

Subclinical hypothyroidism

Dania Hirsch

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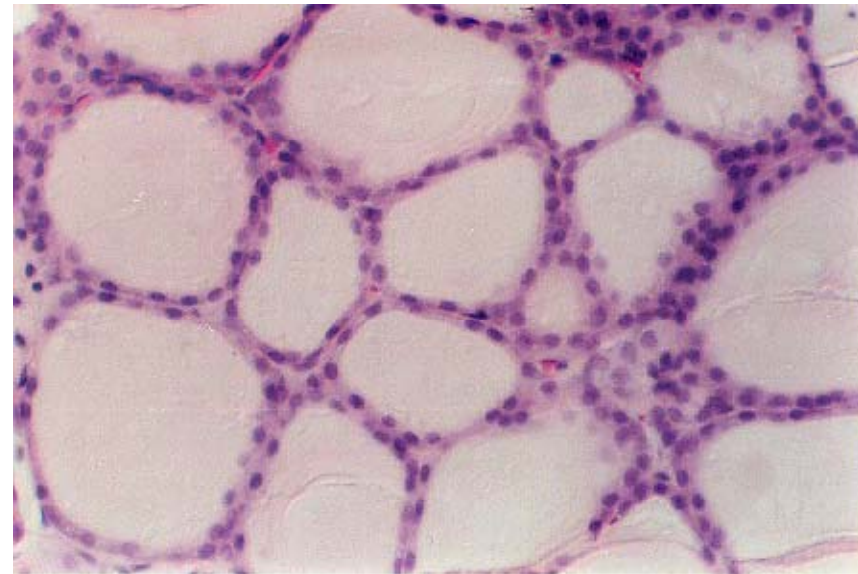
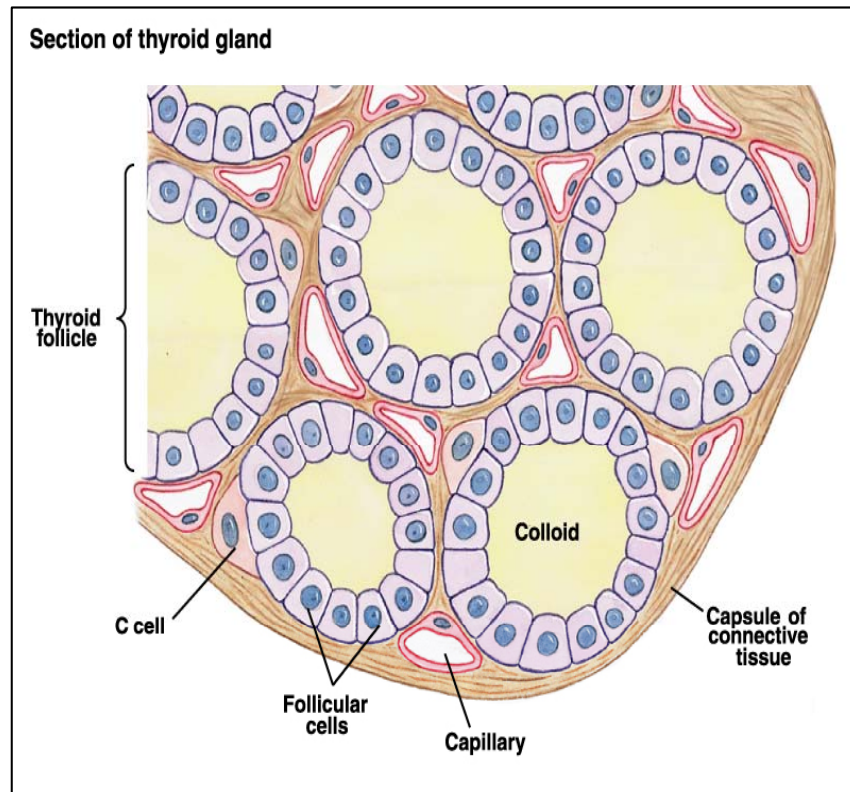
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12/2011

