



Over a 150 million Americans drink on average 3.2 cups of coffee a days, resulting in over 400 million cups of coffee per day, making the United States the leading consumer of coffee in the world. According to The <u>National Coffee Association</u> the United States imports more than \$4 billion worth of coffee per year.

With all that coffee consumptions it's no wonder it is one of the most studied consumable goods. Several studies have discovered numerous health benefits to drinking 1 to 3 cups of coffee a day. For example as <u>researchers at UCLA</u> found that drinking coffee increases the protein sex hormone-binding globulin (SHBG) in plasma, which can ultimately help protect against type 2 diabetes.

Other studies have found that drinking coffee can help <u>control movement in people suffering</u> <u>from Parkinson's</u>, <u>lower the risk of liver cancer by about 40%</u>, <u>reduce risk of primary</u> <u>sclerosing cholangitis (PSC)</u>, and <u>protect against heart failure</u>.

With so many benefits, it is almost hard to believe that a cup of Joe could also be potentially cancerous.

Heating various plants and grains at high temperatures to make them turn brown can generate acrylamide. This browning effect is called "The Maillard Reaction", which is a chemical reaction between amino acids and reducing sugars that gives browned food its distinctive flavor.

To get your perfect cup of coffee, the dried coffee beans are roasted to varying degrees, depending on the desired flavor. This process is what can release the <u>potential carcinogen</u>, <u>acrylamide</u>.

A lawsuit filed in 2010 by the <u>Council of Education and Research on Toxics</u> seeks to require coffee sellers, like Starbucks, BP, and 7-Eleven, to provide customers with a "clear and reasonable warning" that drinking coffee could expose people to acrylamide.

If the suit is successful signs would need to be clearly posted at store counters or on walls where someone could easily see them when making a purchase. 7-Eleven is the latest company to comply with the lawsuit, agreeing to display a warning.





However, the science on human exposure to acrylamide still needs future studies for places like Starbucks to agree to the terms of the lawsuit. The only acrylamide studies that have shown cancerous results are in rodents. The types of cancer are caused as the rodent's body converts acrylamide to glycidamide, which can result in damaged DNA.

Even though humans and rodents absorb and metabolize acrylamide at different rates, the <u>National Cancer Institute (NCI)</u> explains that acrylamide should be anticipated as a human carcinogen based on the evidence from the rodent studies.

In addition to coffee, acrylamide can be found in potatoes, baked goods (cookies, bread, crackers), cereal, and some canned fruits like black olives and prune juice. However, very few of these food products have cancer warnings on their packaging.

Researchers are unsure of how high of a dosage of acrylamide a human would have to consume for it to have a cancerous effect, as it is difficult to track exactly how much acrylamide a person has taken in over time. And since cancers can take several years to appear, studies have a challenging time finding concrete evidence that can connect the two. To date, no studies have clearly established what a safe level of acrylamide in your diet may be.

To better understand how different levels of acrylamide affects a person, there will need to be more scientific studies.

To jump into the acrylamide conversation, Phenomenex explored how to use Novum™ SLE tubes to clean up a coffee matrix in order to quantitate known acrylamide levels. The simplified liquid extraction (SLE) technique used can be applied to a variety of compounds and sample matrices outside of the clinical research industry. Novum SLE is also able to effectively function as a more automatable and easier to use replacement for any liquid-liquid extraction method.

Check out the full technical note and all the details of the application "Acrylamide in Coffee" here!



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Summary



Article Name

Could Coffee Cause Cancer? Potential California Warning Labels Suggest Yes Description

There are several studies that suggest that coffee can be beneficial to our health, but a new study reveals that coffee contains the carcinogen, acrylamide.