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## Hormones in Milk Are Linked to Cancer

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by Alison Stewart

Studies link dairy consumption to ovarian and breast cancer in women and prostate cancer in men. Milk, both human and cow, has naturally-occurring growth hormones that can become cancerous in adults, whose bodies are supposed to have finished their growth spurts.

### Biology

One reason milk consumption may lead to cancer risk is insulin-like growth factor, IGF-1 (not to be confused with bovine growth hormone, rBGH). Milk contains IGF-1 for good reason: milk is designed for babies, and IGF-1 helps us grow. IGF-1 affects growth, as well as other functions, and is normally found in our blood. Higher levels of IGF-1, however, appear to stimulate cancer cells.



"IGF-1 in milk is a growth factor," said Dr. Amy Joy Lanou, nutrition director for the Physicians Committee for Responsible Medicine. "Adult bodies are no longer growing. Lots of excess growth factors floating around are likely to find cancerous cells to act upon," Lanou said.

Cow's milk has IGF-1, and IGF-1 levels increase in cows treated with bovine growth hormone, rBGH. (Estimates range from twice as high to ten times higher.) Also, pasteurization does not destroy IGF-1, but increases its concentration instead.

There is IGF-1 in cow's milk that is identical to the IGF-1 found in humans already, which could lead to the ease with which we absorb it from milk. IGF-1 is found in higher concentrations in the bodies of people who consume dairy products.

### Study Analysis

"IGF-1 appears to be a very good indicator of cancer risk," said Dr. Colin Campbell, nutritional biochemistry professor at Cornell University.

Though diets high in calories or in animal proteins also boost IGF-1 levels, milk seems to be worse than other foods. A 1999 study showed that adding three eight-ounce servings of milk per day to the diet for 12 weeks caused a 10 percent increase in IGF-1 levels. ("Dietary changes favorably affect bone remodeling in older adults" *Journal of American Dietetic Association*, 1999). In 1997, a similar study had similar results in teenage girls. ("Milk intake and bone mineral acquisition in adolescent girls," *British Medical Journal*, 1997).

And in terms of cancer causation, in pre-menopausal women, a 1998 study found that women with highest concentrations of IGF-1 had more than twice the risk of breast cancer as those women with lowest

levels. Interestingly, there was no relationship between IGF-1 concentrations and breast cancer risk in post-menopausal women. ("Circulating concentrations of insulin-like growth factor-1 and risk of breast cancer," *Lancet*, 1998).

There are conflicting results in other studies, however. A 2002 study ("Intake of Dairy Products, Calcium, and Vitamin D and Risk of Breast Cancer," *Journal of the National Cancer Institute*, September 2002) found an association between intake of low-fat dairy products and a reduced risk of breast cancer. This could be because women who use low-fat dairy products are more likely to be health-conscious overall, or it could be that some forms of dairy help reduce cancer risk.

Ovarian cancer may also be linked to dairy consumption, but for a different or additional reason.

Our bodies break down milk sugar, lactose, into galactose. Enzymes then break the galactose into more usable sugars. When a woman's dairy consumption overloads the enzyme's ability to break down the galactose, it may build up in the blood or affect a woman's ovaries, according to the PCRM ("Women and Cancer," [source](#), PCRM).

The PCRM explains how a 1989 study of hundreds of women with ovarian cancer found that the difference between them and a similar age and demographic group of women who did not develop ovarian cancer was their dairy intake, particularly their intake of yogurt and cottage cheese. ("Galactose Consumption and Metabolism in Relation to the Risk of Ovarian Cancer," *Lancet*, 1989.)

The problem wasn't the fat in milk -- it was the sugar in milk, so the bacteria in the yogurt and cottage cheese actually increased the conversion of lactose to galactose.

In addition to breast and ovarian cancer, prostate cancer may also be linked to dairy consumption. Neal Barnard, president of the PCRM, analyzed 23 studies relating to prostate cancer and milk consumption.

Barnard found that 6 out of 12 case-control studies and 5 out of 11 correlation studies found significant associations between dairy intake and prostate cancer. Men with the highest levels of dairy intake were between 1.3 and 2.5 times more likely to get prostate cancer than those with the lowest consumption. ([link to article](#)).

As with breast cancer, increased IGF-1 levels from dairy may increase prostate cancer risk. In a 1998 study, men with the highest levels of IGF-1 had more than four times the risk of prostate cancer than men with the lowest levels of the growth factor. ("Plasma insulin-like growth factor-I and prostate cancer risk," *Science*, 1998)

Another reason milk may be linked to prostate cancer is the calcium in the milk -- the same calcium we're trying to get into our bones through our diet. This calcium may decrease the body's supply of a form of vitamin D that helps to protect against prostate cancer, according to a 2000 press release from the Harvard School of Public Health ("Higher Intake of Dairy Products May be Linked to Prostate Cancer Risk").

The press release explains a study that found a moderately higher risk of prostate cancer from high dairy intake. The researchers also discovered that men who drank more than six glasses of milk each week had lower levels of the vitamin D that could protect against cancer than did men who drank fewer than two glasses.

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