

Links between Sucralose and Cancer *Heartland Food Products*¹ v. the Facts

Heartland Food Products Group says: “The rating is based solely on one study of mice that was conducted by the Ramazzini Institute in Italy, published in the *International Journal of Occupational and Environmental Health*, and **does not reflect the collective body of scientific evidence proving the safety of sucralose.**” [Emphasis added.]

FACT: The “collective body of scientific evidence” to-date on the safety of sucralose was produced almost entirely by industry, and most of the studies were irrelevant to cancer concerns. Only *two* previous studies—both funded by industry—tested for sucralose’s ability to cause cancer, and both of them used a design inferior to the one used by the Ramazzini Institute, an independent organization. One of the two industry studies did not give sucralose to mice until they were adolescents, whereas the mice in the new independent study were exposed to sucralose from before birth. Also, both of the industry studies ended when the animals were retirement age, but the new independent study lasted throughout the life of the mice, and many of the cancers did not develop until the mice were older. Furthermore the new independent study was much larger and more powerful than the two industry studies (it used twice as many male mice as the industry study, for example). In sum, the only independent study, and the most sensitive study ever conducted on the long-term effects of sucralose, found that it caused cancer. The study’s results were highly significant, including a 9-to-10-fold difference in leukemias between the male mice *not* treated with sucralose (serving as controls) and two different groups of mice that were treated with sucralose.

Heartland Food Products Group says: “Additionally, health regulatory and food safety authorities have found other studies conducted by the Ramazzini Institute to be unreliable. The group routinely conducts studies using an unconventional design and has been criticized for not following internationally-recognized safety assessment standards.”

FACT: Actually, the latest word from U.S. EPA scientists is that the Ramazzini Institute design “may impart **advantages** that provide chemical risk assessors with valuable insights for the identification of chemical-related neoplasia [*e.g.*, tumors] **not obtained from other bioassays.**” [Emphasis added.] The Ramazzini protocol

¹ Heartland Food Products Group describes itself as “the makers of SPLENDA® Sweeteners.” See <http://www.prnewswire.com/news-releases/splenda-brand-refutes-new-safety-allegation-300233835.html> and <http://www.splendatruth.com/Sucralose-is-safe>

is, indeed, “unconventional,” just like the first jet engine or transistor were unconventional technologies—but all were better than their standard predecessors.

Heartland Food Products Group says: *“Our society faces significant health risks with obesity and being overweight, including complications like diabetes and cardiovascular disease. Research indicates that one contributor to becoming overweight can be excess intake of added sugars. As a consequence, the current U.S. Dietary Guidelines, the World Health Organization and the American Heart Association have all recommended a reduction in average sugar consumption. Low-calorie sweeteners, like SPLENDA®, are effective tools for consumers to reduce their added sugar intake, helping them to lead healthier lives.”*

FACT: The American Heart Association and the Dietary Guidelines indicate that while sugar substitutes may help with weight management, the evidence to support this change is limited. We agree that over-consumption of sugar leads to serious health problems, and that those risks are greater than the risk posed by consuming sucralose. But that does not mean that we should ignore a compelling study on the risks from sucralose. Why add a carcinogen to your diet when you don’t have to? Better options include plain or flavored water, seltzer, or beverages sweetened with erythritol or stevia leaf extract.

Heartland Food Products Group says: *“This latest study by the Ramazzini Institute is just one more example of the type of report that perpetuates misperceptions about low-calorie sweeteners. Extensive research strongly supports that sucralose is safe for everyone and does not cause cancer. That is why SPLENDA® Sweeteners are recommended by health care professionals every day and are safely used by millions of people with a variety of health conditions, such as diabetes, obesity and being overweight. For more information about low-calorie sweeteners, please visit splendatruth.com.”*

FACT: This latest study by the Ramazzini Institute is just one more example of independent studies finding health problems where industry-sponsored studies didn’t. For more information about additives, please visit a reliable, independent source of information – not one produced by those with a conflict-of-interest. Our safety ratings on artificial sweeteners and more than 100 other additives are at <http://www.cspinet.org/reports/chemcuisine.htm>.

Heartland Food Products Group says: *“The Ramazzini Institute (RI) has a history of conducting studies that are not reliable for safety assessment.”*

FACT: The RI has a long history of conducting studies that are reliable for safety assessment. For example, Ramazzini Institute studies found that the chemicals vinyl chloride, benzene, and formaldehyde caused cancer, leading U.S. and other agencies to develop standards and take other actions to better protect workers and public health. RI’s results are comparable to those of the U.S. National Toxicology Program

(NTP), according to articles published by prominent U.S. government experts. [One compared similar studies](#) by the RI and the NTP and concluded that the results “are remarkably consistent regarding whether a chemical showed a positive or negative carcinogenic effect.” In the few cases where results differed, those were likely explained by the more sensitive methods used by the RI. For example, for one chemical, the tumors in the RI study were not significantly increased until after 112 weeks (late in life for the test animals), but the NTP study of that chemical ended at 104 weeks (about retirement age for the test animals). The article states that “[t]he two largest, longest existing, and most well-established bioassay programs in the world are the Ramazzini Foundation and the National Toxicology Program.” [Another study concludes](#) that “NTP and Ramazzini Foundation bioassay designs differ in several aspects, but bioassays at both institutions provide chemical-specific information for predicting human carcinogens, thus providing for protection of public health.”

