

# Low thyroid levels may signal heightened risk of death in hospitalized patients

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Older individuals hospitalized with a serious condition may face a slimmer risk of surviving if their thyroid hormone levels are low, according to a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*.

The thyroid gland, located in the neck, produces hormones that regulate the body's temperature, consumption of oxygen and metabolism. The gland produces two hormones, triiodothyronine (T3) and thyroxine (T4), which travel through the blood to spur activity in various tissues.

"When older individuals have low [levels](#) of thyroid hormones, particularly T3, it reflects that the body is weak and more susceptible to the harmful effects of disease," said the study's first author Pedro Iglesias, MD, of Hospital Ramón y Cajal in Madrid, Spain. "As a result, older individuals who have a reduced ability to synthesize T3 hormones have a higher rate of mortality, both in the short- and long-term."

As part of the prospective observational study, researchers measured thyroid hormone levels in all patients who were 65 years of age or older when they were admitted to the Hospital General in Segovia, Spain in 2005. For 404 patients, researchers tracked the length of hospital stay and the survival rate among the group as of Jan. 1, 2012.

During the seven-year study, 323 patients died. The study found an association between low levels of thyroid hormones and mortality. The analysis found low levels of [thyroid hormone](#), in particular T3, tended to

be a predictor for all-cause mortality. The patients in the group with the lowest levels of T3 hormones and thyroid-stimulating hormone, which the body uses to activate the [thyroid gland](#), also had higher rates of death from cardiovascular disease.

"T3 could be a useful measure for gauging an older individual's chances of surviving an acute illness requiring hospitalization," Iglesias said. "The reduced ability to synthesize the [hormone](#) observed in this group of [patients](#) could be related to the severity of the disease and its prognosis."

**More information:** The article, "Thyroid Function Tests and Mortality in Aged Hospitalized Patients: a 7-year Prospective Observational Study," is scheduled to appear in the December 2013 issue of *JCEM*.

Provided by The Endocrine Society

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