

Pediatric obesity may alter thyroid function and structure

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In addition to its strong associations with hypertension, cardiovascular disease, and diabetes, pediatric obesity may induce alterations in thyroid function and structure, according to a new study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*.

Thyroid hormones drive metabolism, however demonstration of a direct or strong correlation of obesity with deficient thyroid function has been controversial, and previous studies provide conflicting conclusions. While some studies have found that thyroid disorders may lead to obesity, this recent study shows that in some cases, it is the obesity that may cause the disorder.

"Our study shows that alterations in thyroid function and structure are common in obese children and we may have uncovered the link," said Giorgio Radetti, M.D., of the Regional Hospital of Bolzano in Italy and lead author of the study. "We found an association between body mass index and thyroid hormone levels which suggests that fat excess may have a role in thyroid tissue modification."

This study evaluated 186 overweight and obese children over a period of nearly three years. Researchers measured subjects' thyroid hormone levels and thyroid antibodies and also performed a thyroid ultrasound.

The presence of thyroid antibodies would suggest a diagnosis of Hashimoto's thyroiditis, an autoimmune disease of the thyroid where T-cells attack the cells of the thyroid. In this study, 73 children did not show these antibodies, yet their ultrasound pattern was still suggestive of Hashimoto's thyroiditis.

"The ultrasound findings are a bit mysterious," said Dr. Radetti. "However, the findings do suggest the existence of a low-grade inflammation state, which

has been known to characterize obesity."

Thyroid function has been shown to return to normal after weight loss, said Dr Radetti, raising the question of the potential reversibility of thyroid abnormalities shown on an ultrasound. However, researchers still do not know whether the persistence of thyroid abnormalities in obese children may also progress into chronic thyroid disease in early adulthood. Dr. Radetti says more studies are needed to answer these questions.

Source: The Endocrine Society

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