Well-recognized thyroid expert, Broda Barnes, MD, estimated approximately 40% of the American adult population suffers from undiagnosed hypothyroidism. Subnormal thyroid function appears to be a risk factor for cancer. Iodine is a major component of the thyroid gland. Improper thyroid function, be it hypothyroid, or hyperthyroid, appears to be a risk factor for cancer among the general population. Iodine deficiency has been associated with breast cancer risk. Iodine deficiency can be a matter of geography, or induced by any number of environmental stressors. Dr. Bernard Eskin, Director of Endocrinology in the Department of Obstetrics and Gynecology at the Medical College of Philadelphia found an association between iodine deficiency and breast cancer. Dr. Eskin's research uncovered a high incidence of breast cancer in iodine poor areas of the United States, Poland, Switzerland, and Austria, where goiter is also predominant. Japan and Iceland have the world's lowest rates of goiter and breast cancer deaths. Iodine rich sea vegetables are important staples of Japanese cuisine, and iodine rich seafood makes up a large part of the Icelandic diet.

In addition to dietary deficiencies, thyroid function can be adversely affected by drugs, chemical pollutants, and radiation exposure.

Drugs and Chemicals
Manmade compounds also assault the thyroid gland. Thyroid function can be suppressed by certain drugs and chemicals – antidiabetic and sulfa drugs; barbiturates that contain cyanide; prednisone; estrogen (birth control pills and hormone replacement therapy); some cough medicines; the antidepressant lithium; aspirin and other salicylate painkillers; and thousands of chemical food additives in processed food. Perchlorate is a potent environmental toxin that inhibits iodine uptake by the thyroid gland. Perchlorate is a by-product of synthetic fertilizers and solid propellants for rockets, missiles, and fireworks. Perchlorate salts are a component of airbag inflators. It has been leached into surface and underground water supplies. Pesticides used on domestic and international air flights pose an additional risk to thyroid suppression. Tralomethrin, a commonly used airline pesticide spray, contains bromide, which caused thyroid disease in animal studies.

Fluoride
"Statistics show that populations drinking fluoridated water have universally lower thyroid levels," states Jerry Mittelman, DDS, editor of The Holistic Dental Digest PLUS. Fluoride is an intensely controversial subject, praised by some for protecting against tooth decay, and condemned by others as a major risk factor for cancer, arthritis, osteoporosis, and hypothyroidism. It is almost impossible to avoid fluoride in our culture. Fluoride is added to more than half the municipal water supplies in the US. Bottled juices, soft drinks, iced teas, wine coolers, jellies, and other processed foods are often made with fluoridated water. If consumers wish to know if their favorite brand of bottled or canned beverage is made with fluoridated water, they must call the company and ask. Nearly all supermarket brands of toothpastes, and many brands sold in health food stores contain fluoride. However, it is possible to find some brands of toothpaste in health food stores that do not contain fluoride. Our exposure to fluoride can start during infancy, and in some cases in utero. Some brands of baby foods contain high levels of fluoride. Children may be given fluoride tablets or rinses at school, or by their dentist.

Studies done with Danish female cryolite workers showed fluorosis in the teeth of offspring that had been nursed, raising the possibility that fluoride can even be passed through breast milk. Cryolite is a compound of aluminum, sodium and fluorine. There are animal studies that show fluoride's effect on fertility and that it easily crosses the placenta. Richard Foulkes, MD, indicates that, "after 46 years of fluoridating drinking water, no study had taken place on the effect of fluoride on the developing fetus!" How long-term exposure to fluoride may affect the thyroid glands of Americans is not known, nor does there seem to be much interest in finding out.

Tobacco and Alcohol
One of the nasty ingredients in cigarette smoke is thryocyanide, a strong thyroid inhibitor that further compounds the many health risks of heavy smokers and those around them. Smoking harms the thyroid gland by decreasing the thyroid's ability to secrete hormones, and by limiting the hormones' action. Smokers are more prone to have enlarged thyroid glands indicating subclinical hypothyroidism.

Thyroid Gland and the Environment
Alcohol is a highly refined carbohydrate, and requires the whole complement of B vitamins for proper metabolism. A deficiency of B-6 reduces the thyroid's ability to convert iodine into thyroid hormone.¹

**Soy and Other Foods**

Some foods including soy, walnuts, cabbage, cauliflower, and kale can contribute to low thyroid function if eaten frequently, and in large amounts. Hypothyroid individuals are advised to consume these items cautiously until their condition is corrected with supplemental thyroid medication.¹

Many health-conscious Americans are reducing their consumption of meat and dairy products. Instead of making some serious dietary changes, such as consuming more pure water, vegetables, and fruits, they are merely switching over to soy meat substitutes, soymilk substitutes, soy cheese substitutes, and soy ice cream substitutes.

Most of the soy raised in this country has been for animal consumption. The agricultural industry has been quick to recognize that human consumption opens up vast new markets for their soy crop. Every health magazine touts the benefits of soy products informing the reader how Japanese have such a low incidence of breast and other cancers, and that Japanese diets contain more soy than do Americans. The Japanese use small amounts of fermented soy products in their diets, and drink green tea, not soymilk. Also missing in this health discussion is the fact that Japanese consume a great deal more iodine rich sea vegetables than do Americans. Iodine is very supportive of healthy thyroid function. This may be the real reason the Japanese have a lower incidence of breast cancer. We're not likely to see the sea vegetable industry duel it out with the soy industry. Let the consumer beware.