Definition

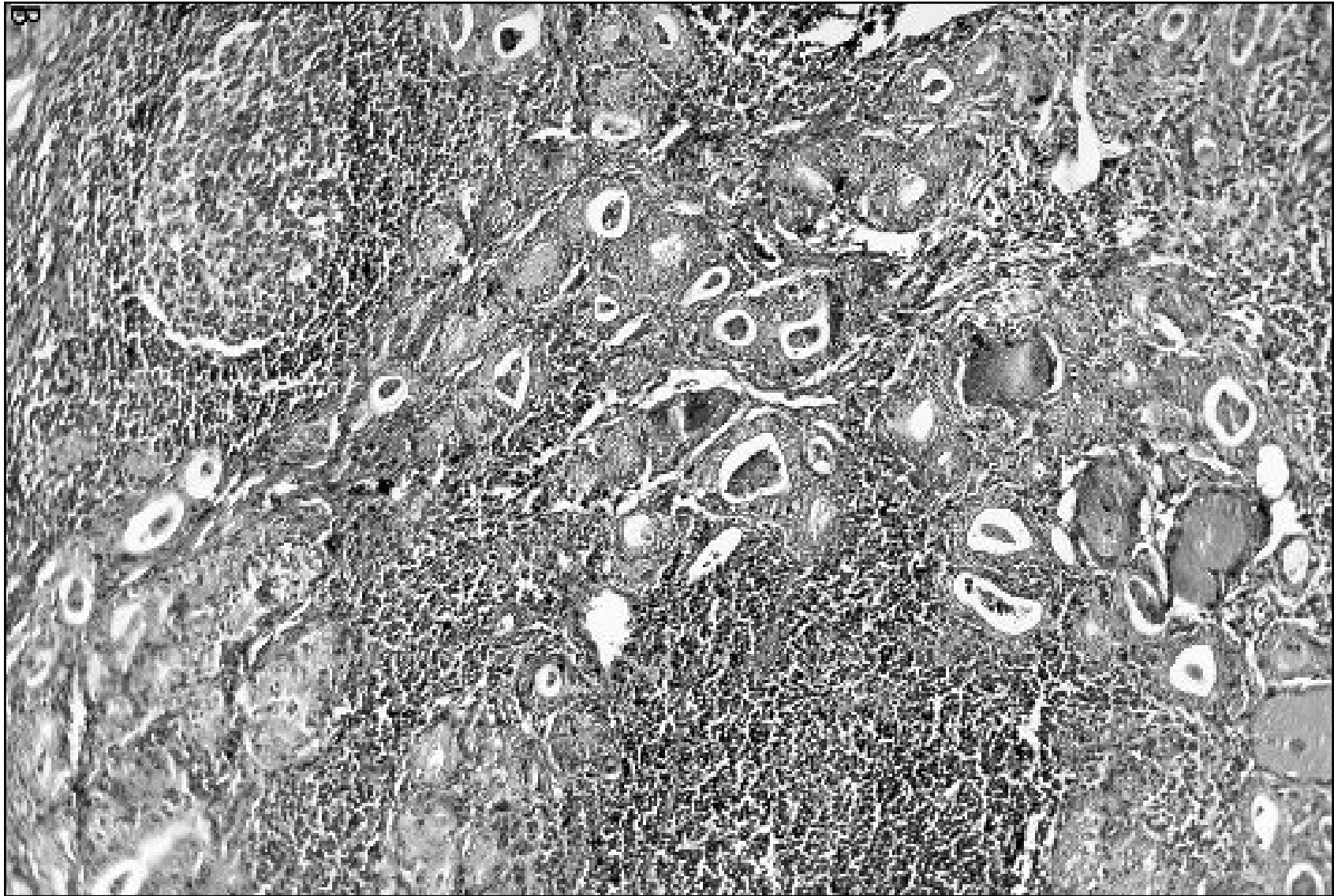
- Purely biochemical
- Serum FT4 and total or free T3 (FT3) levels within their respective reference ranges in the presence of abnormal serum TSH levels

Anatomy of the Thyroid Gland

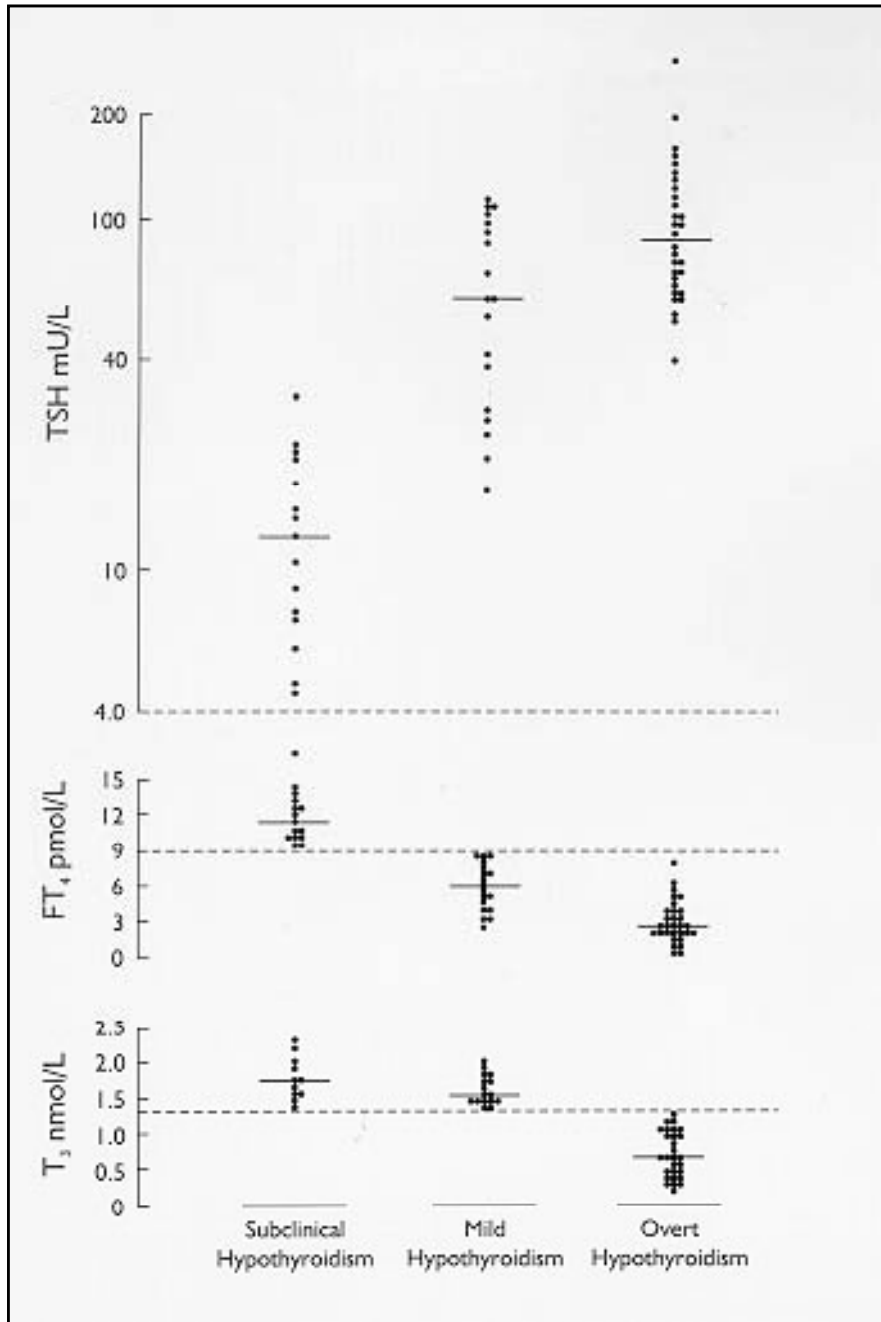




Dr. Hakaru Hashimoto



Pathology of Hashimoto's thyroiditis. In this typical view of severe Hashimoto's thyroiditis, the normal thyroid follicles are small and greatly reduced in number, and with the hematoxylin and eosin stain are seen to be eosinophilic. There is marked fibrosis. The dominant feature is a profuse mononuclear lymphocytic infiltrate and lymphoid germinal center formation.



