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The Bottom Line on Green Tea Extract

The Consumer Reports article on “15 Supplement Ingredients You Should Always Avoid” included green tea extract powder on the list. Paula and I have used it for a number of years, so I wanted to check out the research behind the potential health issues they claimed could happen to people who regularly use green tea extract powder as part of a supplement plan.

The problem is that the authors didn't list any references. They had a document that listed their board of experts, the stores they shopped, and a list of criteria they used to select the ingredients; they just didn't support it with research studies that backed up their list of potential side effects when using green tea extract. So I searched the research using the PubMed search engine to find the research myself. I found absolutely no research studies to support their claim that green tea extract caused dizziness, ringing in the ears, or glaucoma.

They claimed that green tea extract contributes to anemia, so I searched for anemia and then iron absorption. I found one human trial on phytonutrients from green tea and iron absorption: after a test meal with and without green tea extract, iron absorption was reduced (2). Ten subjects. One meal with and one meal without green tea extract. That was the study. At best, this could serve as a pilot study for a larger trial.

Another issue was a rise in heart rate and blood pressure after green tea extract supplementation. I hate to be sarcastic about this, but really? Something like green tea, which contains caffeine, will raise blood pressure and heart rate? People who use green tea extract should understand that's possible and if they don't handle caffeine well, they shouldn't use it.

The claim that drew my attention the most were claims of liver damage and possible death. There were no clinical trials to support those claims, only several meta-analyses of case studies. A case study usually occurs when a patient arrives in the emergency room with a medical problem; the problem and potential causes are written up and published in a medical journal. I read several of the case studies. Some were very thorough, some not; some were attributed to drinking green tea while others were attributed to the use of green tea extract. In all, there were 34 case reports that were referred to more than once in the research (3). The conclusion was that green tea extract was the factor that caused liver problems; 34 cases over 10 years.

When you think of the billions of servings of green tea that are drunk each day and the millions of doses of green tea extract that are taken every day, 34 case studies over 10 years isn't overwhelming evidence that green tea polyphenols cause liver damage. One of the conclusions of a review suggested that the problem lies with the particular individual, not the supplement itself (4). It would be interesting to know why it happened in those people, but that's virtually impossible to test because it happens so infrequently.

What may happen more frequently is a rise in liver enzymes such as ALT. Based on a recent study of the effects of green tea extract on breast cancer biomarkers, the rise in liver enzymes happened in about 6% of the women who took a high-dose green tea extract when compared to those who took a placebo (5). That doesn't mean liver damage occurred, but it shouldn't be ignored either. It may be that the dose is too high or that the person doesn't process it well. Another factor may be interaction with pharmaceuticals that a person may be taking.



The Bottom Line

Based on the available research, there's no reason to avoid green tea extract or to avoid drinking green tea. We're going to continue to use the supplements that contain green tea extract as well as drinking green tea.

That doesn't mean we're all going to take stupid pills, either. If you're taking a medication, you should talk with your physician about what foods and drinks may interfere with the processing of the medication by your body. Why food and drinks? If a food won't interfere with a medication, it's unlikely that an extract will either. And when you have your yearly physical, you should have your liver enzymes checked. If they're off, examine the medications and supplements you're taking to see if there's anything that could cause the altered readings.

Remember not everyone processes every nutrient, medication, or even every food the exact same way. We have no way of knowing how we process anything other than obvious nutrients such as dairy, eggs, shellfish, etc.; we find out by trial and error.

Going back to where we began, I'm disappointed with Consumer Reports as an organization; it seems odd that an organization that prides itself on research to test consumer products did such a poor job. They used scare tactics rather than reason in both articles. More than that, they provided no evidence that what they said is true even though a reasonable explanation of the research on green tea would have been helpful. I guess science by headline has reached Consumer Reports.

What are you prepared to do today?

Dr. Chet

References:

1. <http://bit.ly/2b6WPno>
2. Am J Clin Nutr. 2001 Mar;73(3):607-12.
3. Int J Mol Sci. 2016 Apr; 17(4): 537.
4. Eur J Clin Pharmacol. 2009 Apr;65(4):331-41.
5. Food Chem Toxicol. 2015 Sep;83:26-35.

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