

# Sugary Drinks Linked to Tumor Growths in the Colon

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

## STORY AT-A-GLANCE

- › Recent data show the risk of colon cancer in young adults is rising and may be related to consuming just 16 ounces of sugar-sweetened beverages each week
- › The study found artificial sweeteners have a different kind of risk. Instead, these toxins increase your risk of all-cause mortality and cardiovascular disease, and increase the risk of beneficial bacteria in the gut becoming pathogenic
- › Vitamin D deficiency is also associated with a higher risk of colorectal cancer. Although most doctors recommend a colonoscopy screening, consider the importance of weighing your personal risk factors against the risks associated with testing
- › You may reduce your overall risk of colorectal cancer by eating more vegetables, maintaining optimal levels of vitamin D, eating more fiber, exercising and maintaining a healthy weight

Excluding non-melanoma skin cancers, colon and rectal cancers are the third most common types of cancer diagnosed each year in the U.S.<sup>1</sup> Scientists have identified several modifiable factors that increase your risk of colorectal cancer, and the most current link is sugar-sweetened drinks, which are very popular in the West.<sup>2</sup>

Colon and rectal cancers are the third leading cause of death from cancer in men and women, or the second leading cause if you combine the two.<sup>3</sup> The American Cancer Society (ACS) estimates there will be 149,500 new cases of colorectal cancer diagnosed in 2021. Experts expect 52,982 to die in 2021 from colorectal cancer.

Although colorectal cancer numbers have been dropping in older adults for the past couple decades because of increased testing and lifestyle changes, scientists believe that this downward trend is masking a rising number of younger adults who are being diagnosed with it.<sup>4</sup>

In a paper published by the ACS in 2017,<sup>5</sup> researchers looked at incident patterns from 1974 to 2013. They wrote that “nearly one-third of rectal cancer patients are younger than age 55 years,”<sup>6</sup> which fueled headlines and recommendations that younger people should consider colon cancer screening.

However, it’s not clear whether increasing the number of screenings could reduce the number of people who are diagnosed, as it’s a mistake to equate screening with prevention. This is especially true since the ramifications of poor diet and sedentary behavior are catching up at an increasingly younger ages.

So, instead of signaling a need for more testing, the rising number of young adults diagnosed with colorectal cancer should be a wake-up call to reassess your lifestyle. In fact, data from the featured study demonstrate the impact one dietary choice can have on your risk of colorectal cancer.<sup>7</sup>

## **Sugary Drinks Increase Risk of Colon Cancer in Young Adults**

In this study, a team of researchers from Washington University School of Medicine,<sup>8</sup> used data from the national Nurses’ Health Study II to evaluate the relationship between sugar-sweetened beverages and the increasing number of individuals younger than 55 diagnosed with colorectal cancer.<sup>9</sup>

There were 95,464 women aged 25 to 42 who reported their beverage intake from 1991 to 2015.<sup>10</sup> They also examined data from a subset of 41,272 nurses who used a validated high school food frequency questionnaire to report their beverage intake when they were aged 13 to 18.

During the 24-year prospective study, the researchers documented 109 early-onset colorectal cancers in the group. After analyzing the data, they found that individuals who

drank two or more 8-ounce servings<sup>11</sup> each week of a sugar-sweetened beverage more than doubled their risk of diagnosis as compared to people who drank less than one **sugar-sweetened beverage** each week.<sup>12</sup>

The results also appeared to show that the earlier individuals began drinking sugar-sweetened drinks, the higher the risk of early-onset colorectal cancer. In adults, with every additional 8-ounce beverage they drank each week, it increased their risk 16%. However, in the adolescent group, for every additional sugar-sweetened drink each week, their risk of developing the cancer before age 50 rose by 32%.<sup>13</sup>

The data also showed that when individuals replaced one sugar-sweetened drink with coffee, tea or artificially sweetened beverages, their risk reduced from 17% to 36%. However, as I discuss below, there are additional and dangerous health risks outside of colorectal cancer that are associated with artificial sweeteners.

Caroline H. Johnson is an epidemiologist at the Yale School of Public Health whose interest lies in the environmental risks associated with colorectal cancer. She was not involved in the study but spoke to a reporter from The New York Times about the results, saying,<sup>14</sup> "I was really interested to see that the study was on women. The focus has mostly been on males. It will be interesting to see if it's confirmed in men."