Individual and median values of thyroid function tests in patients with various grades of hypothyroidism. Discontinuous horizontal lines represent upper limit (TSH) and lower limit (FT₄, T₃) of the normal reference ranges.

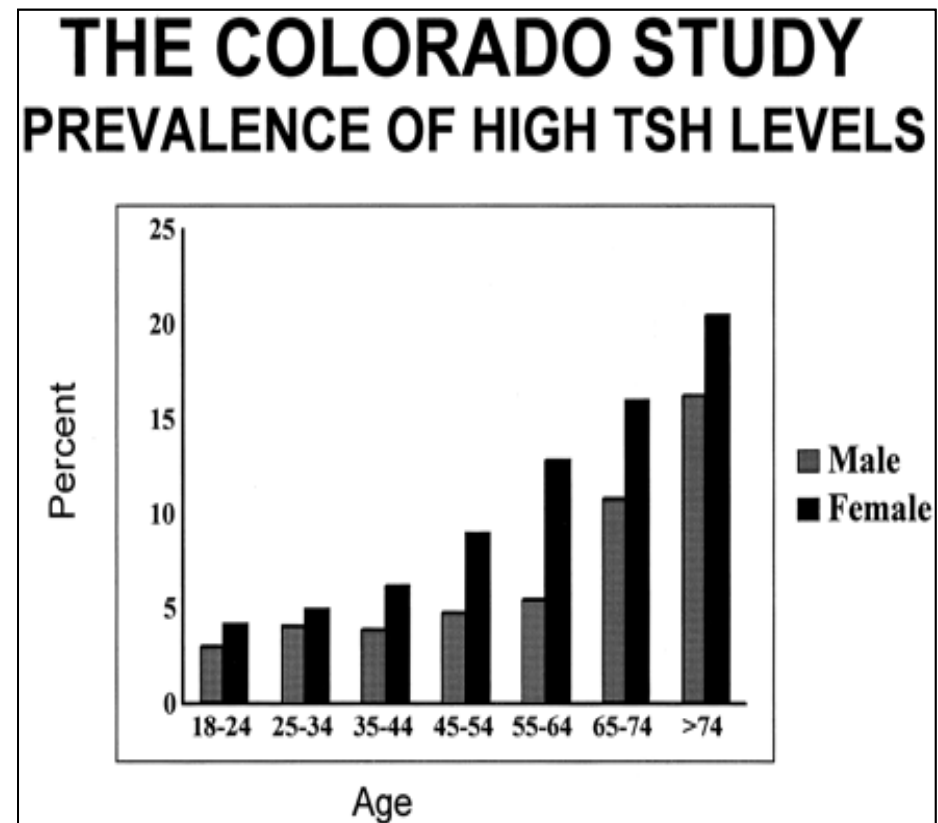
Prevalence of schypoT

- The prevalence of schypoT has been reported to be between 4 and 10% of adult population samples

STUDY	Ref	No	TSH (mIU/l)	PREVALENCE
Whickham survey	Clin Endocrinol (Oxf) 1977 7:481–493	2779	>6	7.5% of females and 2.8% of males
NHANES III	J Clin Endocrinol Metab 2002 87:489–499	16,353	>4.6	4.3%
Colorado	Arch Intern Med 2000; 160: 526–534	25000	>5.1	9.5%

The Colorado study

- 9.5% of all subjects had an elevated serum TSH concentration
- 75% of these individuals had serum TSH levels in the 5–10 mIU/liter range.
- In each age decade, a higher percentage of women than men had an elevated serum TSH concentration; the difference was significant after age 34 yr (P 0.01).



Arguments for and against replacement therapy of SChypoT

For therapy

- T4 is not normal for the patient
- It may progress to overt hypoT
- It may be associated with impaired function of various organs which is reversible with treatment:
 - Cardiovascular
 - quality of life/neurocognitive psychiatric
 - fertility
- Therapy is simple and inexpensive

Against therapy:

- A considerable proportion of patients will not feel more healthy if treated
- Therapy involves lifelong taking of medication
- The risk of overtreatment involves as much risk as no therapy
- The magnitude of clinical abnormalities is not clear
- It is very common and more evidence is needed before treatment is generally recommended

Natural history of subclinical hypothyroidism

Progression to overt hypoT

Whickham Survey (20 years follow-up)

- Old age, female sex, and TPO antibodies were associated with an increased risk of progression to overt hypothyroidism.
- The annual rate of progression to overt hypothyroidism was **4.3%** in women with both raised serum TSH and antithyroid antibodies, 3% if only serum TSH was raised, and 2% if only antithyroid antibodies were present.

Symptoms, quality of life, and cognitive function in subclinical hypothyroidism

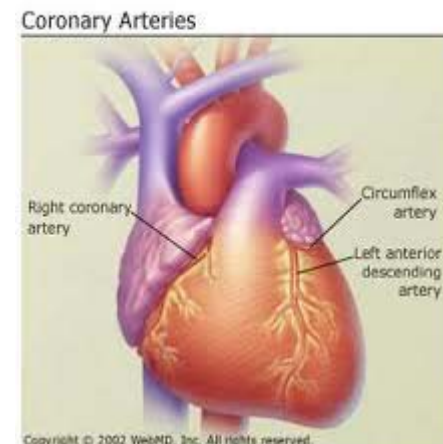
- Symptoms are nonspecific.
- Symptoms of hypothyroidism are probably related to disease severity, disease duration, and individual sensitivity to thyroid hormone deficiency/ the sensitivity of the peripheral target organs.

