



Roma, 9-12 novembre 2017

16° Congresso Nazionale AME
Joint Meeting with AACE Italian Chapter
Update in Endocrinologia Clinica



ITALIAN CHAPTER



HOW TO MANAGE HYPOTHYROIDISM: Q&As

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Conflitti di interesse



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Ai sensi dell'art. 3.3 sul conflitto di interessi, pag 17 del Regolamento Applicativo Stato-Regioni del 5/11/2009, dichiaro che negli ultimi 2 anni non ho avuto rapporti diretti di finanziamento con soggetti portatori di interessi commerciali in campo sanitario



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LT4 treatment endpoint



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- TSH is the most reliable marker of adequacy of replacement treatment, and a value within the reference range (0.4–4.0mIU/L) should be considered the therapeutic target

ATA Guidelines for the Treatment of Hypothyroidism

THYROID Volume 24, Number 12, 2014

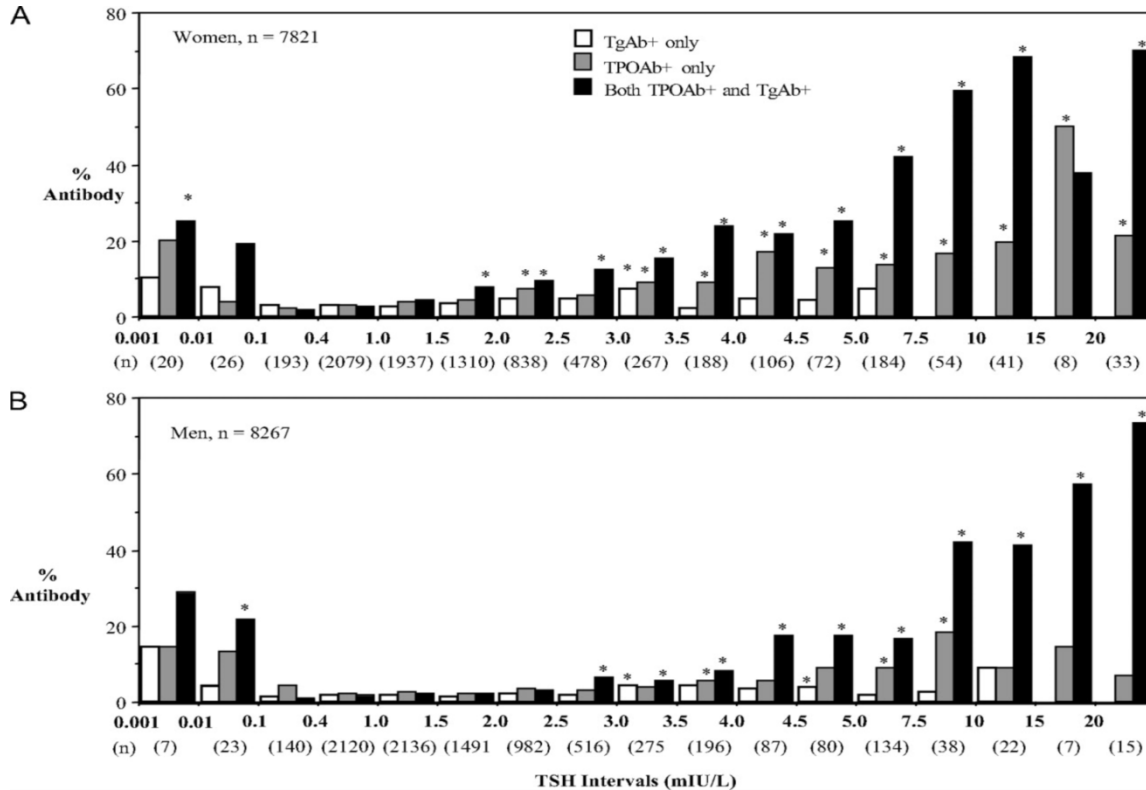


TSH Upper Reference Limits may be skewed by occult thyroid dysfunction



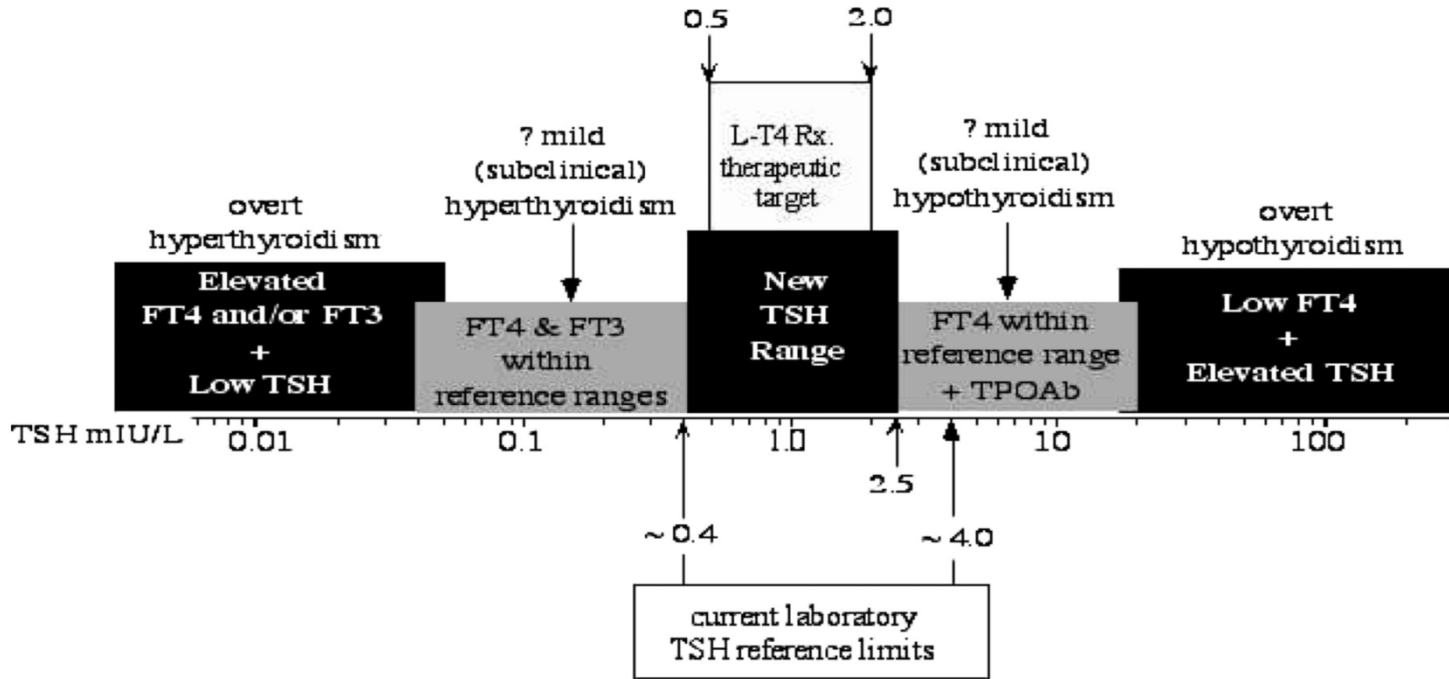
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Proposed new TSH ranges and clinical correlations



