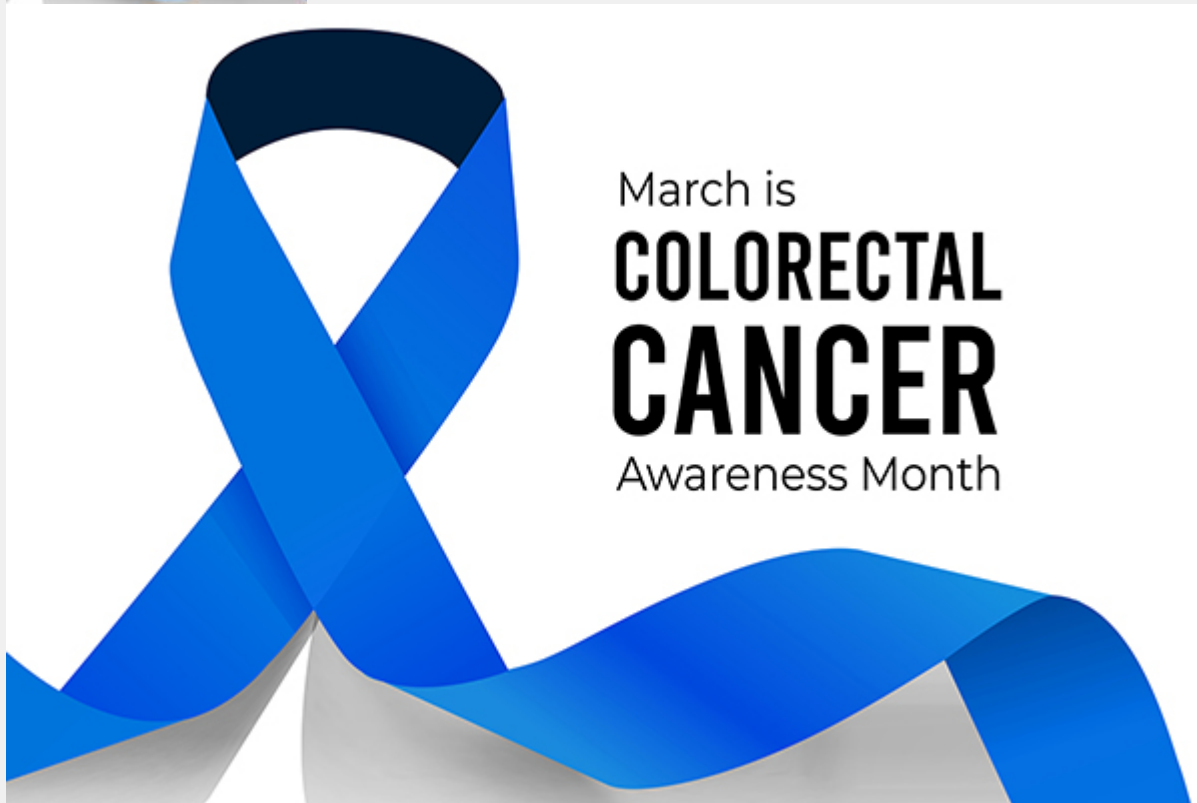


Diet and colon cancer: It's complicated!



March is **National Colorectal Cancer Awareness Month**. There's a special emphasis on prevention because the incidence of GI cancers, traditionally thought of as an affliction of the aged, is soaring among younger people, as was dramatically highlighted by the untimely death in 2020 of actor Chadwick Boseman at the age of 37.

It's suspected that diet has something to do with the disturbing trend. The **oft-cited recommendations** are to cut down on red meat and increase fiber, particularly from whole grains and fruits and vegetables.

As early as the 1970s, when I was earning brownie points toward medical school admission while working at St. Luke's Hospital in New York City, I participated in a study in which I was asked to submit stool samples. At the time I was a vegetarian, and even then it was posited that something about meat rendered the bowel "toxic" and contributed to colorectal cancer risk. It's unclear if the study was ever published, or if so, led to firm conclusions.

But the proposition that avoidance of meat lowers colon cancer risk has legs, and was recently reiterated: Headlines just announced "Eating less than 5 servings of red meat weekly lowers cancer risk"; The study in question concluded "*Being a low meat-eater was associated with a lower risk of colorectal cancer in comparison to*

regular meat-eaters”.

What was surprising about the study was the relatively small degree of protection conferred by meat avoidance. Overall it was anywhere between 4% to 14% reduction in colorectal cancer risk (the press accounts naturally opted for the more impressive number).

But there are some caveats. An examination of the study reveals that the benefits of meat avoidance were seen in men, but not in women, for reasons that are unclear. There was also some concern that eating meat was simply a proxy for overweight, which is a known risk factor for colorectal cancer. But the study authors claim to have adjusted for the effects of BMI with a statistical method.

Unfortunately, the study did not distinguish between the consumption of unprocessed vs. processed meat, which the World Health Organization and others **have claimed contributes to colorectal cancer risk**, due in part to its delivery of carcinogenic nitrosamines.