Heartland Food Products Group says: “Experts have found that RI has had trouble in correctly diagnosing certain types of cancer – notably cancers of the type reported in their study to be increased. The researchers fail to tell us about this in their new paper on sucralose.”

FACT: Reviews by government scientists have found that there is “good agreement” between RI diagnoses and other pathologists’ diagnoses for most cancers. There have been differences in opinions for a few cancers, but these are limited to certain cancers *in rats*. The sucralose study was conducted in *mice*. The RI’s cancer diagnoses in mice were not in dispute. According to Dr. Vincent Cogliano, Director of the Integrated Risk Information System at the U.S. Environmental Protection Agency (EPA), and former Head of the International Agency for Research on Cancer Monographs program, the leukemias/lymphomas in rats are a different kind of tumor than those in mice. Dr. Cogliano indicated that EPA’s IRIS program would consider results from RI mouse studies (including on lymphoma/leukemia), consulting as appropriate with the U.S. National Toxicology Program.

Heartland Food Products Group says: “Virtually every carcinogenicity study conducted by the RI that has been reported in the public literature has found the substances they study to be carcinogenic.”

FACT: Of the more than 200 compounds tested by the RI, just [47](#) agents were reported to show “clear evidence” of carcinogenicity. The RI has reported dose-related increases in the incidence of lymphomas/leukemias for only [10](#) substances in addition to sucralose.

Heartland Food Products Group says: “The RI data, contrary to what the RI researchers say, don’t support that sucralose causes cancer.”

- *There is no logical dose-response in reported incidence of hematopoietic neoplasias in the male mice.*
- *Sucralose consumption in female mice was associated with decreased incidences of both hematopoietic neoplasias and cancers overall*
- *The rate of hematopoietic neoplasia incidence in male mice was actually far less than what it was in female mice”*

FACT: The RI data, contrary to what the manufacturer says, supports that sucralose causes cancer:

- In fact there *is* a dose-response—a highly significant ($p < 0.01$) trend—in reported incidence of hematopoietic neoplasias in male mice. In addition, the results for hematopoietic neoplasias in male mice were highly significant ($p < 0.01$) for two different groups of treated male mice, when compared to untreated male mice. For example, only *two* of the 117 untreated male mice had leukemia, compared to *14* of the 80 male mice in one group receiving sucralose. These tumors are rare in male mice that have not been exposed to any chemicals, and highly unlikely to be due to chance. The results did not achieve the same high level of statistical significance in one of the groups of exposed mice, possibly because fewer animals were tested at that dose.
- To suggest that sucralose results in a *decrease* in cancer is contrary to the public health purpose of such studies: identifying possible carcinogens in an effort to prevent cancer in people. In fact, there is not a decreased incidence of hematopoietic neoplasias in female mice: the RI study shows no dose-response trend in hematopoietic neoplasias in female mice (positive or negative), nor any significant difference in the overall incidence of hematopoietic neoplasias between untreated female mice (38%) and female mice consuming sucralose (33%). In contrast, the male mice treated with sucralose had *twice* as many hematopoietic neoplasias overall, compared to untreated male mice, and the male mice receiving the most sucralose had *three times* as many as the males who got none. The National Toxicology Program does not group all cancers/neoplasias together to assess whether they are significantly increased—and certainly, not to assess if they are significantly decreased.
- Hematopoietic cancers are indeed much more common in female mice than in male mice of this strain in this and other studies. That’s not unusual. Sex-related differences in cancers are common, and do not negate or weigh against the findings in males.

Heartland Food Products Group says: *“Some media stories have misreported the doses used in the RI study, saying that the mice received the equivalent of 10 cans of diet soda per day. It was actually the sweetness equivalent of about 70-2,000 cans of diet soda or about 400-12,000 packets of SLENDA® per day every day for life. The average consumer uses 3-5 packets per day.”*

FACT: Doses tested in the RI study used the equivalent of 10 to 340 cans of sucralose-sweetened Diet Pepsi, by our calculations. But the core argument is spurious. Industry frequently tries to deflect attention away from cancer results by

emphasizing the high doses used in long-term animal studies. Yet such studies are accepted by scientific agencies worldwide, because high doses make it possible to spot cancer-causing effects in small groups of rodents. To detect a (relatively) low cancer rate using the doses to which people are typically exposed would require tens of thousands of animals to be exposed in each study. When large doses cause cancer, smaller doses typically do too, although the risk is smaller.

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