

“Kosher” Salt: A Study of Jewish Cultural Risk Factors for Cancer

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Thyroid Cancer is one of the most common endocrine cancers. Most thyroid tumors are benign, but there is potential for malignancies. Thyroid tumors are three times more likely to form in women than in men. About 32,000 cases a year of thyroid cancer are diagnosed in the United States. Fortunately, it is one of the most curable cancers and can be remedied through surgery, iodine radiation therapy, or thyroid hormone therapy [1].

Several studies indicate that Jewish Americans have a higher risk for developing thyroid cancer compared to other Americans. Researchers from the University of Southern California Cancer Surveillance Program examined the relationship between religion and cancer during the years 1972-1981. The study was performed by comparing death records and information in the Los Angeles cancer registry, which noted each person's religion. The results indicated a higher risk of thyroid cancer in Jews than in other religious groups. The Proportional Incidence Ratio (PIR), a statistical measure used to compare rates of a disease within a population, was calculated. The PIR of Jewish males with thyroid cancer was 2.3, and the PIR for Jewish females was 1.8. These were significantly higher scores than the scores for those who developed thyroid cancer from other religious groups.

In 2007, a study conducted in New York explored a possible association between living in ultra-Orthodox Jewish neighborhoods and a recent increase in thyroid cancer. These communities, mostly in Brooklyn, NY, were characterized based on the percentage of children who spoke Yiddish and the proximity to an Orthodox synagogue. The study showed that there was about a 40% higher risk of thyroid cancer development for Jews living in these ultra-Orthodox Jewish communities [3].

It is interesting to note that the higher risk for thyroid cancer appears to affect specifically Orthodox Jews. In both of these studies, the risk factors appear to be environmental and cultural, rather than genetic. The goal of this paper is to explore possible environmental risk factors of thyroid cancer that may pertain to Orthodox Jews.

One plausible risk factor for developing thyroid cancer is an iodine deficient diet. Iodine is a mineral found in some foods, such as fish and dairy products, as well in iodized salt. Iodine is important in the functioning of the thyroid because the follicular cells in the thyroid use iodine to produce hormones that are involved in some of the body's main functions, such as metabolism, heart rate, and blood pressure [1]. A lack of iodine in humans causes an increase in the production of the thyroid stimulating hormone

(TSH), which leads to the formation of nodules in the thyroid, known as goiters. Studies have shown that goiters are more prevalent in iodine poor populations. In a population where goiters are widespread, people are less aware of changes in their thyroid gland, which may delay diagnosis of thyroid cancer. More aggressive tumors form when there is a lack of iodine because the increased cell proliferation will be more susceptible to mutagens and carcinogens [4].

Aside from the direct carcinogenic effects of thyroid cancer, studies have shown that there is a correlation between high intakes of saltwater fish and cruciferous vegetables, and thyroid disorders. This correlation was magnified specifically in iodine deficient regions [5].

It is important for people, especially pregnant and lactating women, to have an adequate amount of iodine. The World Health Organization and UNICEF recommend that preschoolers (birth - 6 years) should have 90 µg of iodine daily, schoolchildren (6 -12 years) should have 120 µg iodine/day, adolescents (age 12 years and up) require a daily dose of 150 µg iodine, and pregnant and lactating women should have 250 µg/day of iodine [6]. A majority of the dietary iodine that is normally consumed is from iodized salt, which is salt that is fortified with iodine. Most of the table salt that is used in the United States is iodized.

It is possible that in the ultra-Orthodox Jewish communities, there is less of an awareness of the importance of iodine in the diet. Most of the salts used in these communities are coarse kosher salt and sea salt. Both kosher salt and sea salt lack iodine fortification. Kosher salt is a coarser kind of salt that is also not processed and does not contain additives. Sea salt is evaporated from oceans and saltwater lakes and is processed very minimally. Table salt, on the other hand, is mined from underground salt deposits and usually includes anti-caking additives and iodine [7, 8].

Thyroid cancer is not the only cancer which has environmental and cultural risk factors that relate to Orthodox Jews. In contrast to the heightened risk of Orthodox Jews developing thyroid cancer, cervical cancer and uterus-related diseases have a much lower rate in the Jewish, mainly Orthodox, population. There have been several studies suggesting possible explanations for this lower risk of cervical cancer, with one possible explanation being the circumcision of males. This is based on the theory that cervical cancer is related to the transfer of smegma during cohabitation, which is produced more in uncircumcised males [9]. Additionally the observance of

taharas hamishpacha, laws of family purity, lowers the risk for cervical cancer. Cohabitation with multiple partners and early age of intercourse are other lifestyle risk factors that are forbidden by Jewish law and may contribute to the lower rates of cervical and uterus-related diseases in the Orthodox Jewish community [10].

Endometriosis is a disorder which occurs when the endometrium grows outside the uterus. In a study conducted by Shaare Zedek Medical Center in Jerusalem, only 1.12% of the 1,434 hysterectomies studied indicated endometriosis. One of the possible reasons for this low incidence of endometriosis is the adherence of the laws of taharas hamishpacha by the Orthodox population. By abstaining from cohabitation during menses and for an additional 7 days afterwards, there is a lower risk of endometrial cells passing into the fallopian tubes during intercourse, causing endometriosis [11].

It is interesting to note how Jewish cultural and environmental factors have an effect on both of these types of cancers in different ways. In regard to cervical cancer, keeping the mitzvos of bris millah and taharas hamishpacha, in addition to living a non-promiscuous lifestyle, lower the risk for cervical cancer. In contrast, thyroid cancer has a high occurrence in populations who

choose to use not processed salts, in order to be more careful with the laws of kashrus.

While the Torah asks of us to be very careful with the laws of keeping kosher, Judaism also stresses the importance of watching one's health. The Torah commands "Venishmartem meod lenafshoseichem," be very careful about your lives" [Devarim 4:15]. The Rambam writes in Hilchos De'os [4:1], "Keeping the body healthy and whole is part of the ways of Hashem, as it is impossible to understand the will of Hashem if one is sick. Therefore, one has to be careful to distance himself from things which ruin the body." It is important to realize that adherence to halacha is beneficial to us in every aspect of our lives, including our health. However, we must also have an active role in taking care of our bodies and providing them with the proper nutrition.

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