

processes. For example, it is needed in regulating the growth of cells. Animal studies have found that a lack of calcium leads to excessive cell growth in the colon. It is not clear if calcium has a cancer preventive benefit for humans. Still, since it is important to the body in so many other ways, everyone should get enough calcium in the diet. All adults should have 1000 mg per day. After menopause, females have a greater risk of osteoporosis (loss of calcium causing bones to weaken), and they should have 1500 mg of calcium a day.

A quart of milk a day provides adequate calcium. Most people do not drink a quart of milk everyday, but there are other sources of calcium. Dairy products (such as cheeses and yogurt), shellfish, seafood and many leafy green vegetables contain calcium. The calcium in leafy vegetables is not as available for use by the body as calcium in milk. Some people on low calorie or special diets may not be able to get enough calcium in their diets. In these cases, the physician can recommend a calcium supplement. Calcium carbonate is the best and least expensive.

### Aspirin

Some, but not all, medical studies show that the incidence of cancer of the colon may be less in those people who take aspirin regularly. It is known that prostaglandin (a hormone-like substance produced by the body) may promote excessive or abnormal cell growth in the intestine. Aspirin appears to interfere with prostaglandin, which may account for a possible role in preventing colon cancer.

Aspirin can cause stomach ulcers, serious bleeding or hemorrhagic strokes, so it should only be taken with the approval of a physician.

### Other Factors

The large nurse's study, mentioned before, has shown other factors that appear to be related to colon cancer.

*Cigarette Smoking*—Long-term smokers had more colon cancer than non-smokers

*Leisure Time Activities*—Those nurses who were more active in their daily lives had fewer cancers

*Estrogen*—Those nurses who continued to use estrogen hormones had fewer cancers. However, it is not recommended that you take estrogen just for this possible reason

### Summary

1. Genes—if there is colon cancer or polyps in your family, have a colonoscopy to detect early cancer or removal of polyps
2. Surveillance—yearly stool exam for hidden blood and sigmoidoscopy (short exam) every 5 years or colonoscopy every 10 years or so, starting at age 50
3. Remove polyps when found, a polyp that is removed cannot become cancer
4. Diet—eat a diet high in yellow, red and orange fruits and vegetables, low in meats and saturated fats and high in fiber
5. Calcium—1,000 to 1,500 mg a day from diet or supplements
6. Folic Acid—take a daily supplement or multivitamin with at least 400 mcg of folic acid
7. Aspirin—may be helpful but should be discussed with physician
8. Keep an active lifestyle – walk, exercise
9. Do not smoke cigarettes
10. Estrogen hormones

**See the separate brochure, Colon Polyps and Cancer, for a full description of these conditions.**

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## PREVENTION OF COLON POLYPS AND CANCER

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## Prevention of Colon Polyps/Cancer

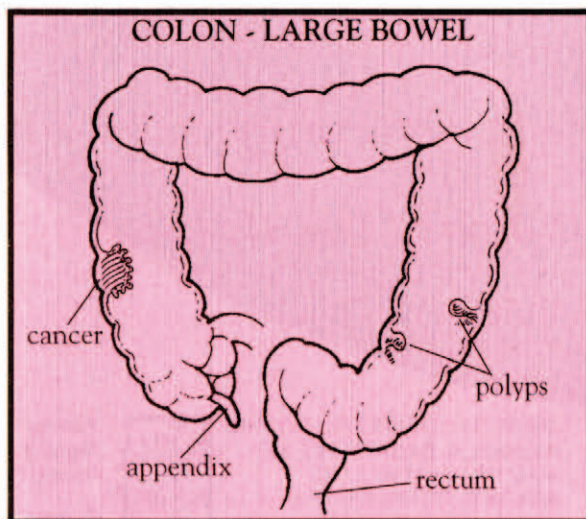
The colon is the large intestine. It begins where the small intestine ends, near the appendix inside the right lower abdomen. The colon extends in a wide loop, up the right side of the abdomen to the liver, and across to the left side of the abdomen where it turns down connecting finally to the rectum.

