

NUTRITION & COLON CANCER

Charles H. Taylor, MD

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Colon Cancer Research Progresses

Colorectal cancer is the third most common cancer in America, for both men and women. Since diet appears to play a role in many cases, scientists are trying to determine which dietary and lifestyle traits may lower risk for this disease. Below are two AICR-funded researchers who are currently conducting colon cancer research in Maryland.

Comparing Blood Insulin Levels

Elizabeth A. Platz, Sc.D., M.P.H., works in the Department of Epidemiology at Johns Hopkins University in Baltimore. She is studying whether high insulin levels in the blood raise the risk of colorectal cancer and a certain type of polyp called an adenoma, which can become cancerous if not removed.

Since 1989, Dr. Platz and her colleagues have been following the diets, lifestyles and cancer rates of 25,000 men and women. To date, about 160 people have developed colon cancer and about 210 have developed adenomas. Dr. Platz will compare the rates of obesity, diabetes, sedentary lifestyles and low-fiber diets in these participants (also called "cases") to "controls" of the same age, sex and race who do not have colon cancer or adenomas. "The three major conditions that seem to lead to a higher risk of developing colorectal cancer - obesity, inactivity and adult-onset diabetes - all involve high blood insulin levels," she notes.

If obesity, for example, is found to be more frequent among cases than controls, this will bolster existing evidence that obesity raises the risk of colon cancer. Maintaining a healthy weight, staying physically active and eating plenty of fruits, vegetables and unrefined grains all help to keep insulin at normal levels, says Dr. Platz.

Does Aging Change Our Responses to Dietary Supplements?

At the University of Maryland at College Park, Bernadene Magnuson, Ph.D., is investigating the cancer-preventive effects of curcumin, a natural plant substance found in curry, mustard and turmeric. Young animals who are fed curcumin have been found to develop fewer types of cancer, including colon cancer. But scientists don't know whether curcumin protects older animals equally well. "This is an important issue because the majority of colon cancers occur in individuals over 60," Dr. Magnuson explains.

She is studying three age groups of rats: young, mature and aged. Some are fed curcumin; others are not. Dr. Magnuson will see which rats develop colon cancer after exposure to a chemical carcinogen. She will also find out whether the different age groups respond differently to curcumin.

Dr. Magnuson suspects that aging may change the body's response to protective dietary supplements. Aging changes the functioning of many body systems, like the kidneys and digestive system, so dietary factors like curcumin may be absorbed or used less efficiently in older individuals. Since other dietary substances (like fiber and flavonoids) may act like curcumin in body cells, Dr. Magnuson's data may provide significant insights into the mechanisms of other cancer-protective substances as well.