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## REPORT

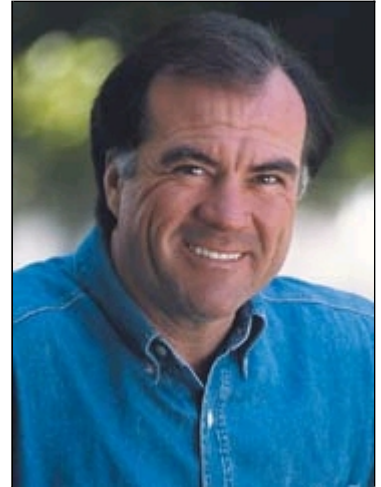
### Prostate Cancer and I3C

by Terri Mitchell

Cancer of the prostate gland is the second leading cause of cancer death in American men. The risk is greatest for men 65 and older; however, 25% of all cases occur in men under 65. If caught in the early stages when it's confined to the gland, chances are it will be controlled. If it spreads beyond the prostate, controlling it will be more difficult. The best strategy is to avoid getting prostate cancer in the first place.

#### Risk factors

While not fool-proof, there are steps a man can take to beat the odds of getting prostate cancer. Asian men who eat a traditional Asian diet have a much lower rate of prostate cancer than Americans. The Asian diet is low in fat and animal products, high in soy, rice and green tea. Japanese men have five to 10 times more soy-related cancer fighters in their body than men of other countries. Studies on American men show that eating a lot of legumes (including lentils, soybeans, etc.), yellow-orange vegetables (carrots, peppers), green vegetables, tomatoes, and cruciferous vegetables (cauliflower, cabbage, broccoli) significantly cuts the risk of prostate cancer. On the other end of the spectrum, the consumption of meat and dairy products doubles the risk of prostate cancer, with red meat being associated with metastatic and advanced cancers.



Recent studies suggest that carcinogens known as heterocyclic amines are one of the reasons meat increases risk. Heterocyclic amines are carcinogens. They're formed when meat is cooked-especially when it's pan fried or broiled (for more on this, see Life Extension magazine, "Barbequer Beware," November 2000, p. 42). According to a study that evaluated 25,000 African-American men, their preference for well-done meat may be why this group has an extremely high rate of prostate cancer. The connection between cooked meat and prostate cancer is also backed up by studies showing that heterocyclic amines mutate prostate DNA in rodents.

Studies on the Canadian Inuit seem to verify that cooking meat ups the risk. The Inuits have low rates of both breast and prostate cancer, yet they eat a lot of meat. They eat their meat raw, however. (Note: in a study on 135 Inuit women, there is no record of breast cancer before 1966, and only two cases between 1967 and 1980). This seems to confirm that it's the cooking of meat that causes the problem. Yet, Saudi men have low rates of prostate cancer, and their diet includes cooked meat and lots of fat-which means that something else is at work. Researchers at Harvard have stated that "a portion of the risk of metastatic prostate cancer associated with red meat intake remains unexplained."

That "unexplained something" may be related to growth-promoting chemicals implanted in U.S. cattle, according to some experts. Saudi meat and the wildlife the Inuit eat are not implanted with such drugs. Nor are Asian cattle-a part of the world where the rates of prostate cancer are low.

One of the most popular of the growth stimulants is a drug known as "zeranol" (Ralgro). Zeranol is a synthetic version of a mycotoxin metabolite that mimicks estrogen and makes cattle grow quicker with less food. It's only one of dozens of estrogen, testosterone and androgen-like chemicals implanted in North American cattle for the purpose of fattening both the cows and the profits. The European Union has banned Ralgro from its dinner plates, but the U.S. has not. Is this why North America has the highest rate of prostate cancer in the world?



If a man truly wants to avoid prostate cancer, or the recurrence of prostate cancer, he must get serious about what he eats.

Zeranol causes normal prostate and breast cells to grow. It also promotes the growth of hormone-responsive cancer cells. According to one study, Zeranol promotes growth at a fraction of what's allowed in beef by the FDA.

