



## ANALYSIS AND COMMENTARY ● ● ● ● ●

Strengths of this study include the very large sample size, which allowed the investigators ample power to study sex and age subgroups and both treated and untreated hypothyroidism. Information about some potentially important covariates, such as race/ethnicity, body-mass index, and smoking status, was not ascertained. Importantly, it is possible that the lack of a log-linear relationship between TSH and free T<sub>4</sub> was merely an artifact due to inadequacies of the free T<sub>4</sub> assay used. Future studies could conduct similar analyses using different free T<sub>4</sub> assay methods, in particular the gold standard methods of equilibrium dialysis or isotope-dilution liquid chromatography with tandem mass spectroscopy.

What relevance do these results have for clinical practice? These data suggest that TSH reference ranges are not one-size-fits-all, and the use of a single TSH range for all subpopulations might result in misclassification of thyroid status in some cases, in particular the inappropriate diagnosis of subclinical hypothyroidism. The age-associated increase in serum TSH among euthyroid individuals seen in this and previous studies (4) argues against routine treatment of mild TSH elevations in elderly patients. Age- and sex-specific TSH reference ranges might be used to more accurately classify thyroid status (5). Although race and ethnicity were not examined by Hadlow and colleagues, racial and ethnic variability in serum TSH values have been described previously (5) and racial/ethnic subpopulation-specific TSH values might also be helpful in some regions.

## References

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