

Plant-Based Nutrition and Lifestyle

Plant-based Nutrition for Optimal Health

Casein Protein and the Cancer Connection: Is it a Danger?

What Is Casein Protein?

A white, tasteless, odorless protein precipitated from cow's milk by rennin. It is the basis of cheese and is used to make plastics, adhesives, paints, and foods. Rennin, also called Chymosin, a protein-digesting enzyme that curdles milk by transforming caseinogen into insoluble casein; it is found only in the fourth stomach of cud-chewing animals, such as cows. Its action extends the period in which milk is retained in the stomach of the young animal. In animals that lack rennin, milk is coagulated by the action of pepsin, as is the case in humans. A commercial form of rennin, rennet, is used in manufacturing cheese. It is also an ingredient in many Soy Cheese products, many of which are deceptively marketed as a vegetarian cheese alternative.

The Cancer Casein Connection

In the book, *The China Study*¹, by Dr. T. Colin Campbell, PhD., reports how he discovered, with over 20 years of cancer research, a link between animal protein intake and cancer development. Although Dr. Campbell was raised on a farm and was raised loving milk and eggs and sausage, his scientific curiosity was peaked through the research he conducted as well as reviewed. The China Project (initial name of study) was started in the early 1980's a joint effort was established between Cornell University, Oxford University and China's health research laboratory. The researchers gathered data on 367 variables, across 65 counties in China and 6,500 adults. The research was conducted over a 10 year period and was funded by both the Chinese and the United States government.

What Dr. Campbell discovered was that protein did indeed promote cancer development. However it was not all types of protein. What Campbell discovered was that casein, which comprises 85% of the protein in cow's milk, promoted cancer in all stages of its development. The safe protein, that which did not promote cancer, was plant-based.

"Cow's milk protein, of all things, is probably the most potent promoter ever discovered," Campbell said. A series of experimental animal studies conducted by Campbell revealed that the protein casein gave milk its cancer-promoting quality. "It was heretical to say that protein wasn't healthy, let alone say it promoted cancer," Campbell wrote.

"We need protein. There's no question about that," he said. But the 35 percent protein diet recommended by the Food and Nutrition Board in 2002 is "totally insane," according to Campbell. "As a species, we're living in the range where you can expect to see problems from protein." The connection between casein and cancer was so profound that the scientists could literally turn cancer growth on and off in the laboratory animals, like a light switch, simply by altering the level of casein protein in their diets. Interestingly, they also found that feeding the

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animals the same levels of plant based protein (gluten and soy) did not at all promote cancer growth.

Also consider, for example, large research studies have identified cow's milk consumption as one of the strongest links to ovarian cancer. One US study² of over 80,000 women showed that those who consumed just 1 or more servings of skim or low-fat milk daily had a 32% higher risk of developing any ovarian cancer and a 69% higher risk of serious ovarian cancer when compared to women who consumed 3 or less servings per month. Another study from Sweden of over 60,000 women confirmed these results. Their researchers found that women who consumed more than 4 servings per day of dairy products had twice the risk of serious ovarian cancer as women who consumed fewer than 2 servings of dairy products per day. To further their evidence against milk in particular, women who drank as little as 2 or more glasses of cow's milk per day had twice the risk for ovarian cancer over women who consumed little to no milk.

The Cancer and Animal Protein Connection

The results of the China Study showed that nutrition has a very powerful influence on a multitude of diseases. Animal based foods were linked to higher breast cancer rates and higher blood cholesterol levels. Whereas plant based diets were connected to low incidents of breast cancer rates and cholesterol levels. Fiber and antioxidants from plant foods were also linked to lower levels of digestive tract cancers. Between Campbell's research and many other studies, it appears that good science – well thought out and planned studies – are painting a consistent picture between diet and health. Because of this research we are now able to largely reduce our risk of developing deadly diseases just by eating the right food.

For example, in the scientific literature we know that animal proteins, such as casein, and casein is often been the one that is most studied, that animal proteins elevate blood cholesterol levels and this has been shown in both experimental animals and in humans.^{3 4 5 6}

Animal proteins in more recent studies in the last 10-15 years have been shown to, particularly casein and milk proteins, have been shown to initiate a very serious kind of diabetes that occurs in youngsters, so-called Type I diabetes,^{7 8 9} the insulin-dependent diabetes that ultimately leads to very serious consequences for the rest of that individual's life.

Animal proteins increase production of growth hormones. There has been more recent data in recent years, and growth hormones of certain kinds, as they are elevated and become active, they tend to stimulate the growth of cancers. Animal protein increases the rate at which cells divide, and that is fairly central to the carcinogenic process and probably has a lot to do with the promotion thing I talked about before.

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Foods that Contain Casein

Milk has more casein than any other product. Most dairy products also contain high levels of casein, including eggs, butter, cheese, yogurt, ice cream, cottage cheese, infant formulas, whipped toppings, protein bars, salad dressings, coffee creamers, processed meats, bakery glazes and breath mints.

Casein should not be confused with whey, another protein found in milk and dairy products. When cheese is made, an enzyme called rennet is used. Casein is heavier than whey and often sinks to the bottom during the process. The whey is often removed completely.

Adverse Reactions from Casein and Gluten

People with wheat allergies can often get headaches, congestion, dizziness and gastritis from eating foods that contain this grain. Their bodies react to the gluten protein. People with these allergies may lack adequate levels of protease and cellulase, enzymes that break down glutes. People with milk allergies can have similar symptoms. They have trouble processing the casein protein. People with gluten sensitivities often have problems with casein as well. The Autism Research Institute actually recommends a gluten-free, casein-free (GFCF) diet for children with autism, as some autistic children have problems eating foods containing gluten and casein.

Limit Casein Intake with Healthy Diet

The good news about this research is that eating a whole foods, plant based diet is the best thing you can do for your health and your future in preventing chronic disease. The closer we get to a whole foods plant-based diet with minimal or no use of added oil, sugar, salt or processed foods, the healthier we will be.

Health Impact and Cost

One of the benefits of good nutrition is the prevention of many chronic diseases like heart disease, cancers, diabetes, hypertension, and arthritis. There is also the question of our excessive dependence on drugs and surgery to control our health. In its simplest form, eating the right way would largely obviate the enormous costs of using drugs as well as their side effects. Fewer people would need to wage lengthy, expensive battles with chronic disease in hospitals over their last years of life. Health care costs would drop and medical mistakes would wane as premature death plummeted. In essence, our health care system would finally protect and promote our health as it is meant to do.

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Bibliography

T. Colin Campbell, Ph.D., for more than 40 years, has been at the forefront of nutrition research. His legacy, the China Study, is the most comprehensive study of health and nutrition ever conducted. Dr. Campbell is the Jacob Gould Schurman Professor Emeritus of Nutritional Biochemistry at Cornell University and Project Director of the China-Oxford-Cornell Diet and Health Project. The study was the culmination of a 20-year partnership of Cornell University, Oxford University and the Chinese Academy of Preventive Medicine.