Symptom scores

- In the Colorado study, a questionnaire that included 17 thyroid symptoms revealed a clear correlation between the type of symptom (dry skin, poor memory, slow thinking, muscle weakness, fatigue, muscle cramp, cold intolerance, puffy eyes, constipation, and hoarseness), the number of symptoms, and elevated TSH
 - **Euthyroid** subjects reported a mean of 12.1% of symptoms
 - **Overtly hypothyroid** subjects had 16.6% of symptoms (*P 0.05 vs. euthyroid group*)
 - *Subjects with **Subclinical hypothyroidism** had 13.8% (*P 0.05 vs. euthyroid group*).*

Cardiovascular risk factors in overt hypoT:

- Hypertention (increased systemic vascular resistance)
- Atherogenic lipid profile
- Elevated CRP
- Altered coagulation and endothelial function
- All these abnormalities regress with I-T4 replacement therapy



schypoT and cardiovascular risk

TABLE 6. Epidemiological evidence for the association between SHypo and cardiovascular risk

First author, year (Ref.)	No. of patients	Sex	TSH	Age (yr)	Follow-up (yr)	Cardiovascular risk
Vanderpump, 1996 (227)	2779	W and M	ATD	≥18	20	No association of ATD with coronary disease. No increased circulatory or all-cause mortality.
Hak, 2000 (193)	1149 (124 SHypo)	W	>4.0	≥55	4.6	Risk of atherosclerosis. Risk of MI only in cross-sectional analysis.
Parle, 2001 (229)	1191 (94 SHypo)	W and M	>5.0	≥60	10	No association with death from circulatory disease.
Imaizumi, 2004 (194)	2550 (257 SHypo)	W and M	>5.0	≥40	10	Increased mortality from all causes at longitudinal analysis in yr 3–6 only in men, but not at 10 yr. Increased risk of IHD only in the baseline cross-sectional analysis.
Gussekkoc, 2004 (92)	599 (30 SHypo)	W and M	4–8 in 25, ≥10 in 5	≥85	4	Decreased risk of death
Wah, 2005 (88)	2108 (119 SHypo)	W and M	0.4–2, 2.0–4, <10, >10	17–89	20	Risk for coronary events in subjects with serum TSH levels of 10 mIU/liter or less and greater than 10. No increased risk of death from cardiovascular disease.
Rodondi, 2005 (231)	2730 (838 SHypo)	W and M	4.5–6.9, 7–9.9, ≥ 10	70–79	4	Increased risk of CHF in patients with TSH > 7 mIU/liter. No increased cardiovascular or total mortality.
Cappola, 2006 (230)	5888 (496 SHypo)	W and M	≥4.5	≥65	13	SHypo was not associated with cardiovascular disorders or mortality.

ATD, Autoimmune thyroid disease; MI, myocardial infarction; IHD, ischemic heart disease; W, women; M, men; CHF, congestive heart failure.

- There are major discrepancies in epidemiological data about cardiovascular risk in SHypo
- This may be due to :
 - differences in the populations studied in terms of **age (!)**, sex, race/ethnicity, life style, the TSH range that defines Shypo
 - methods of evaluation of cardiovascular disease differences in adjustments for known risk factors for cardiovascular disease
 - duration of follow-up.

To treat or not to treat?

- A recently published large meta-analysis of 11 prospective cohort studies showed **increased risk of cardiovascular morbidity and mortality** in patients with TSH above, but not below, 10 mU/l and no increase in total mortality

(Rodondi N et al, JAMA 2010 304 1365–1374).

- A Cochrane review regarding the effect of L-T4 replacement therapy in SCH based on randomised clinical studies **could not demonstrate consistent evidence** of reduced cardiovascular morbidity, improved quality of life or amelioration of symptoms in the treated groups

(Villar HC et al. Cochrane Database of Systematic Reviews, 2007 CD003419).

Consensus (?) to recommend treatment:

- Women who are pregnant or who plan pregnancy
- Patients with serum TSH persistently above 10 mU/l.
- Patients with symptoms and signs suggesting HYPO

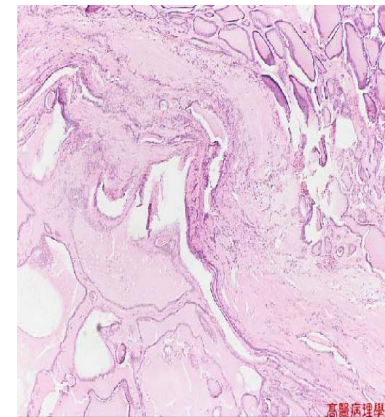
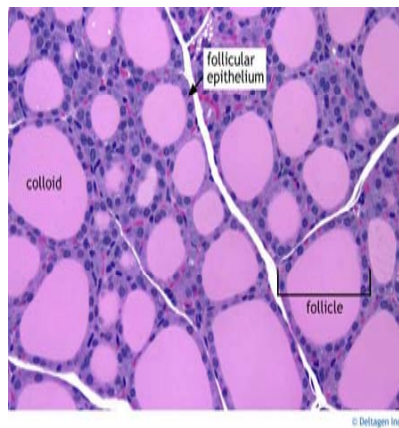
Hypothyroidism in the elderly

- Cardiovascular risk in the elderly
- Cognitive state in the elderly



שינויים במבנה בלוטת התריס עם הגיל

- הפחתה במספר ובגודל הזקיקים
- שינויים דגנרטיביים בתאים האפיתליאליים
- הפחתה בתכולת הקולואיד
- יותר הסננה לימפוציטרית ופיברוזיס
- הבלוטה הופכת יותר נודולרית



תת-תריסיות בגיל המבוגר-אתיולוגיה

- הסיבה השכיחה היא מחלה אוטואימונית של בלוטת המגן (Hashimoto's thyroiditis).
 - קיימת עליה תלויית גיל בשכיחות הנוגדנים לטירוגלובולין ול-Thyroperoxidase, בעיקר בנשים מעל גיל 60.
 - במחקר על קשישים בריאים בגילאי 100-110 נמצאה שכיחות של נוגדנים לבלוטת המגן בדומה לזו הנמדדת בגיל 50 ונמוכה מאד מהצפוי לגיל 100.
 - ייתכן והימצאות הנוגדנים אינה קשורה להזדקנות עצמה אלא למחלות נלוות.
- יחס הפוך בין "הזדקנות מוצלחת" לשכיחות נוגדנים לבלוטת המגן, אולי כביטוי למערכת חיסון יעילה יותר (?)