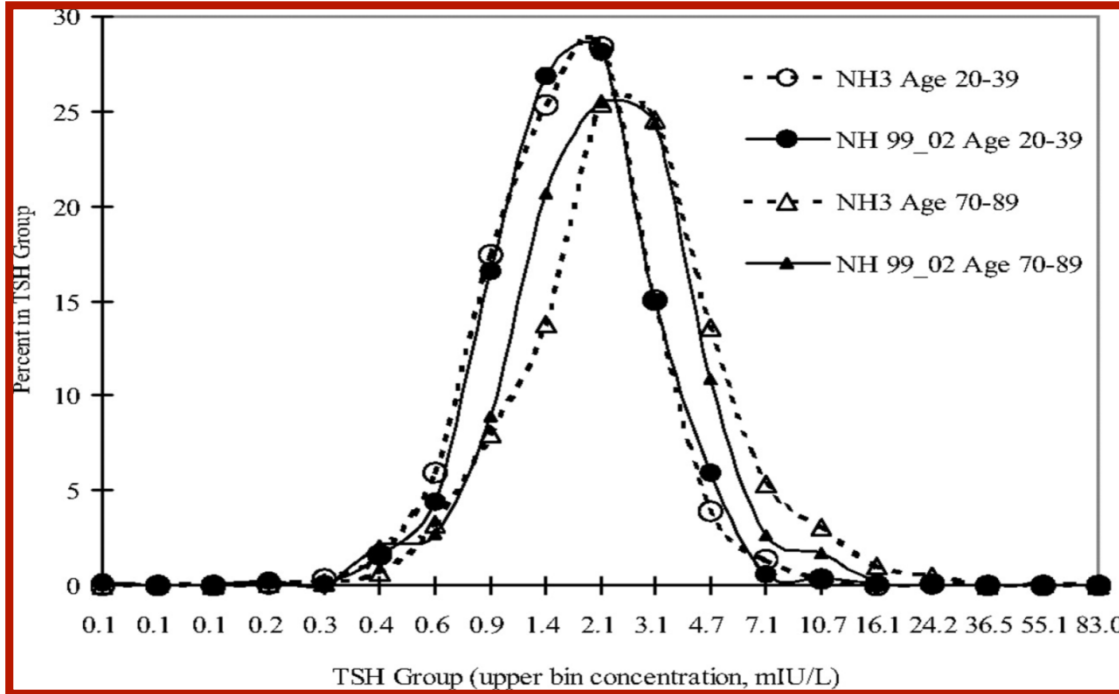
Age-related variations in TSH levels



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The 97.5 centile is about:
3.6 mIU/l in people 20–39 yr
5.9 mIU/l in people 70-79 yr
7.5 mIU/l in people ≥80 yr.

J Clin Endocrinol Metab, 2007 92:4575–4582.
J Clin Endocrinol Metab, 2010, 95(2):496–502

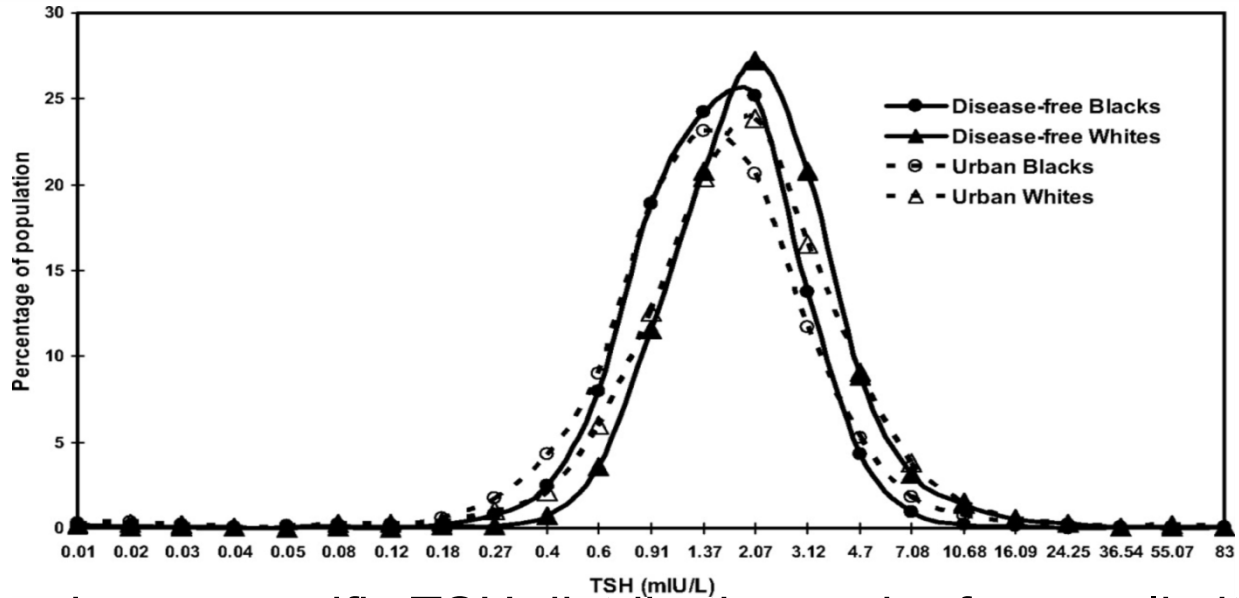


Race-related variations of TSH levels



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Age- and race-specific TSH distribution and reference limits should be employed to provide clinicians accurate limits for specific populations and guidance for further evaluation of thyroid dysfunction.



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Hypothyroidism: Q&As



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Defining HypoThy: different TSH cut-offs for different life seasons or one for all?





Is TSH enough?



- The diagnosis of primary hypothyroidism requires the measurement of both TSH and FT4. Subjects with a TSH of >10 mU/L and FT4 below the reference range have overt primary hypothyroidism and should be treated with thyroid hormone replacement.

