

## News Summary

### **P1-508: Genetic predisposition to high thyroid-stimulating hormone is linked to long life**

Results of a new study challenge the current medical practice of treating a mildly underactive thyroid in older people by showing that the condition may actually contribute to healthy aging—at least in some people. The results will be presented Wednesday at The Endocrine Society's 91st Annual Meeting in Washington, D.C.

Millions of older people have a very small increase in the level of thyroid-stimulating hormone (TSH) in the blood, which is called mild or subclinical hypothyroidism. Overt or more severe hypothyroidism (underactive thyroid) can impair the body's function, causing tiredness, depression and weight gain, and requiring lifelong treatment with thyroid hormone medication. It is unclear, however, whether mild hypothyroidism worsens health, but most doctors treat it with thyroid medication, according to study co-author Martin Surks, MD, professor of medicine and pathology at Albert Einstein College of Medicine, Bronx, N.Y.

Surks and his colleagues at Albert Einstein speculated that genes are responsible for mild hypothyroidism in Ashkenazi Jews (those of Eastern European descent) and possibly other people, and that this increase is beneficial, because recent research shows that TSH increases with age in people who do not have thyroid disease, even those who live 100 years. The researchers studied a group of 236 Ashkenazi Jews who were about 100 years old, as well as their children: 444 men and women, with a median (midpoint) age of 69. For the control group, they included 188 spouses of the offspring (median age, 70). None of the subjects had known thyroid disease.

The TSH levels in the children were higher than in others of the same age (the children's spouses), but still lower than in their long-lived parents. On heritability analysis, TSH levels in parents and their children were closely related, indicating that heredity and genes could be involved, Surks said.

Further testing found genetic variants, called SNPs, in the TSH receptor, an important protein that allows TSH to work in the cells. Subjects who had these genetic variants had higher TSH levels than did individuals without the variants, the authors found. Furthermore, the parents and their children were much more likely to have the genetic variants than the unrelated group who were the same age as the children.

“The fact that genetic changes appear to underlie the increase in TSH in older Ashkenazi Jews suggests that this increase in TSH contributes to healthy aging and does not necessarily indicate hypothyroidism,” Surks said. “If these findings are confirmed in other populations, the current designation of subclinical hypothyroidism in elderly people as an illness that needs treatment should be changed.”

The National Institutes of Health and the Glenn Foundation for Medical Research in Carpinteria, Calif., helped fund this study.

###