

Do Sugary Drinks Cause Cancer?



By Angela Dowden — July 14, 2019



Image: MedicalNewsToday [1]

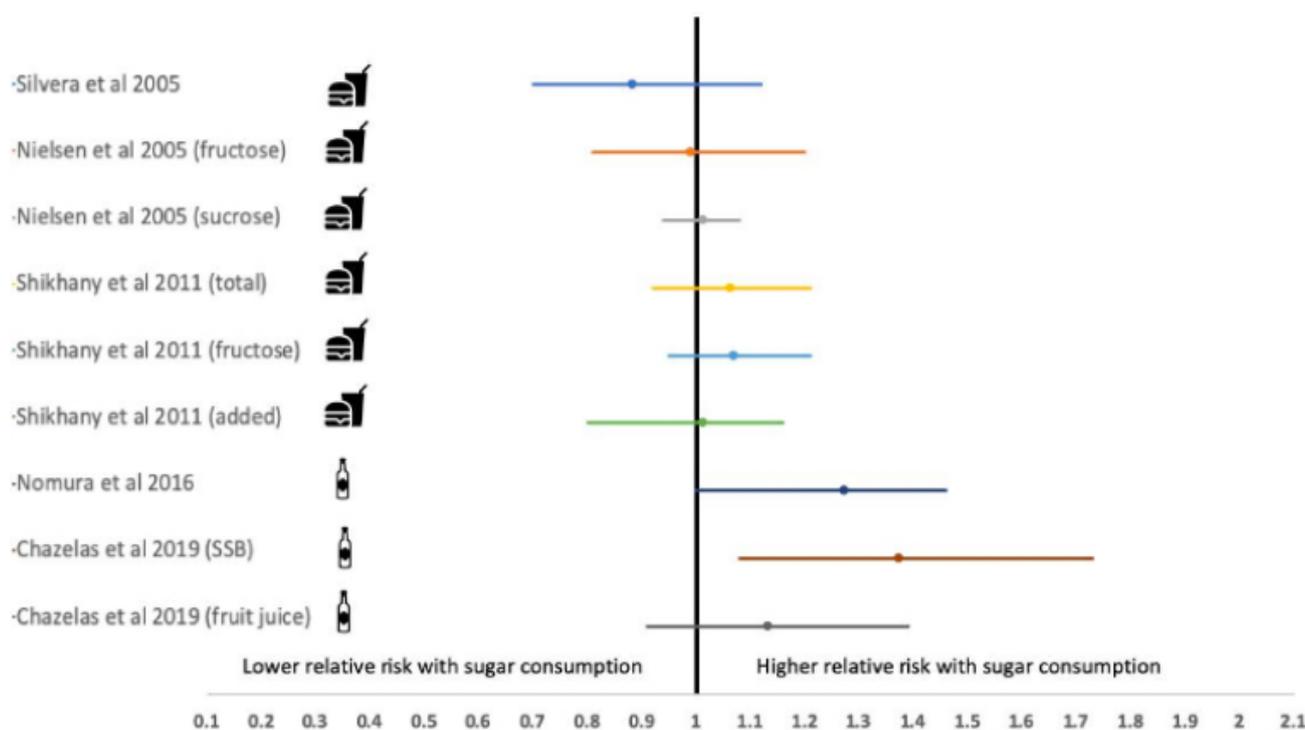
“Small glass of juice or soda a day can increase cancer risk” screamed a recent CNN headline... “Just ONE drink of fruit juice or sugary tea a day can dramatically increase the risk of cancer, major study suggests,” was DailyMail.com’s take.

The study behind the headlines is [here](#) [2], and in context, it’s a valid contribution to the science on sugar, health, and disease.

But that’s just it: in context.

There have been a pile of observational studies looking at the correlation between sugar and cancer over the past decade-and-a-bit, nicely summarized in [this systematic review](#) [3] from 2018. But it’s always recommended to find out where the latest study fits into the overall research jigsaw, and this neat little graph from [@dnunan79](#) [4] on Twitter does this really nicely:

Update of systematic review evidence from observational studies assessing the relative risk of breast cancer with sugar consumption (in food or drink) incorporating latest study by Chazelas et al 2019



In the graph, Nunan has added the new results (Chazelas et al 2019) to the pre-existing evidence from the 2018 systematic review, specifically for breast cancer and sugar consumption (which is where the link seems strongest – more on this later).

As the graph shows, most previous studies investigating breast cancer and sugar have shown pretty much no association when looking at sugars as a whole from food and drink, but suggestive detrimental associations with sugary beverages.

Does the latest study add weight to the suggestion that sugary beverages uniquely increase cancer risk? Maybe, maybe not.

Let's look at the study in a little depth. Coming out of the NutriNet-Santé research group in France, it was big and well designed. It monitored the diet and lifestyle of over 100,000 French adults for up to nine years and collected food intake records in a more robust way than many dietary assessment studies. Rather than a "what did you eat yesterday?" approach, participants did three-day records repeated every two years.

All drinks with more than 5% sugar were considered sugary drinks in the study, including pure fruit juices, sodas, energy drinks, sugar-added hot drinks and milkshakes. The researchers followed the participants over time to see whether those who drank more of these drinks were more likely to develop cancer.

The results showed that for breast cancer specifically (the group was 78% female) pre-menopausal women who recorded the highest intakes of sugary drinks had a 28% increased risk; in post-menopausal women, it was a 44% increase. (For colorectal or prostate cancers, no association was found.)

When looking at cancer overall, each additional 100 mL of any sugary drink a person drank a day was associated with an 18% increased cancer risk.

An 18% increase in risk corresponds to 4 extra cases of cancer per every 1000 people over a 5-year period. In other words, if 1000 similar participants increased their daily sugary drink intake by 100 mL, the results might predict a rise in cancer cases from 22 to 26 per 1000 people over a 5-year period.

Of course, this assumes that there is a genuine causal link between sugary drink intake and developing cancer. Do we have enough information to infer this? No, we don't. Despite the authors trying to control for several potential confounders including diet, age, gender, exercise, and hormonal contraceptive use, it's too big a stretch.

This isn't just because that would mean sugar in drinks causes cancer but total sugar in the diet doesn't (which would be odd). It's also to do with how a causal association seems unlikely when you tease out the amounts of sugar that confer this increased risk.

In the study, those in the lowest quartile of sugary drink intake were getting 3g of sugar from drinks daily, and those in the top quartile, 19g. But cancer risk actually increased in the third quartile, at around 10g of sugar per day from sugary drinks. Is 7g of sugar intake – 1 ½ teaspoons per day – really enough for such a difference in cancer risk, especially given obesity wasn't a factor in this population?

It would seem biologically improbable.

Instead, it's much more likely there are other factors at play that are hard to control for. Those in the higher sugary drink intake group had higher calorie intakes, higher salt intake and fewer calories from alcohol, suggesting dietary differences of which sugary drink intake may just be a proxy marker. Or higher sugar intake may be indicative of other risk factors that aren't diet related at all.

An interesting aspect of this study that shouldn't be overlooked: the authors also looked at "diet" beverages and found no link between artificially sweetened drinks and cancer whatsoever. It's fair to add that diet drinks weren't widely consumed in this group, but given the all-pervading idea in pop-nutrition circles that aspartame and other sweeteners are carcinogenic, it's definitely one in the eye for this notion.

In the round? It's an interesting paper and one that overall adds to the evidence for choosing sugar-free over sugary drinks. But the authors rightly caution that further large prospective studies are needed. And much more research into possible biological mechanisms is needed to establish if sugar does indeed contribute to cancers, specifically breast cancer, or not.

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