**UK Guidelines for the use of
Thyroid Function Tests, 2006**



Is TSH measurement enough?



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- Assessment of serum free T4, in addition to TSH, should be considered when monitoring L-thyroxine therapy. Grade B, BEL 1
- Serum total T3 or assessment of serum free T3 should not be done to diagnose hypothyroidism. Grade A, BEL 2

**AACE & ATA CLINICAL PRACTICE GUIDELINES
FOR HYPOTHYROIDISM IN ADULTS, 2012**



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Hypothyroidism: Q&As



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- **Is TSH measurement enough?**





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IN FAVOUR of treatment



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Review | Clinician's Corner



September 22/29, 2010

More ▾

Subclinical Hypothyroidism and the Risk of Coronary Heart Disease and Mortality

Nicolas Rodondi, MD, MAS; Wendy P. J. den Elzen, MSc; Douglas C. Bauer, MD; [et al](#)

- **Conclusions** Subclinical hypothyroidism is associated with an increased risk of CHD events and CHD mortality in those with higher TSH levels, particularly in those with a TSH concentration of 10 mIU/L or greater.

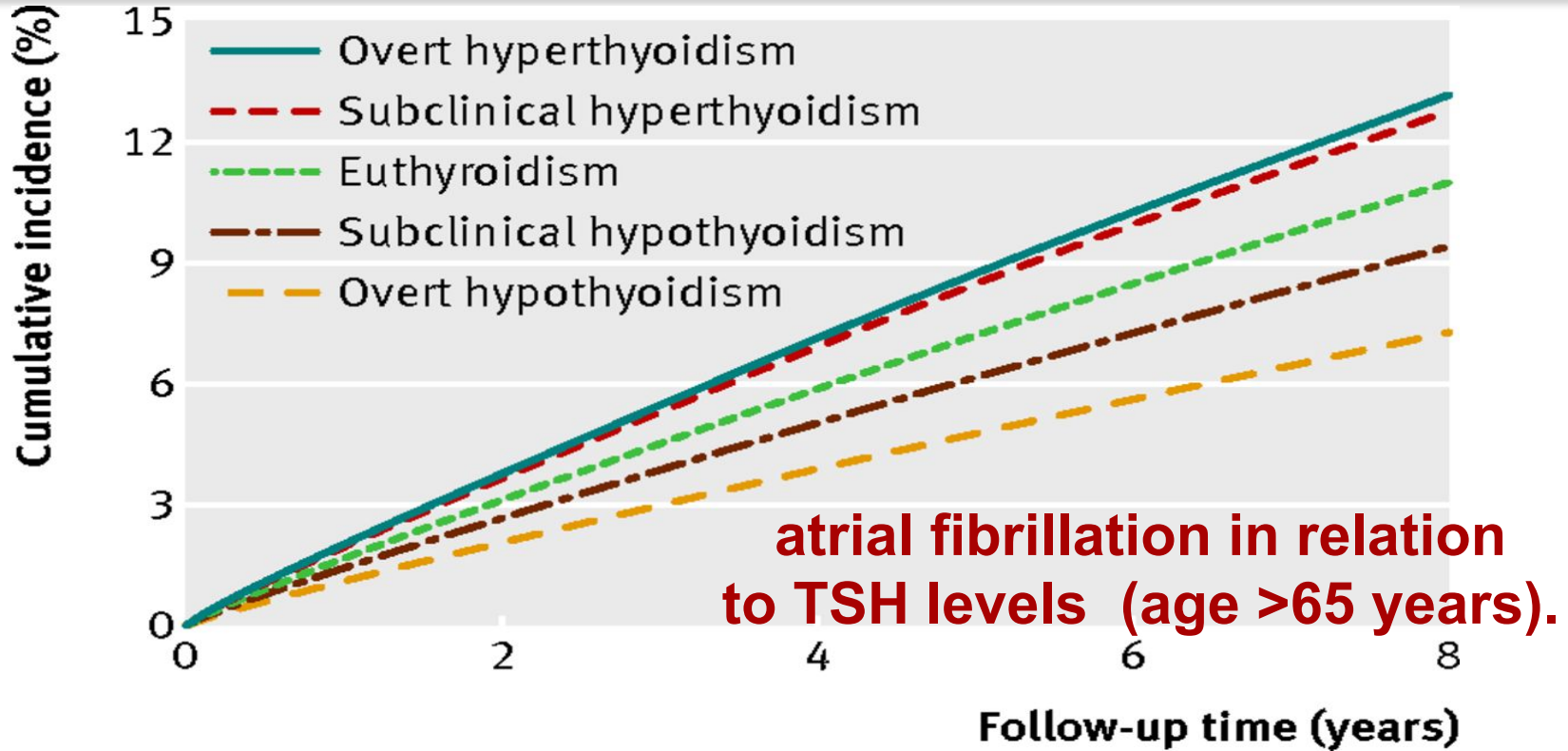


AGAINST treatment



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Christian Selmer et al. BMJ 2012