שכיחות הפרעות בתפקוד בלוטת המגן בגיל המבוגר

- השכיחות עולה עם הגיל
- מעל גיל 60 שכיחות משוערת של יתר תריסיות עד 2.3% ושכיחות משוערת של תת-תריסיות 2-7%
- תת-תריסיות תת-קלינית עד 20%

תת-תריסיות בגיל המבוגר - המשך

- חלק מהסימנים הקליניים של תת-תריסיות כגון עייפות, יובש בעור, רפלקסים איטיים, עצירות וירידה קוגניטיבית מיוחסות לעתים קרובות לתהליך ההזדקנות עצמו.
- רק מיעוט החולים הקשישים (עד 10%) במחקרים השונים מתגלים על סמך קליניקה. הרב מתגלים בבדיקות סקר.
- הנקודות הנ"ל מביאות פעמים רבות לעיכוב באבחנה
- יש צורך בדרגת חשד גבוהה בקשישים עם סימפטומים לא ספציפיים שעלולים להופיע בתת-תריסיות.

האם יש לגיל המבוגר השפעה על ההסתמנות הקלינית של

תת-תריסיות?

Doucet et al, J Am Geriatr Soc 1994

• כן. השוו 67 קשישים לאוכלוסיה צעירה יותר
ומצאו:

- מספר קטן יותר של סימפטומים למחלה
- שכיחות נמוכה יותר של חלק מהסימפטומים הקלאסיים כגון אי סבילות לקור ועלייה במשקל.
- שכיחות גבוהה של סימנים נוירולוגיים (syncope, הפרעות שיווי משקל) ונוירופסיכיאטרים (דיכאון, דמנציה?)

JAMA-1/12/2004

Thyroid Status, Disability and Cognitive Function, and Survival in Old Age

Jacobijn Gussekloo, MD, PhD

Eric van Exel, MD, PhD

Anton J. M. de Craen, PhD

Arend E. Meinders, MD, PhD

Marijke Frölich, PhD

Rudi G. J. Westendorp, MD, PhD

Thyroid status, disability and cognitive function, and survival in old age

. Gussekloo et al, JAMA, 2004

- מחקר פרוספקטיבי תצפיתי. גויסו 599 משתתפים בגילאי 85-89 בהולנד למעקב ממוצע של 3.7 שנים.

- נבדקו תפקודי תריס וכן בוצעה הערכה שנתית של:

- תפקוד יומיומי (ADL, instrumental ADL)

- סימפטומים של דיכאון (GDS-15)

- תפקוד קוגניטיבי (MMSE score)

- תמותה- סיבת המוות

Table 3. Performance of Participants Aged 85 Years Depending on Baseline Levels of Thyrotropin, Free Thyroxine, and Free Triiodothyronine (N=558)*

	Baseline Difference per SD†		Change Over Time		Additional Annual Change per SD	
	Estimate (SE)	P Value	Estimate (SE)	P Value	Estimate (SE)	P Value
Thyrotropin‡						
Disability, points						
ADLs	-0.05 (0.28)	.86	1.2 (0.06)	<.001	-0.01 (0.05)	.87
Instrumental ADLs	0.06 (0.34)	.87	2.5 (0.06)	<.001	-0.12 (0.06)	.03
Depressive symptoms, points	-0.06 (0.13)	.64	0.29 (0.03)	<.001	0.02 (0.03)	.53
Global cognitive function, points	-0.03 (0.26)	.93	-0.79 (0.04)	<.001	0.01 (0.04)	.96
Attention, s	1.3 (1.4)	.35	1.4 (0.37)	<.001	-0.47 (0.39)	.23
Processing speed, digits	-0.22 (0.32)	.49	-0.64 (0.05)	<.001	-0.01 (0.06)	.90
Immediate memory, pictures	-0.18 (0.30)	.55	-1.0 (0.06)	<.001	0.07 (0.06)	.26
Delayed memory, pictures	-0.10 (0.14)	.46	-0.48 (0.03)	<.001	0.03 (0.03)	.38
Free Thyroxine§						
Disability, points						
ADLs	0.41 (0.29)	.15	1.2 (0.06)	<.001	0.11 (0.06)	.67
Instrumental ADLs	0.55 (0.34)	.11	2.5 (0.06)	<.001	0.10 (0.07)	.09
Depressive symptoms, points	0.06 (0.12)	.62	0.28 (0.03)	<.001	-0.01 (0.03)	.95
Global cognitive function, points	-0.02 (0.27)	.94	-0.78 (0.04)	<.001	-0.06 (0.04)	.18
Attention, s	1.7 (1.3)	.20	1.4 (0.37)	<.001	0.32 (0.40)	.42
Processing speed, digits	-0.23 (0.30)	.44	-0.64 (0.06)	<.001	-0.07 (0.06)	.22
Immediate memory, pictures	-0.27 (0.28)	.34	-1.0 (0.06)	<.001	-0.10 (0.07)	.14
Delayed memory, pictures	-0.13 (0.13)	.32	-0.48 (0.03)	<.001	-0.06 (0.03)	.08
Free Triiodothyronine 						
Disability, points						
ADLs	-1.7 (0.28)	<.01	1.2 (0.06)	<.001	-0.21 (0.06)	<.001
Instrumental ADLs	-2.3 (0.33)	<.001	2.5 (0.06)	<.001	-0.04 (0.58)	.58
Depressive symptoms, points	-0.29 (0.12)	.02	0.31 (0.03)	<.001	-0.07 (0.04)	.04
Global cognitive function, points	1.3 (0.26)	<.001	-0.80 (0.04)	<.001	0.11 (0.042)	.008
Attention, s	-0.34 (1.3)	.80	1.4 (0.36)	<.001	0.42 (0.40)	.30
Processing speed, digits	1.2 (0.30)	<.001	-0.67 (0.06)	<.001	0.10 (0.06)	.10
Immediate memory, pictures	0.80 (0.28)	.005	-1.0 (0.63)	<.001	0.003 (0.07)	.97
Delayed memory, pictures	0.41 (0.13)	.003	-0.49 (0.03)	<.001	0.01 (0.01)	.89

Abbreviation: ADLs, activities of daily living.