Soy has been known to interfere with thyroid function for over 60 years. What are often referred to as the beneficial isoflavones have been identified as the goitrogenic component of soy. The soy industry acknowledges that soy can depress thyroid function, but only when there is a lack of iodine. A patient consuming a soy protein dietary supplement was reported by the University of Alabama at Birmingham, to have a decrease in thyroxine absorption. The patient was taking thyroid hormones following thyroid surgery. When the patient consumed soy she required higher oral doses of thyroid hormone.⁷

The Weston Price Foundation warns that, "Soy phytoestrogens are potent antithyroid agents that cause hypothyroidism and may cause thyroid cancer. Soy foods can stimulate the growth of estrogen dependent tumors.... Soy phytoestrogens disrupt endocrine function and have the potential to cause infertility and to promote breast cancer in adult women."⁸

This is not to say that all soy is bad. Some women find a welcome relief from menopausal symptoms when consuming a moderate amount of soy products. Soybeans have been genetically modified to tolerate increased doses of the herbicide, Roundup. When purchasing any soy food try to get organic, or non-GMO soy products.

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Thyroid & Environment

Radiation

The connection between radiation exposure and thyroid cancer is well established. Less well known is the connection between radiation exposure and breast cancer. Women who received X-irradiation for tuberculosis, scoliosis, acne, postpartum breast swelling, and benign breast disease have an increased incidence of breast cancer. Even "routine" chest or dental X-rays are not completely risk-free.

Women who receive significant radiation before age 20 are more likely to develop breast cancer before age 35. Radiation-induced breast cancer is increased when exposure occurs in adolescence and early childhood. Japanese women who survived the atomic bomb have an increased incidence of breast cancer. Strontium 90 is deposited in bones and teeth. Cesium 137 and its isotopes concentrate in soft tissue like the breast, liver, spleen and muscles. Radioactive iodine is taken up by the thyroid gland.

In the summer of 1997 the media carried a story about above ground testing of nuclear bombs in Nevada from 1951 to 1958, which exposed 160 million Americans to radiation fallout as it traveled on air currents across the nation. The invisible radioactive particulate matter precipitated down with rain on areas as far away as New York, Massachusetts, Tennessee, North and South Dakota, Idaho and Montana. The National Cancer Institute (NCI) estimated that Iodine 131 fallout from the bomb tests could result in 11,000 to 212,000 thyroid cancers in Americans in the following years.

We do not know how many hundreds of thousands of Americans may have developed impaired or reduced thyroid function, nor do we know how many cancers may have resulted from impaired thyroid function resulting from bomb test fallout.

Women living on Long Island, (New York) have among the nation’s highest incidence of breast cancer. Long Island is situated in very close proximity to four nuclear power reactors in New London and Middletown, Connecticut, and Peekskill, New York, with the Brookhaven nuclear lab right in the middle of Long Island. Increases in breast cancer deaths in both Long Island counties parallel the increase in breast cancer deaths in Connecticut, where two reactors are located.

VIDEO / DVD AVAILABLE

"Health Risks and the Environment"
by Rose Marie Williams, MA
President of the Cancer Awareness Coalition, Inc.
PO Box 533, New Paltz, NY 12561
jwill52739@aol.com
Cost $20.00 (free postage within US)
Specify VIDEO or DVD (60 min.)
Check or money order payable to Cancer Awareness Coalition, Inc.

How environmental risk factors affect health more than inherited genes is discussed in this candid talk by health advocate, Rose Marie Williams, with suggestions about reducing toxic exposure in and around the home. Included are contact numbers for inexpensive water testing, pesticide information, and useful books and pamphlets.

There is sufficient data to substantiate the breast cancer-radiation connection, but it is continually ignored. Most of the physicists and MDs who were hired by the government to research the radiation cancer connection during the 1950s and 1960s were let go, or had their funding cut when the results showed a clear connection between radiation exposure and cancer formation. Janette D. Sherman, MD, author of Life’s Delicate Balance: Causes and Prevention of Breast Cancer, is herself an early radiation researcher. She points out that she and her esteemed colleagues in the field of radiation research, John Golman, PhD, MD, Jay Gould, PhD, Ernest Sternglass, PhD, Rosalie Bertell, PhD, are all approaching, or in their eighth decade of life, and she worries about who will continue their work.

While we no longer have above ground testing of nuclear bombs in this country, Americans are exposed to consistent and steady fallout from properly operating nuclear plants, which by design release radioactive steam on a periodic basis to reduce pressure build-up. At a conference sponsored by the Cancer Awareness Coalition, February 1995, this was explained by physicist, Dr. Ernest Sternglass, who informed that all nuclear power plants operate on a design principle formulated in the 1950s, even though our understanding of the health effects from airborne radioactive particulate matter has progressed greatly in the 50 years since then. Added to this are the cumulative exposures from multiple medical and dental X-rays.

Dr. Mittleman commented on a study indicating a possible link between dental X-rays to pregnant women and low birthweight babies. Causality was not proven, but it does raise another question about what sort of damage might result to the newborn’s thyroid gland from the mother’s exposure to dental or medical X-rays.

As editor of the Holistic Dental Digest PLUS newsletter, Dr. Mittleman strongly advises that a thyroid collar be used in addition to the usual protective drape when dental X-rays are taken. Another unanswered question remains about how many patients did not, and still do not, receive proper protection to the thyroid area when undergoing dental X-rays.

This health consumer always marvels at how radiologists and X-ray technicians attempt to reassure people by claiming how much less dosage is the newest state of the art technology uses. What they are not saying is how hazardous the dosage was from older equipment, and how quickly today’s state of the art, low dose technology will soon be replaced by even newer technology using even less radiation, rendering today’s equipment out of date. Not every hospital, X-ray lab, or dental office has the most up-to-date equipment, and consumers are clueless about how old the technology is, or how much radiation they are being exposed to when they receive X-rays, or how much damage is being done to their entire bodies as well as their thyroid gland.

References