

# Lower thyroid stimulating hormone levels elevate risk of thyroid cancer

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A doctor performing physical exam palpation of the thyroid gland. Credit: Dreamstime

There is an increased risk of thyroid cancer associated with lower-than-normal thyroid hormone levels, a finding that could have a major impact on patients fighting the disease.

The Yale-led study, published in *American Association for Cancer*

*Research* journal examined the effect of Thyroid Stimulating Hormone (TSH) on the development of human papillary thyroid [cancer](#) (PTC).

Study findings were based on 741 participants (341 women, 400 men) from the U.S. military who had regular blood draws stored by the Armed Forces Surveillance Center. When tested, an inverse association between PTC and TSH levels within the normal range was observed among both men and women. PTC decreased with increased TSH levels among both men and women, the researchers found.

"Earlier studies showed that higher TSH level increases the risk of PTC. However, these were case-control studies in which TSH levels were measured in [blood samples](#) collected among patients who had already had the disease," said Yawei Zhang, M.D., Ph.D., an associate professor at the Yale School of Public Health. "Our study looked at TSH levels measured in blood samples collected several years before the disease diagnosis, therefore, our study demonstrated that low TSH level increases PTC. These findings could have significant clinical implications for physicians managing patients with abnormal thyroid functions."

Thyroid cancer has the highest prevalence of all endocrine malignancies, and its incidence is increasing faster than any other malignancy among both men and women. In the United States, thyroid cancer is the ninth most common cancer and PTC accounts for more than 80 percent of all thyroid cancers. But causal factors underlying [thyroid cancer](#) remain poorly understood. TSH is the major growth factor of thyroid cells and regulator of [thyroid](#) functions.

Provided by Yale University

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