*All estimates by linear mixed models, adjusted for sex and educational level. Depressive symptoms, attention, processing speed, immediate recall and delayed recall were not administered in participants with Mini-Mental State Examination scores below 19 points.

†Baseline difference per SD is the estimate for the level of thyroid hormone and reflects the cross-sectional association between thyroid hormone and performance.

‡The mean (SD) level is 2.54 (2.71) mIU/L.

§The mean (SD) level is 1.13 (0.21) ng/dL [14.55 [2.67] pmol/L].

||The mean (SD) level is 220 (3.57) pg/dL [3.39 [0.55] pmol/L].

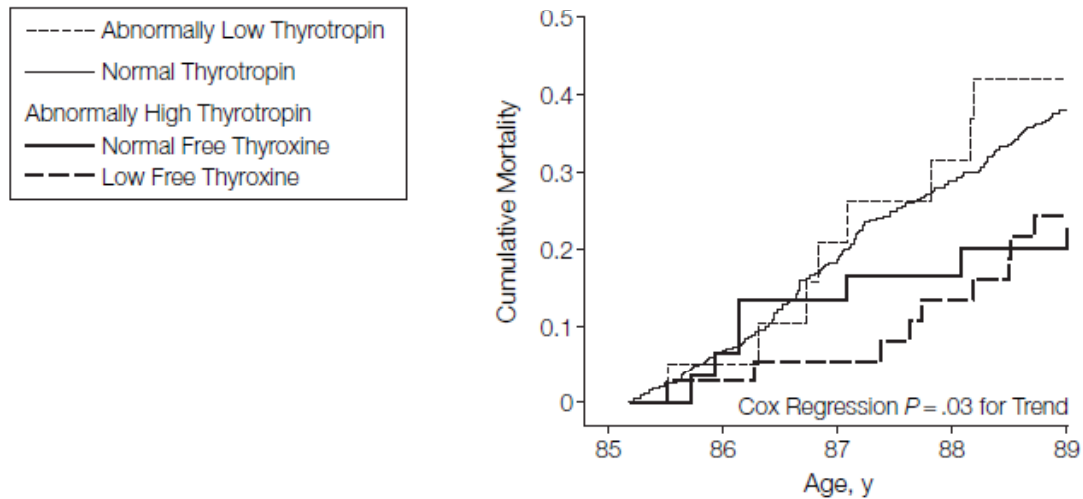
תוצאות

- ל-85% היו תפקודי תריס תקינים, ל-12% רמה גבוהה של TSH ול-3% רמה נמוכה של TSH. (הפרעות תת-קליניות לא טופלו).
- בתחילת המחקר לא נמצא קשר בין רמת TSH למדדים התפקודיים שנבדקו.
- כל המדדים התפקודיים ירדו במהלך המחקר, כאשר TSH בסיסי גבוה היה גורם מגן לירידה זו.
- 37% מהמשתתפים מתו במהלך המחקר. TSH נמוך היה קשור לעליה בתמותה ו-TSH גבוה- לירידה בתמותה.

Survival

Increasing levels of TSH and decreasing levels of FT4 were associated with a survival benefit.

Figure 2. Cumulative Mortality of Participants Based on Clinical Stratification of Thyroid Status



Abnormally Low Thyrotropin	19	18	15	13	11
Normal Thyrotropin	472	441	385	335	287
Abnormally High Thyrotropin					
Normal Free Thyroxine	30	28	26	25	23
Low Free Thyroxine	37	36	35	32	28

Plasma thyrotropin levels below 0.3 mIU/L were considered to be abnormally low; levels above 4.8 mIU/L were considered to be abnormally high. Plasma free thyroxine levels below 1.01 ng/dL (13 pmol/L) were considered to be abnormally low; levels between 1.01 and 1.79 ng/dL (13 and 23 pmol/L) were considered to be normal.

דיון והמלצות

- ייתכן שאצל קשישים מעל גיל 85, תת-תריסיות הקשורה לקצב מטבולי (BMR) איטי יותר- מהווה גורם מגן. יכולה לשקף מנגנון אדפטיבי למניעת קטבוליזם מוגבר בתהליך ההזדקנות.
- נראה שבקבוצת גיל זו יש להתייחס לקליניקה של תת-תריסיות ואין הצדקה לביצוע screening ולטיפול באדם אסימפטומטי.
- ייתכן שהמטרה הטיפולית בקבוצה זו צריכה להיות $TSH=4-10$ ולא הרמה הנמוכה יותר המקובלת בכלל האוכלוסיה כתקינה.

schypoT and cognitive function in the elderly

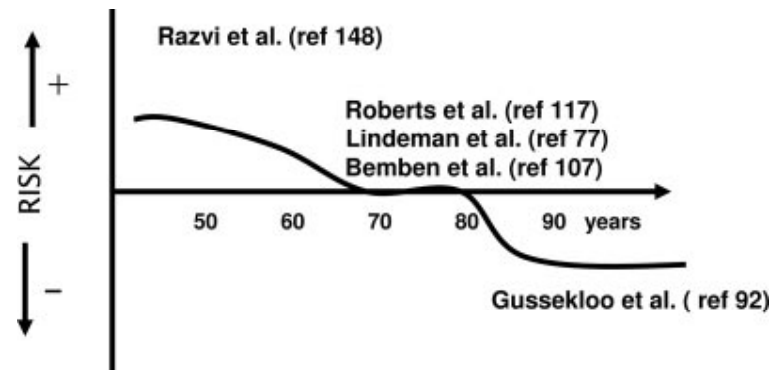


FIG. 1.