In animals, zeranol causes "hyperplasia and transitional and squamous transformation in the prostate and adrenal cortex" and "low epithelium associated with focal areas of squamous metaplasia" in the prostate; and abnormal seminiferous tubules-among other things.

#### Preventing prostate cancer

Diet plays a big role in whether or not a man gets prostate cancer. Asians (notably Chinese) have miniscule rates of prostate cancer compared to Americans; but if they adopt a Western diet, their risk of prostate cancer skyrockets. The same is true for breast cancer. An international study found that one of the most protective foods against prostate cancer is soy. Soy products are four times more protective than any other food, according to this one study. The fatty acids in fish also appear to be protective. Data on the Inuit supports this concept. Vegetables, and particularly certain nutrients in vegetables, are also protective.

In a study on African-American, Japanese and Chinese men, those who ate the most cruciferous vegetables lowered their risk of getting prostate cancer by 39%. A different study confirmed that three or more servings of cruciferous vegetables a week can reduce the risk of prostate cancer by 40%. One of the beneficial factors in cruciferous vegetables is I3C (indole-3-carbinol).

#### How I3C works

I3C has several different actions that help prevent and stop prostate cancer. It's most well-known for its hormone-modulating effects. Studies show that I3C changes not only estrogen metabolism, but testosterone and androsterone as well. Its hormone-altering action may help protect against hormone mimickers such as the drugs implanted in food animals. It has been confirmed that whether a hormone is the real thing, a drug facsimilie or a chemical, I3C will neutralize it. Presumably this would also include supplements such as pregnenolone and DHEA which are converted in the body to hormones.

Another way I3C stops cancer is by keeping carcinogens from damaging DNA. It also protects DNA from free radicals. In addition, it has been reported that I3C blocks aflatoxin, a mycotoxin that can cause prostate cancer. It also blocks the cancer-causing effects of heterocyclic amines from cooked meat.

Not only does I3C protect against prostate cancer, it can kill it if it gets a toehold. Most I3C research has been on another hormonally-driven cancer-breast cancer. But a new study confirms that I3C acts virtually the same in both types of cancer. In the first report of its kind, I3C was recently shown to be able to stop the growth of prostate cancer, and cause the cancer cells to die. The mechanism is identical to what happens in breast cancer cells: it upregulates tumor suppressor genes and blocks growth factors. Cells undergo apoptosis and die.

I3C has been studied since the 1970's, when it was first proposed as something that would protect the body against chemical carcinogens. Early studies proved that I3C was highly effective in preventing chemically-induced cancer in rodents. Since that time, hundreds of studies have added to our knowledge about I3C. They show that I3C is a versatile and powerful anti-carcinogen.

#### Prevention is key

Prostate cancer is a slow cancer. It usually takes a long time to develop. The best time to think about it is now, when a man appears healthy-not later when cancer has grown to the point of being detectable.

Consider the risk factors, and the protective factors. Prostate is one of the most common cancers, yet one of the most responsive to dietary changes. Many of the protective factors in the Asian diet are available in concentrated form as supplements. Protective factors in the typical American diet such as lycopene from tomatoes and I3C from broccoli are also available as supplements. Supplements shouldn't be viewed as a replacement for a good diet, however, nor as an antidote to a bad one. If a man truly wants to avoid prostate cancer, or the recurrence of prostate cancer, he must get serious about what he eats. Authors of The Garden of Eden Longevity Diet point out that it's important not to keep eating the same thing everyday. Diversify-try something different. There's good scientific reason in that it helps prevent constant exposure to the same contaminants, and increases the chances of getting a



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variety of nutrients. Making a few changes, and keeping up with the latest research are good strategies for beating not only prostate cancer, but other types of cancer as well.

For information on ordering The Garden of Eden Longevity Diet by Drs. Antonio Costantini, Heinrich Wieland and Lars Qvick, see <http://members.aol.com/jfoverlag/fungalbionics>

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