

Smoking Not Associated With Hypothyroidism

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WASHINGTON — Smoking was associated with an increased risk of subclinical hypothyroidism but no increase in clinical disease in unpublished data from the Danish Investigation of Iodine Intake and Thyroid Disease.

Dr. Peter Laurberg, a professor of endocrinology at Aarhus University Hospital in Denmark, reported on 140 subjects

with spontaneous hypothyroidism, 42 were current smokers, 47 were previous smokers, and 51 were nonsmokers. Of 559 healthy control subjects, 193 were current smokers, 147 were previous smokers, and 219 were nonsmokers.

The study followed a cohort of individuals prior to mandatory iodine supplementation in Denmark in 2000 and involves a prospective registry of hyper- and hypothyroid patients. In an examination of smoking and subclinical disease, 1,619

smokers had a nonsignificant odds ratio of 1.15 for having subclinical hyperthyroidism compared with 2,800 nonsmokers. Alternatively, smokers had an odds ratio of 0.47 for subclinical hypothyroidism.

One proposed mechanism for this observation is that smoking produces cyanide, which is detoxified in the liver and results in thiocyanate. A competitive inhibitor like thiocyanate reduces iodide transport into the cell in a manner similar to decreasing iodine intake.

Due to autoregulation, the thyroid cells compensate by attempting to pump more iodide into the cell. However, the upregulation of these processes produces peroxide. "So if you are deficient over a long period without being severely deficient ... you get a thyroid with irregular growth and function and necrosis," said Dr. Laurberg.

Smoking also might protect against autoimmunity, he said. Smokers have been found to have lower levels of thyroid autoantibodies than nonsmokers. ■

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References: 1. Mulligan T, Borel R, Frick M, Zuraw Q, Stemhagen A. The HIM Study (Hypogonadism in Males): an epidemiological program to estimate the population prevalence of hypogonadism in men over 45. Poster presented at: Annual Scientific Assembly of the American Academy of Family Physicians; October 13-17, 2004; Orlando, Fla. 2. AndroGel [package insert]. Marietta, Ga: Unimed Pharmaceuticals, Inc; 2005. 3. Swerdloff RS, Wang C, Cunningham G, et al, and the Testosterone Gel Study Group. Long-term pharmacokinetics of transdermal testosterone gel in hypogonadal men. *J Clin Endocrinol Metab.* 2000;85:4500-4510.

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