

Occupational exposure to biocides associated with higher risk of thyroid cancer

March 31, 2017

Workers exposed to chemicals like deodorizers, sanitizers, disinfectants and sterilizers on the job may be more likely than other people to develop thyroid cancer, a recent study suggests.

Occupational exposure to these chemicals, known as biocides, was associated with a 65 percent higher risk of thyroid cancer, the study found. For people whose jobs might have led to the most cumulative exposure to biocides over time, the odds of thyroid cancer was more than doubled.

The study also looked at pesticides, and didn't find an increased risk of thyroid cancer linked to these agricultural chemicals.

"Limited studies have investigated occupational exposure to pesticides in relation to thyroid cancer and have reached inconsistent results," said lead study author Dr. Yawei Zhang, an environmental health researcher at Yale University in New Haven, Connecticut.

"Our study did not support an association between occupational exposure to pesticides and risk of thyroid cancer, but suggested that occupational exposure to other biocides might be associated with an increased risk of thyroid cancer," Zhang said by email.

Scientists aren't certain what causes thyroid cancer, though the odds of these malignancies are higher with certain genetic disorders and with exposure to high amounts of radiation, especially during childhood.

Women are much more likely to get thyroid tumors than men, and this type of cancer is more common in white people than in other racial or ethnic groups.

For the current study, researchers compared data on 462 adults with thyroid cancer in 2010 and 2011 to 498 people who didn't get these tumors but who were otherwise similar and around the same age.

Researchers asked study participants to report all jobs held for at least one

year during their lifetimes and to provide detailed information on their job title, duties, company name, type of industry and dates of employment.

Then, researchers calculated potential exposure to biocides and pesticides based on a state database of occupational contact with specific chemicals and pollutants.

Pesticides included primarily agricultural chemicals like insecticides, herbicides and rodenticides. The jobs most often linked to these chemicals were farmer, rancher and other agricultural managers; postal worker; and supervisor of landscaping, lawn services and grounds keeping workers.

Biocides in the study were typically used in medicine or cleaning. Jobs most often tied to these chemicals included healthcare providers involved in diagnosing or treating patients; psychiatric and home health aides; and building cleaning workers.

Women with any occupational exposure to biocides were 48 percent more likely to develop thyroid cancer, while men had more than tripled odds, the study found.

Although the underlying mechanisms linking biocides to thyroid cancer are unclear, it's possible that these chemicals alter thyroid hormones, researchers note. Triclosan, for example, a chemical widely used in cleaning products, has been shown to decrease levels of two thyroid hormones involved in growth and metabolism.

Another chemical, the wood preservative pentachlorophenol, has been shown to lower thyroid hormone levels in rats, the authors also point out.

The study wasn't a controlled experiment designed to prove biocides or pesticides directly cause thyroid cancer.

Other limitations include the five-year age bands researchers used to compare people with thyroid tumors to similar healthy individuals. It's also possible the state data on occupational chemical exposure might not always reflect the level of exposure to certain biocides or pesticides by individual people in the study.

But the findings suggest it makes sense for people to be cautious about biocide

and pesticide exposure, researchers conclude.

“People should take caution when they apply pesticides or other biocides in work place or at home by wearing protective clothes or mask and washing hands afterwards,” Zhang said.

Source:

<http://yalecancercenter.org/>
