in relation to fruit and vegetable intake are:
 - stomach and colon
 - lung
 - breast and prostate
 - bladder and kidney
 - pancreas
 - non-Hodgkins lymphoma

Research on fruits and vegetables and cancer prevention

- Very little research has been done on these cancers in relation to fruit and vegetable intake:
 - ovarian and cervix
 - thyroid
 - nasal cavity
 - small intestine
 - skin

Fruits and Vegetables and Breast cancer

- The association between eating fruits and vegetables and preventing breast cancer is unclear
- ...however...
- There is strong evidence that eating *cruciferous* vegetables (Brussels sprouts, cabbage, broccoli, cauliflower) may lower breast cancer risk

Cruciferous vegetables and Breast cancer

- A recent large study found a 40-50% lower risk of postmenopausal breast cancer among women who ate 1-2 servings of cruciferous vegetables per day compared to women who ate little or none
- Some animal experiments have shown that substances in cruciferous vegetables have stopped the growth of human breast cancer cells

Fruits and Vegetables and Prostate cancer

- There are few studies linking fruit and vegetable consumption with prostate cancer risk
- Several recent studies have shown that eating *lycopene* lowers the risk of prostate cancer
- *Lycopene* is an antioxidant found mostly in tomatoes and also in orange and yellow fruits and vegetables

Fruits and Vegetables and Colon cancer

- Past research has shown that the more fruits and vegetables eaten the lower the risk of colon and rectal cancer
- Current studies are showing that people who eat less than 1.5 servings of fruits and vegetables per day have 65% higher risk for colon cancer

Fruits and Vegetables and Lung cancer

- Early research and current research both show that the higher the fruit and vegetable intake the lower the risk
- Risk is much higher among people who eat less than 2 servings of fruit or veg per day
- The greatest protection is associated with cruciferous vegetables
- Heavy smokers do not get as much of a benefit from diet

Fruits and Vegetables and Non-Hodgkins Lymphoma

- The Nurses' Health study found that eating 3 or more servings of vegetables per day was associated with a 38% lower risk
 - 88,410 female American nurses
- Previous studies found a reduced risk with citrus fruit and dark green vegetables in men but not women

How do fruits and vegetables help prevent cancer?

- **Phytochemicals**- (“phyto” refers to “plant”) chemicals found in plants that help prevent diseases such as cancer
- **Antioxidants**- substances found in phytochemicals that help protect cells from damage
- **Free radicals**- substances that damage, or oxidize, cells

It's not just *5 A Day*, It's color too!

- There are HUNDREDS of phytochemicals
- Phytochemicals are the pigments that provide the color to fruits and vegetables
- Phytochemicals also:
 - prevent cell damage
 - prevent cancer cells from multiplying
 - lower cholesterol

Therefore...

- The more color in your diet
- The more health benefits you will receive
- And the greater your chance will be to prevent disease

Are there other ways to prevent cancer?

- FOOD SAFETY

- Rinse fresh produce and remove outer leaves before eating
- Store 40 degrees or below to prevent fungus
- Preserve nutrients by not overcooking
- Choose locally grown, in-season produce

Are there other ways to prevent cancer?

- Caution with fat in your diet
- Increase your physical activity
- Do not smoke or breath in second-hand smoke or use smokeless tobacco (dip/chew)
- Drink alcohol in moderation
- Reduce obesity
- Careful in the sun. Do not use tanning beds

Are there other diseases that phytochemicals can prevent?

- Cardiovascular disease
- Diabetes
- Stroke
- Obesity
- Diverticulosis
- Cataracts



Can vitamin supplements help prevent cancer?

- Little scientific evidence of benefit
- and...
- Little scientific evidence of harm
 - low dose multivitamin or multivitamin-mineral supplements
 - do not exceed 100% of the RDA

Can vitamin supplements help prevent cancer?

- Recommendations from the U.S. Preventive Services Task Force (USPSTF):
 - There is not enough evidence to recommend for or against the use of vitamin and/or mineral supplements or antioxidants for the prevention of cancer or heart disease
 - USPSTF recommends **AGAINST** the use of beta-carotene supplements either alone or in combination for the prevention of cancer or heart disease

Can vitamin supplements be harmful?

- YES!
- Many vitamins are toxic
 - A, B6, D, niacin, iron, selenium, etc
- Large doses of any vitamin can cause symptoms of vitamin deficiency
- Smokers who take beta-carotene supplements are at GREAT risk of lung cancer

Can vitamin supplements be harmful?

- Beta-carotene supplements are not recommended for the general public
- Vitamin D toxicity can lead to thinning of bones and has been reported in patients with osteoporosis who use several nonprescription dietary supplements
- MORE IS NOT BETTER

Can vitamin supplements be harmful?

- Large doses of vitamin A can cause birth defects
- Large doses of vitamin E can interfere with the action of vitamin K which causes anticoagulant drugs to become more potent
 - very dangerous
- Too much folic acid can be dangerous if taken with seizure medication

Good nutrition comes in food not vitamin pills

- Cancer or other diseases are not prevented only by vitamins, minerals, or antioxidants
- Science has not identified all of the reasons that a balanced diet prevents disease therefore a pill cannot be made to take the place of food
- There are over 900 phytochemicals. They cannot all be put into one pill

Good nutrition comes in food not vitamin pills

- Pills can only provide a selected phytochemical in a concentrated form and not the diversity of substances that are found naturally in food
- Animal studies have shown that high doses of certain phytochemicals can have detrimental effects and can be unsafe

Good nutrition comes in food not vitamin pills

- There are so many substances in foods and it is hard to identify the ones responsible for positive health benefits
- When phytochemicals are taken out of food they may differ from the forms that occur naturally in foods which means they do not have the same effects on the body

Good nutrition comes in food not vitamin pills

- Americans spend about \$2.5 billion a year on vitamin/mineral supplements and cancer rates are not going down



Are there special diets that can prevent or cure cancer?

- No!
- Hallelujah diet
- Macrobiotic diet
- Juicing



How can we get 5 A Day?

- Fruit juice at breakfast
- Fruit on breakfast cereal
- Snack on dried fruit, fresh fruit or vegetables or vegetable juice at work
- Have a salad or vegetable with lunch
- Have a vegetable with dinner

Other benefits of 5 A Day

- Vegetables are very low in calories!
 - 1/2 cup raw is only 25 calories
 - it will fill you up more than a bag of chips
- Its easier to loose weight and keep it off if you fill up on fruits and vegetables during the day instead of junk food
- Get the benefits of fiber too

Questions?