Interestingly, the researchers did not find an association between drinking fruit juices and early-onset colorectal cancer. During the analysis, the scientists controlled for a variety of external factors that also affect risk, including hormonal use during menopause, smoking, alcohol, race and physical activity.<sup>15</sup>

One of the researchers commented that while **weight gain** is a known risk, their analysis controlled for obesity, suggesting the statistical association they found is outside the independent risk of obesity. Senior author Yin Cao, associate professor of surgery and medicine, commented on the results:<sup>16</sup>

*"Despite the small number of cases, there is still a strong signal to suggest that sugar intake, especially in early life, is playing a role down the road in increasing adulthood colorectal cancer risk before age 50.*

*This study, combined with our past work linking obesity and metabolic conditions to a higher risk of early-onset colorectal cancer, suggests that metabolic problems, such as insulin resistance, may play an important role in the development of this cancer in younger adults."*

## **Artificial Sweeteners Also Carry Significant Risks**

Although the featured study did not look for a link between artificial sweeteners and colorectal cancer, past research has confirmed that **artificial sweeteners** have a significantly negative effect on your health.

For example, one French study<sup>17</sup> found people who drank just 6.26 ounces or more each day of sugar-sweetened soda had a higher risk of cardiovascular events over 6.6 years of follow-up<sup>18</sup> – but people who drank 5.97 ounces of artificially sweetened beverages experienced a similar increase in cardiovascular disease.

Additionally, these sugar substitutes have a variety of metabolic effects, including a negative impact on your gut microbiome. One recent molecular research study<sup>19</sup> from Anglia Ruskin University<sup>20</sup> discovered that popular artificial sweeteners, including sucralose (Splenda), aspartame (NutraSweet, Equal and Sugar Twin) and saccharin (Sweet'n Low, Necta Sweet and Sweet Twin) have a pathogenic effect on two types of gut bacteria.

When *E. coli* and *E. faecalis* become pathogenic, they kill Caco-2 cells that line the wall of the intestines. Data from the study showed a concentration from two cans of diet soft drinks significantly increased the ability of *E. coli* and *E. faecalis* to adhere to the Caco-2 cells and increase the development of bacterial **biofilms**.<sup>21</sup>

One animal study<sup>22</sup> published in the journal *Molecules* analyzed six artificial sweeteners including saccharin, sucralose, aspartame, neotame, advantame and acesulfame potassium-K. The data showed they all caused DNA damage in, and interfered with, the normal and healthy activity of gut bacteria.

Another study<sup>23</sup> showed a link between **artificially sweetened soft drinks** and death from circulatory diseases and an association between sugar-sweetened soft drinks and death from digestive diseases.<sup>24</sup> And, a study published in April 2021<sup>25</sup> confirmed earlier rodent studies that showed “aspartame is a chemical carcinogen” that can increase the risk of cancer in offspring that are exposed to it in utero.

This suggests that policies aimed at cutting or reducing sugar consumption may have disastrous consequences when manufacturers reformulate their products using artificial sweeteners.

## **Vitamin D Deficiency in Older Adults Linked With Colon Cancer**

New evidence published in BMC Public Health<sup>26</sup> revealed an aged dependent inverse link between exposure to ultraviolet B (UVB) light and the incidence of colorectal cancer. The data were gathered over 186 countries using UVB estimates and the incident rates of colorectal cancer.

The researchers made the association between UVB light and the manufacturer of vitamin D in the body since vitamin D has limited dietary sources. Inadequate vitamin D status has been identified as a risk factor in the development of colorectal cancer and has a potential protective action.

Past research demonstrates that taking at least 1,000 international units of vitamin D each day can reduce the risk of colorectal cancer by up to 50%.<sup>27</sup> While analyzing the data, the researchers accounted for factors that may affect the results, such as smoking, skin pigmentation and age.<sup>28</sup>

The authors suggested that lower UVB exposure may lower an individual's levels of vitamin D. Since deficiency has been associated with an increased risk of colorectal cancer in the past, the researchers used UVB data to estimate vitamin D levels. Lack of exposure to UVB was correlated with higher rates of colorectal cancer in all age groups living in all countries that were included in the study.