At least one previous study did differentiate among types of meat, concluding, *“Thus, in these two large cohorts of US health professionals, processed meat intake was positively associated with risk of colorectal cancer, particularly distal cancer, with little evidence that higher intake of unprocessed red meat substantially increased risk of colorectal cancer.”*

There’s also the problem that plagues most of these diet studies: Being a vegetarian might simply be a marker for healthier lifestyle choices overall.

Previous studies have delivered mixed messages on the value of red meat avoidance. One, based on a MEDLINE search from January 1966 to December 2006 for articles on the relationship between diet and colorectal cancer concluded, *“Whether red meat is a culprit in causing colorectal cancer remains unanswered, although any effect it might have is likely moderate and related to processing or cooking.”*

It is often advised that colorectal cancer patients eschew red meat to improve their likelihood of survival. But does it make a difference?

A recent (Feb. ‘22) study suggests it may not. In fact, unprocessed meat consumption resulted in a slightly lower recurrence rate in Stage 3 colorectal cancer patients, although the reduction did not reach statistical significance; even processed meat consumption did not raise the risk of recurrence.

Nor did a patient’s previous diet: *“Intake of red and processed meat before a diagnosis of colorectal cancer was not associated with shorter survival time after diagnosis.”*

But diet undoubtedly has an impact on the likelihood of colorectal cancer—it’s virtually unknown in pre-industrial non-Western countries. Some of these populations consume lots of meat (unprocessed), others little. What they have in common is freedom from an onslaught of ultra-processed chemicalized food and refined carbohydrates, along with reliance on plentiful fresh fruits and vegetables, naturally fermented foods and, in some instances, whole grains.

Many studies have explored the role of fiber, which is said to increase intestinal transit time and nourish the microbiome with prebiotics. One study concluded, *“individuals consuming the highest intakes of dietary fiber have reduced risks of incident colorectal adenoma and distal colon cancer and that this effect of dietary fiber, particularly from cereals and fruit, may begin early in colorectal*

carcinogenesis."

But other studies, while acknowledging the benefits of fiber, reach seemingly contradictory conclusions. One concludes that, *"Fiber from grains, but not other sources, was associated with lower incidence of [colorectal cancer]."* Another states, *"Individuals who consumed less than 1.5 servings of fruit and vegetables per day had a relative risk for developing colorectal cancer of 1.65 compared with individuals who consumed more than 2.5 servings. We observed no association between colorectal cancer risk and the consumption of cereal fiber, even at amounts substantially greater than previously examined."*

While lots of ink has been expended on the alleged contributions of meat and fat to colorectal cancer risk, the focus may be misdirected. In the large **Women's Health Initiative study**, a low-fat dietary pattern did not afford protection against colorectal malignancies.

Part of the reason may be the known accelerant effect of sugars on cancer proliferation. It's been established that sugary beverages may raise risk of early colorectal cancer. That might explain the frightening uptick in intestinal cancer incidence among the young.

It might be that, not just sugar, but excess carbohydrates from starchy foods, contribute to colorectal cancer risk. Supporting that notion is a large study entitled **"Dietary Glycemic Load and Cancer Recurrence and Survival in Patients with Stage III Colon Cancer"** The authors conclude: *"Higher dietary glycemic load and total carbohydrate intake were statistically significantly associated with an increased risk of recurrence and mortality in stage III colon cancer patients."* Other studies have confirmed the relationships between excess dietary carbohydrates and colorectal cancer risk in men.

It's been theorized that carbohydrates cause harmful intestinal microbes to proliferate; their metabolites may stimulate growth of cancer cells in the intestine. The authors of one study conclude, *". . . our findings suggest that a diet reduced in carbohydrates as well as alterations in the intestinal microbial community could be beneficial to those individuals that are genetically predisposed to colorectal cancer."*

As for dairy, once suspected of being a cancer instigator, the latest studies appear to exonerate it. A 2020 review concludes: *" . . . we found 29% lower risk of death from colorectal cancer in subjects with high dairy consumption compared with those with low intakes of dairy products."*

Finally, there are the potential carcinogenic effects of pesticides and agricultural chemicals. Brazil is a country that has wholeheartedly embraced pesticide use on its crops; A study speculates that consuming these foods may be contributing to the astounding rise of colorectal cancer among Brazilians.

Another review focused on the relationship between colorectal cancer and exposures to agricultural chemicals among farmers, pesticide applicators, pesticide manufacturers, spouses of pesticide applicators, farm residents, Korean veterans of the Vietnam War, rural communities, and *those who consumed food with pesticide residues*. It concluded that there was substantial evidence of an association.

The dietary take home for colorectal cancer prevention:

- Avoid processed meat (probably); Unprocessed meat consumption is likely ok in moderation

- Consume lots of fresh fruits, vegetables, and spices, rich in fiber and colorful and flavorful polyphenols
- Encourage healthy fats. Fish and nuts may impart protective effects. Minimize seed oils
- Reduce sugars and high-glycemic-index carbohydrates
- Minimize agricultural chemical exposure by choosing organic foods
- Ditch ultra-processed foods which may disrupt the microbiome
- Follow whatever diet helps you to optimize weight, since obesity is a major risk factor