Hypothetical relationship between age and effect of SHypo on symptoms, mood, and cognition. Published data suggest that the possible effects are age related.

In most of the studies, an inverse correlation can be observed between the mean age of the subjects examined and the OR found for CHD

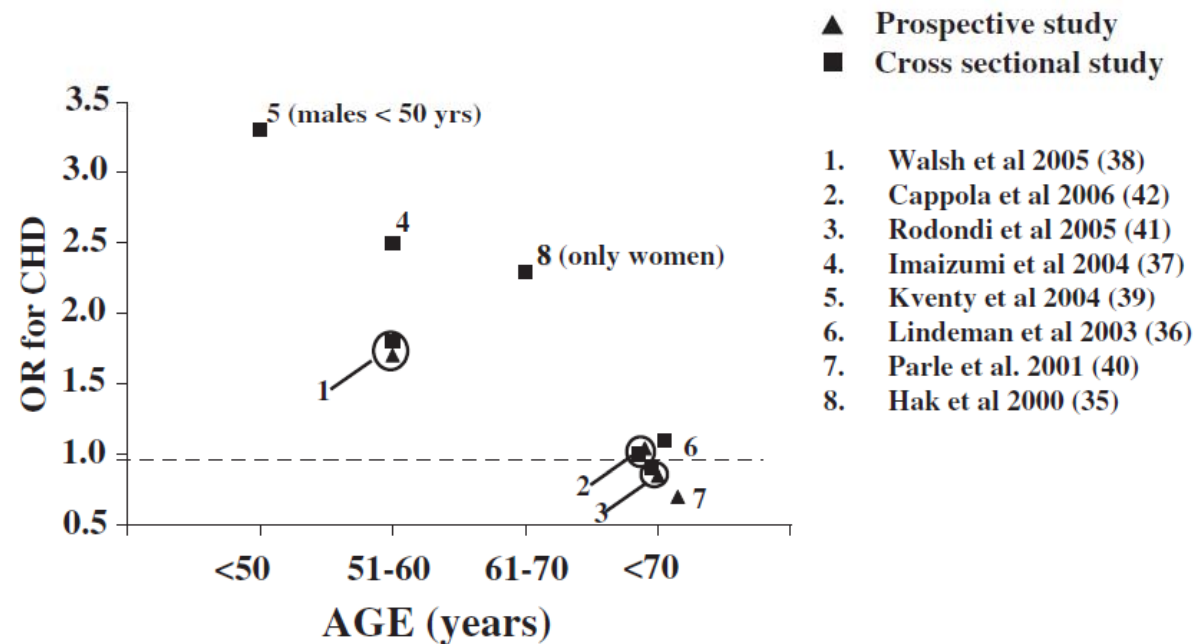


FIG. 1. Odds ratio (OR) for coronary heart disease (CHD) in subjects with subclinical hypothyroidism according to the mean age of the cohort studied. Data are from eight recent epidemiological studies (■, prospective; ▲, cross-sectional) carried out on the general population. The numbers within parentheses indicate the corresponding references.

Articles

Prediction of all-cause and cardiovascular mortality in elderly people from one low serum thyrotropin result: a 10-year cohort study

James V Parle, Patrick Maisonneuve, Michael C Sheppard, Peter Boyle, Jayne A Franklyn

Lancet 2001; **358**: 861–65

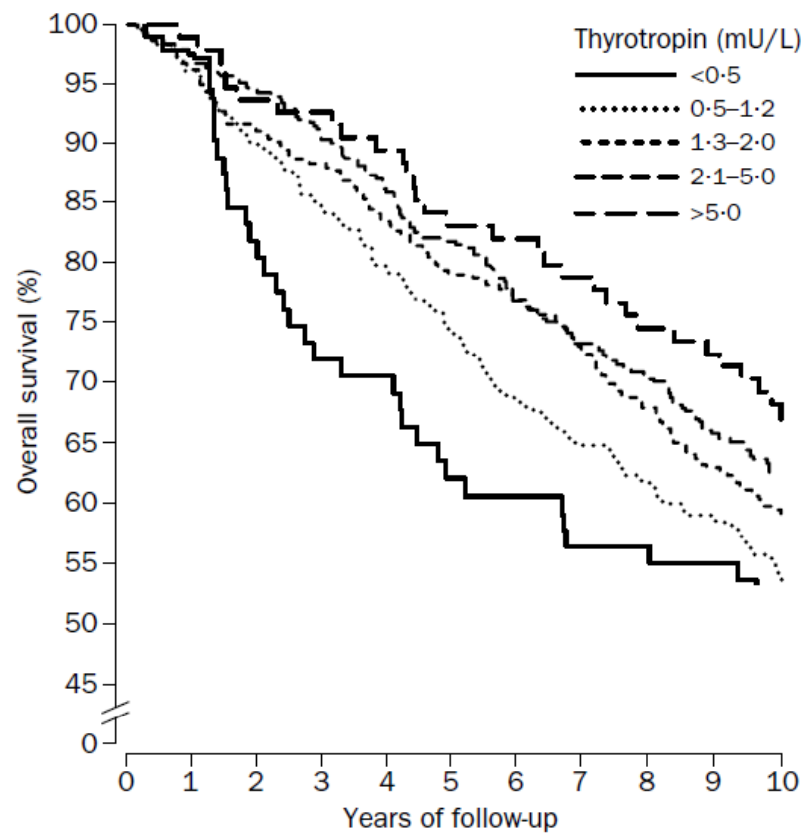


Figure 1: Kaplan-Meier survival curves showing the relation between overall survival and serum thyrotropin concentration

Subclinical thyroid disease

Biondi&Cooper. Endocrine Reviews 2008, 29:76-131

- Treatment of SHypo should probably be avoided in patients older than 85 yr whose TSH level is between 4.5 and 10 mIU/liter.
- After the identification of elderly patients who would benefit from replacement therapy, treatment should be individualized in those with a serum TSH concentration above 10 mIU/liter. In such cases, l-T4 therapy can be initiated with the aim of reaching a TSH serum level of 4–6 mIU/liter in individuals older than 70 yr.
- Overtreatment with excessive l-T4 doses can have negative consequences in the elderly!