However, the association between lower exposure and **higher risk of cancer** was more significant in those over age 45. Raphael Cuomo, Ph.D., is a public health scientist from the University of California, San Diego, and co-author of the current study. He commented in a press release:<sup>29</sup>

*"Differences in UVB light accounted for a large amount of the variation we saw in colorectal cancer rates, especially for people over age 45. Although this is still preliminary evidence, it may be that older individuals, in particular, may reduce their risk of colorectal cancer by correcting deficiencies in vitamin D."*

## **Risks Associated With Screening Tests**

The **risk of colorectal cancer** must be balanced against the risk of the testing procedures. Depending on the data source, the risk of death from a colonoscopy may be 1 out of every 16,318 procedures<sup>30</sup> to 1 out of every 1,000 procedures.<sup>31</sup> As of 2018, there were nearly 19 million colonoscopies being performed each year in the U.S.<sup>32</sup>

This means if you use the lower comparison of 1 in every 1,000, as many as 19,000 Americans may die as the result of a routine screening test. According to on paper, serious complications, injury or death from a colonoscopy is 0.5%, or about 95,000 per year.<sup>33</sup>

An alternate method of testing for colorectal cancer, virtual colonoscopy, appears to have minimal risk. However, the X-ray exposure from a virtual colonoscopy raises your lifetime risk of all forms of cancer by 20%.<sup>34</sup> As noted by GutSense.org:<sup>35</sup>

*"Virtual colonoscopies are now recommended every five years. By age 70 one's risk of developing any other form of cancer grows to 100 percent. Killing you with another form of cancer before the colon gets affected is one hell of [a] way to 'prevent' colon cancer."*

Aside from the chance of death, other **risks of colonoscopy** include:<sup>36</sup>

- Perforation of the colon, which occurs at a rate of 0.9 out of every 1,000 procedures.<sup>37</sup> Research<sup>38</sup> shows the risk of death after a perforation was 51.9 per 1,000 colonoscopy perforations and 64.5 per 1000 sigmoidoscopy perforations.
- Dysbiosis and other gut imbalances, caused by the process of flushing out your intestinal tract before the procedure with harsh laxatives.<sup>39</sup>
- Complications from the anesthesia.<sup>40</sup> In addition to the expected complications from anesthesia, during a colonoscopy anesthesia increased the risk of complications by 13% within 30 days after the procedure and specifically was associated with an increased risk of perforation.
- Infections caused by poorly disinfected scopes.<sup>41</sup>

## Tips to Prevent Colorectal Cancer

Data show there are non-modifiable and modifiable risk factors for colorectal cancer.<sup>42</sup> Some of the non-modifiable risk factors include race, sex, age, inflammatory bowel disease and abdominal radiation. Modifiable risk factors are those over which you have control and may reduce your risk of colorectal cancer.

These include obesity, **physical activity**, diet, smoking, alcohol and certain medications. People with diabetes and insulin resistance also have an increased risk related to the metabolic shift that promotes carcinogenic activity.<sup>43</sup>

Below are several diet and fitness suggestions that may significantly lower your risk of colorectal cancer, regardless of your age:

**Eat more vegetables** — Vegetables contain an array of antioxidants and other disease-fighting compounds that are very difficult to get anywhere else, such as magnesium. Results from one meta-analysis indicated that higher intakes of magnesium resulted in a lower risk of colorectal cancer.<sup>44</sup>

---

**Eat more fiber** — For optimal health, I recommend getting about 50 grams of fiber per 1,000 calories. If you follow the tip above and eat more vegetables, you'll

naturally be eating more fiber from the best possible source.

---

**Optimize your vitamin D level** – Vitamin D deficiency is a risk factor for colorectal cancer. Sensible ultraviolet exposure, ideally from the sun, and/or vitamin D3 supplementation can get your vitamin D levels into the optimal range of 45 to 60 nanograms per milliliter (ng/mL). You'll need to monitor your level to be sure you stay within this target range.

---

**Lower your protein intake and avoid processed meats entirely** – Most Americans **eat far more protein** than they need, thereby raising their risk for cancer. A more ideal protein intake is likely around one-half gram of protein per pound of lean body mass. Avoid processed meats of all kinds.

