

Research Reveals Shocking Information About Sucralose (Splenda) Side Effects



By Dr. Mercola | [Waking Times](#)

Sucralose (sold under the brand names Splenda, Splenda Zero, Zero-Cal, Sukrana, Apriva, SucraPlus, Candys, Cukren and Nevella, to name a few) was approved by the U.S. Food and Drug Administration (FDA) in 1998 as a tabletop sweetener and for use in products such as baked goods, nonalcoholic beverages, chewing gum, frozen dairy desserts, fruit juices and gelatins. It is also permitted as a general-purpose sweetener for all processed foods.

In the European Union, sucralose is known under the additive code E955. However, this artificial sweetener, like aspartame before it, was approved based on extremely limited evidence of

safety, and studies published in the years since it was brought to market confirms early suspicions, showing it is not an inert substance after all; that it accumulates in body fat, disrupts your gut microbiome, and causes metabolic dysregulation and associated health problems.

Splenda Was Approved With Near-Nonexistent Evidence of Safety

The FDA claims it approved sucralose after reviewing more than 110 animal and human safety studies. What they don't tell you is that of these 110 studies, only two human trials were actually published before the FDA approved sucralose for human consumption.

These two human trials had a grand total of 36 subjects, only 23 of whom were actually given sucralose, and the longest lasted just four days and looked at sucralose in relation to tooth decay, not human tolerance.¹

What's more, the absorption of sucralose into the human body was studied on a grand total of six men. Based on that study,² the FDA allowed the findings to be generalized as being representative of the entire human population, including women, children, the elderly and those with any chronic illness – none of whom was ever examined.

These studies are hardly indicative of what might happen to someone consuming sucralose in multiple products every single day for years or a lifetime. Some of the animal studies also raised questions about the product's safety, showing:³

- Decreased red blood cells (a sign of anemia) at levels above 1,500 mg/kg/day
- Increased male infertility by interfering with sperm production and vitality, as well as brain lesions at higher doses

- Spontaneous abortions in nearly half the rabbit population given sucralose, compared to zero aborted pregnancies in the control group
- A 23 percent death rate in rabbits, compared to a 6 percent death rate in the control group

I knew the approval of sucralose was a serious mistake, which is why I wrote "[Sweet Deception](#)" in 2006, despite the fact Johnson & Johnson threatened to sue me if the book went to publication. Since then, many new studies have confirmed my warnings, showing artificial sweeteners confuse your metabolism and cause biochemical distortions that can result in weight gain, metabolic dysfunction and other health problems.

Sucralose 'Should Carry a Big Red Warning Label' as It Kills Your Beneficial Gut Bacteria and Accumulates in Your Fat Tissue

Sucralose has been found to be particularly damaging to your gut. Research⁴ published in 2008 found it reduces gut bacteria by 50 percent, preferentially targeting bacteria known to have important human health benefits. Consuming as few as seven little [Splenda](#) packets may be enough to have a detrimental effect on your gut microbiome.

The study also found it increases the pH level in your intestines, and is absorbed into and accumulates in fat tissue. In response to this study, James Turner, chairman of the national consumer education group Citizens for Health, issued the following statement:⁵

"The report makes it clear that the artificial sweetener Splenda and its key component sucralose pose a threat to the people who consume the product. Hundreds of consumers have

complained to us about side effects from using Splenda, and this study ... confirms that the chemicals in the little yellow package should carry a big red warning label."

All Artificial Sweeteners Are Toxic to Your Gut Bacteria

More recent research confirmed these findings, and expanded them to all currently approved [artificial sweeteners](#). The animal study,⁶ published in the journal *Molecules* in October 2018, found [aspartame](#), sucralose, saccharin, neotame, advantame and acesulfame potassium-k all cause DNA damage in, and interfere with, the normal and healthy activity of gut bacteria.

As reported by Business Insider,⁷ the research team concluded that all of these sweeteners "had a toxic, stressing effect, making it difficult for gut microbes to grow and reproduce," and that by being toxic to gut bacteria can have an adverse effect on human health.

Aside from the countless side effects associated with an impaired gut microbiome, the researchers warn it may also affect your body's ability to process regular sugar and other carbohydrates.