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Hypothyroidism: Q&As



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- **SC HypoThy treat or treat not?**





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Medications reducing Levothyroxine Absorption



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<i>Medications</i>	<i>Type of study</i>	<i>No. of subjects</i>	<i>TSH values mIU/L (w/o medication, c/w with medication)</i>	<i>Binding study?</i>
Calcium carbonate	Prospective, cross-over trial	20	1.6 vs. 2.7	Yes, LT ₄ adsorbs to calcium
PPI (lansoprazole)	Retrospective chart review of PPI initiation	55 controls, 37 taking PPI	Increased by 0.11 vs. 0.69	n/a
Cholestyramine	Case reports	2	Increased while taking cholestyramine	Yes, cholestyramine bound to LT ₄
Selevamer	Retrospective chart review	67	Mean TSH 20 with selevamer	n/a
Ferrous sulfate	Nonrandomized, prospective trial	14	TSH 1.6 vs 5.4	Yes, T ₄ formed a complex with iron
Ferrous sulfate	Case report (patient also pregnant and post partum)	1	TSH 1.3 c/w 29	
Aluminum-containing antacid	Case report	1	TSH 1.1 vs. 36	n/a
Aluminum-containing antacid	Nonrandomized, prospective study	5	TSH increased from 2.6 to 7.2	Yes, T ₄ adsorbed to antacid
Sucralfate	Case report	1	TSH increased from normal to 30	n/a
Sucralfate	Placebo-controlled, randomized	9	TSH 2.7 vs. 4.6	n/a
Raloxifene	Case report	1	TSH normal vs. 9.4	n/a
Orlistat	Case report	1	TSH 0.03 vs. 73	n/a
Cation exchange resin	Case report	1	TSH 0.67 vs. 139	Yes, T ₄ adsorbed to sodium polystyrene sulfonate



Interference with LT4 absorption



Bile acid sequestrants (cholestyramine, colestipol, colesevelam)
Sucralfate
Cation exchange resins (Kayexelate)
Oral bisphosphonates
Proton pump inhibitors
Raloxifene^a
Multivitamins (containing ferrous sulfate or calcium carbonate)
Ferrous sulfate
Phosphate binders (sevelamer, aluminum hydroxide)
Calcium salts (carbonate, citrate, acetate)
Chromium picolinate
Charcoal

Orlistat^b
Ciprofloxacin
H₂ receptor antagonists^a
Malabsorption syndromes

- Celiac disease
- Jejunioileal bypass surgery
- Cirrhosis (biliary)
- Achlorhydria

Diet

- Ingestion with a meal
- Grapefruit juice^a
- Espresso coffee
- High fiber diet
- Soybean formula (infants)
- Soy



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Hypothyroidism: Q&As



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- **LT4 formulations: equally effective?**





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Are hypothyroid patients satisfied with their doctors?



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- No, doctors they look at paperwork and if the numbers are within the range the doctor says they should be in you are fine. They never ask how you are feeling.
- No doctor would pay attention to symptoms if TSH is “normal”
- No. Too much reliance on the TSH. Too many doctors think it all revolves around the TSH
- Doctors, they care about their numbers. Depression, weight, aches, pains, fatigue, hair loss....I almost felt like (with what they implied) it was my fault....lack of exercise, not perfect diet, single mom, depression etc.





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The Use of L-T4 + L-T3 in the Treatment of Hypothyroidism



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Is There an Unmet Need in L-T4-Treated Hypothyroid Patients?

Recommendations

- In L-T4-treated hypothyroid patients with normal serum TSH values, psychological distress, impaired well-being and cognitive disturbances occur more often than in controls
- Data suggest that 5–10% of L-T4-treated hypothyroid patients with normal serum TSH have persistent symptoms which can be related to the disease and L-T4 therapy

2012 ETA Guidelines



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Hypothyroidism: Q&As



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- **Is LT4 always the solution?**





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Thank you for your attention!