---

**Get regular exercise** – There's convincing evidence that regular exercise can significantly reduce your risk of colon cancer.<sup>45</sup> For instance, one study<sup>46</sup> showed physically active men and women have about a 30% to 40% reduction in the risk of developing colon cancer compared with inactive persons.

---

**Maintain a healthy weight and control belly fat** – Several studies have linked obesity to an increased risk for about a dozen different cancers, including colon cancer. Losing excess belly fat is particularly important, as belly fat is linked to an increased risk of colon cancer regardless of your body weight.<sup>47</sup>

---

**Limit alcohol and quit smoking** – Both **excessive alcohol intake** and **smoking** are associated with an increased risk of colorectal cancer.

---

**Eat more garlic** – Research has shown those who consume high amounts of raw garlic have a lower risk of stomach and colorectal cancers.<sup>48</sup>

---

**Drink soursop tea** – Drinking tea made from soursop leaves may help reduce the risk of colon cancer. A PLOS One study<sup>49</sup> notes that the leaves contain a compound named "annomuricin E," which has apoptosis-inducing effects against colon cancer cell lines.

---

## Sources and References

---

- <sup>1</sup> National Cancer Institute, Common Cancer Types
- <sup>2, 9, 12</sup> Gut, 2021; doi.org/10.1136/gutjnl-2020-323450
- <sup>3, 4</sup> American Cancer Society, January 12, 2021
- <sup>5, 6</sup> Journal of the National Cancer Institute, 2017; doi.org/10.1093/jnci/djw322
- <sup>7, 11, 15</sup> The New York Times, July 5, 2021
- <sup>8, 13, 16</sup> Science Daily, May 6, 2021
- <sup>10</sup> The New York Times, July 5, 2021, para 4
- <sup>14</sup> The New York Times, July 5, 2021, para 7
- <sup>17</sup> Journal of the American College of Cardiology, 2020;76(18)
- <sup>18</sup> MedPage Today, October 26, 2020
- <sup>19</sup> International Journal of Molecular Sciences, 2021;22(10)
- <sup>20, 21</sup> Medical Xpress, June 25, 2021
- <sup>22</sup> Molecules 2018; 23(10): 2454
- <sup>23</sup> JAMA Internal Medicine, 2019;179(11)
- <sup>24</sup> JAMA, 2019, doi:10.1001/jamainternmed.2019.2478, Soft Drink Consumption and Cause-Specific Mortality
- <sup>25</sup> Environmental Health Article number: 42 (2021) April 12, 2021
- <sup>26</sup> BMC Public Health, 2021; 21(1238)
- <sup>27</sup> The Journal of Steroid Biochemistry and Molecular Biology, 2005;97(1-2)
- <sup>28</sup> New Atlas, July 4, 2021
- <sup>29</sup> EurekAlert! July 4, 2021
- <sup>30, 33, 37</sup> Annals of Internal Medicine 2006 Dec 19;145(12):880-6
- <sup>31</sup> Nutrition Facts, November 23, 2015
- <sup>32</sup> iData Research, August 8, 2018
- <sup>34</sup> GutSense.org, Colonoscopy: Is it Worth the Risk?
- <sup>35</sup> GutSense.org, Colonoscopy: Is it Worth the Risk? Key highlights from part 1 bullet 3
- <sup>36</sup> The Atlantic June 29, 2015
- <sup>38</sup> Journal of the National Cancer Institute 2003; 95(3): 230-236
- <sup>39</sup> Scientific Reports, 2019;9(4042)
- <sup>40</sup> Gastroenterology, 2016;150(4)
- <sup>41</sup> Clinical Microbiology Reviews, 2013;26(2)
- <sup>42, 43</sup> Prz Gastroenterology, 2019;14(2)
- <sup>44</sup> The American Journal of Clinical Nutrition September 2012
- <sup>45</sup> Journal of Nutrition 2002;132(11):3456S
- <sup>46</sup> Medicine & Science in Sports & Exercise: November 2003; 35(11): 1823-1827
- <sup>47</sup> PLOS|One, 2014;9(11)
- <sup>48</sup> American Journal Clinical Nutrition, 2000;72(4):1047
- <sup>49</sup> PLOS One, 2015;10(4):e0122288