Sucralose Is Not an Inert Compound

Research has also demonstrated that sucralose is not a biologically inert compound, as claimed. In the 2013 paper,⁸ "Sucralose, a Synthetic Organochloride Sweetener: Overview of Biological Issues," the authors state, in part:

"Sucralose and one of its hydrolysis products were found to be mutagenic at elevated concentrations in several testing methods ... Both human and rodent studies demonstrated that

sucralose may alter glucose, insulin and glucagon-like peptide 1 levels. Taken together, these findings indicate that sucralose is not a biologically inert compound.”

According to this paper, the acceptable daily intake set for sucralose may in fact be hundreds of times too high to ensure safety. Importantly, the study also notes that “Cooking with sucralose at high temperatures ... generates chloropropanols, a potentially toxic class of compounds.”

Yet, Splenda is frequently recommended for cooking and baking,⁹ and is often used in [processed foods](#) in which high heat was involved. Chloropropanols, which are still poorly understood, are thought to have adverse effects on your kidneys and may have carcinogenic effects.¹⁰

Researchers Call for New Safety Review in Light of Evidence Showing Sucralose Is Metabolized and Stored in Fat Tissue

Another industry claim that has been demolished by science is the claim that sucralose passes unmetabolized through your body and therefore has no biological effects. Alas, research^{11,12} published in the online version of the Journal of Toxicology and Environmental Health August 21, 2018, shows it is in fact metabolized and that it accumulates in fat cells.

Here, 10 rats were given an average dose of 80.4 mg of sucralose per kilo per day (k/day) for 40 days. According to the researchers, this dosage is “within the range utilized in historical toxicology studies submitted for regulatory approval in North America, Europe and Asia.”

Urine and feces were collected daily from each rat, and were analyzed using ultrahigh performance liquid chromatography tandem mass spectrometry (UHPLC–MS/MS), which “revealed two

new biotransformation products that have not previously been reported.”

The two metabolites are acetylated forms of sucralose that are lipophilic, meaning they dissolve in and combine with fats. Sucralose itself is far less lipophilic, which has been part of the safety argument. According to the authors:

“These metabolites were present in urine and feces throughout the sucralose dosing period and still detected at low levels in the urine 11 days after discontinuation of sucralose administration and six days after sucralose was no longer detected in the urine or feces.

The finding of acetylated sucralose metabolites in urine and feces do not support early metabolism studies, on which regulatory approval was based, that claimed ingested sucralose is excreted unchanged (i.e., not metabolized).

The historical metabolic studies apparently failed to detect these metabolites in part because investigators used a methanol fraction from feces for analysis along with thin layer chromatography and a low-resolution linear radioactivity analyzer.

Further, sucralose was found in adipose tissue in rats two weeks after cessation of the 40-day feeding period even though this compound had disappeared from the urine and feces.”

So, not only is sucralose metabolized, these metabolites accumulate in your fat tissues, where they remain for “an extended period of time” after you stop consuming sucralose. In all, these findings led the authors to conclude:

“These new findings of metabolism of sucralose in the

gastrointestinal tract and its accumulation in adipose tissue were not part of the original regulatory decision process for this agent and indicate that it now may be time to revisit the safety and regulatory status of this organochlorine artificial sweetener."

Sucralose Linked to Liver, Kidney and Thymus Damage

Another study¹³ published online August 2, 2018, in the journal *Morphologie*, found sucralose caused "definite changes" in the liver of treated rats, "indicating toxic effects on regular ingestion." The researchers warn these findings suggest sucralose should be "taken with caution to avoid hepatic damage."

In other words, regularly using Splenda could damage your liver. Here, adult rats were given a much higher (yet nonlethal) oral dose of sucralose – 3 grams (3,000 mg) per kilo body mass per day for 30 days, after which the animals' livers were dissected and compared to the livers of unexposed controls. According to the authors:

"Experimental rats showed features of patchy degeneration of hepatocytes along with Kupffer cells hyperplasia, lymphocytic infiltration, sinusoidal dilatation and fibrosis indicating a definite hepatic damage on regular ingestion of sucralose. Sinusoidal width was also found to be increased in experimental animals as compared to controls."

Earlier research has also linked sucralose consumption to liver and kidney enlargement^{14, 15} and kidney calcification.^{16, 17} Another organ affected by sucralose is your thymus, with studies linking sucralose consumption to shrinkage of the thymus (up to 40 percent^{18, 19}) and an increase

in leukocyte populations (immune system cells) in the thymus and lymph nodes.²⁰

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