## Polyps and Cancer

Polyps are growths that form on the inside lining of the colon. They are usually shaped like mushrooms or dome-like buttons, and vary in size from a tiny pea to larger than a plum. While colon polyps start out as benign tumors, certain types of polyps (called an adenoma or adenomatous polyp) may turn into cancer. The risk is greater as the polyp gets larger. Adenomatous polyps can be removed before they become cancerous with a procedure called colonoscopy. Under light sedation, a lighted flexible tube is inserted into the colon, allowing the physician to see the inside of the colon and remove polyps.

## Causes and Risks

The complete cause of polyp formation and colon cancer is unknown, but it is known that



heredity plays a key role. Certain genes seem to prevent colon cancer from developing. Some people may lose these protective genes. A person whose parents, brothers or sisters have colon cancer or polyps is at significantly greater risk of developing it. There is also risk, but to a lesser degree, if uncles, aunts or grandparents have had the disease. Therefore, people with a family history of polyps and colon cancer should be evaluated by their physician and examined regularly.

## Prevention

### Diet

It only makes sense that a disease that originates in the gut should somehow be related to diet. While genetic factors are probably the most important, let's look at the effects of diet.

### Vegetables and fruits

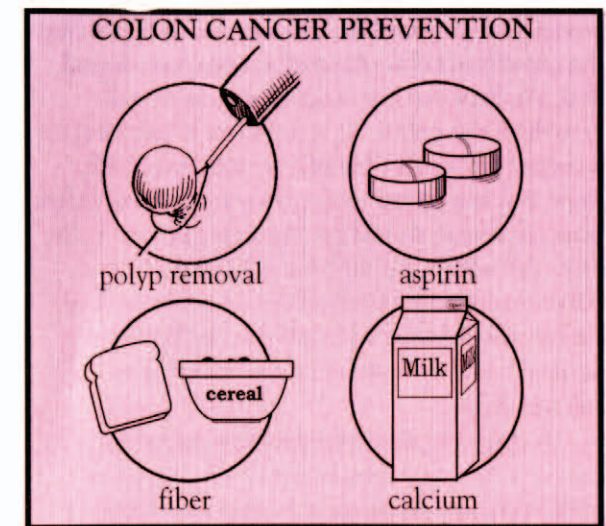
The red, yellow, orange and green colored fruits and vegetables such as peppers, oranges, strawberries, and carrots are particularly rich in a complex mixture of substances called antioxidants. The cruciferous vegetables (cabbage, Brussels sprouts, broccoli) have very high levels of natural cancer fighting chemicals. Brussels sprouts and broccoli are exceedingly high in these. There is increasing medical data that people who eat these foods plus generous amounts of unprocessed grains have less colon cancer. There is no medical evidence that taking antioxidant supplements such as vitamin C and E and betacarotene is helpful.

### Folic Acid

Data was published in 1999 which studied a large group of nurses over a 14 year period. Folic acid or folate seemed to be very protective for these females especially those who received over 400 micrograms a day from food and/or a multivitamin. It may also be of benefit in colon cancer prevention.

### Meats and saturated fats

Meat contains saturated fat as do many prepared products such as ice cream and especially



non-animal foods such as pastries, sauces, etc. Always read the food labels to see how much saturated fat a food contains. These fats are broken down by the body's digestive juices and bile. Some of these byproducts are known to cause cancer in laboratory animals. There is some evidence that meat rich diets may increase the risk of breast cancer but this has not been shown in colon cancer. Nevertheless, a reduced meat and saturated fat diet probably contributes to colon health to some extent.

### Fiber

Studies in the 1960's and 1970's seemed to relate a fiber rich diet with reduced colon cancer in rural Africans. However, the hope that it could reduce colon cancer risk has been called into question by a large study of nurses who had little or no change in developing colon cancer or polyps even when eating up to 25 grams of fiber a day. This is just one study and the positive health benefits of high fiber foods are many, so these foods are still highly recommended.

### Calcium

Calcium is one of the most common minerals in the body. It is necessary for bone strength and for many of the body's important chemical