מחלות בלוטת המגן בהריון



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doi: 10.1210/jc.2007-0141

CLINICAL PRACTICE GUIDELINE

Management of Thyroid Dysfunction during Pregnancy and Postpartum: An Endocrine Society Clinical Practice Guideline

Marcos Abalovich, Nobuyuki Amino, Linda A. Barbour, Rhoda H. Cobin, Leslie J. De Groot, Daniel Glinoe, Susan J. Mandel, and Alex Stagnaro-Green

THYROID
Volume 21, Number 10, 2011
© Mary Ann Liebert, Inc.
DOI: 10.1089/thy.2011.0087

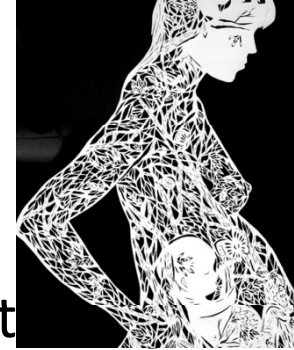
Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and Postpartum

The American Thyroid Association Taskforce on Thyroid Disease During Pregnancy and Postpartum

Alex Stagnaro-Green (Chair),¹ Marcos Abalovich,² Erik Alexander,³ Fereidoun Azizi,⁴ Jorge Mestman,⁵
Roberto Negro,⁶ Angelita Nixon,⁷ Elizabeth N. Pearce,⁸ Offie P. Soldin,⁹
Scott Sullivan,¹⁰ and Wilmar Wiersinga¹¹

In essence, pregnancy is a stress test for the thyroid, resulting in hypothyroidism in women with limited thyroidal reserve

Fetal thyroid function



- **10–12 wk** gestation : The fetal thyroid begins concentrating iodine
- **20 wk gestation**: Fetal thyroid is under control of fetal pituitary TSH.
- Fetal serum levels of TSH, TBG, free T4, and free T3 increase throughout gestation
- **36 wk** : Fetal thyroid reaching mean adult levels at approximately 36 wk.

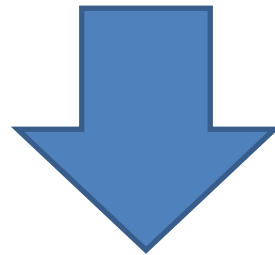
HYPOTHYROIDISM AND PREGNANCY: MATERNAL AND FETAL ASPECTS

- **Prevalence:**
 - 0.3–0.5% for overt hypothyroidism
 - 2–3% for subclinical hypothyroidism
 - 5–15% of women in the child bearing age have Thyroid autoantibodies
- **For discussion:**
 - Fetal brain development
 - Pregnancy outcome
 - Fetal outcome

Maternal hypothyroidism and fetal neurological development

lessons from iodine deficiency areas

- It has been recognized for nearly 110 years that in regions of endemic iodine deficiency combined maternal and fetal hypothyroidism:



- mental retardation
- neurologic defects — spasticity, ataxia, and deaf-mutism

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MATERNAL THYROID DEFICIENCY DURING PREGNANCY AND SUBSEQUENT NEUROPSYCHOLOGICAL DEVELOPMENT OF THE CHILD

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- **62 children** (aged 8 yr) that were born to mothers with hypothyroidism during midgestation.
- **124 control** children from the same schools
- All underwent extensive neuropsychological testing for IQ and school-learning abilities

TABLE 2. MEASUREMENTS OF THYROID FUNCTION IN THE STUDY WOMEN DURING PREGNANCY.*

VARIABLE	WOMEN WITH HYPOTHYROIDISM (N= 62)	CONTROL WOMEN (N= 124)
Serum thyrotropin concentration (mU/liter)	13.2±0.3†	1.4±0.2
Serum thyroxine concentration (µg/dl)	7.4±0.1†	10.6±0.1
Serum free thyroxine concentration (ng/dl)	0.71±0.1†	0.97±0.07
High serum concentrations of anti-thyroid peroxidase antibodies (%)‡	77†	14

For serum thyroxine and free thyroxine to nanomoles per liter and picomoles per liter, respectively, multiply by 12.87

- **Results:** Full-scale IQ scores of children born to hypothyroid **untreated** mothers averaged 7 points lower than the mean IQ score of children born to control mothers ($P = 0.005$).
- **Furthermore**, three times as many children from mothers with untreated thyroid deficiency (15% vs. 5%) had IQ scores that were 2 SD scores below the mean IQ of the controls (that is 85).
- **Conclusions:** hypothyroidism occurring during pregnancy was associated with a risk of a poorer neuropsychological outcome in the progeny

Clinical studies on the role of maternal hypothyroidism for the psychoneurological outcome in the progeny

- A heterogeneity of gestational “hypothyroidism ” . Different clinical conditions must be considered:
 - Time of onset (first trimester vs. later)
 - Degree of severity (SCH vs. OH)
 - Duration in pregnancy
 - Adequacy of treatment

However, a common pattern clearly emerges.
- Overall, the results showed that there was a significantly increased risk of impairment in neuropsychological developmental indices in the offspring of hypothyroid mothers.

Repercussions of hypothyroidism on pregnancy: Maternal aspects and pregnancy outcome

- Decreased fertility
- An increased risk for abortion, anemia, gestational hypertension, placental abruption, and postpartum hemorrhages.
- These complications are more frequent with OH than with SCH and
- Adequate thyroxine treatment greatly decreases the risk of a poorer obstetrical outcome

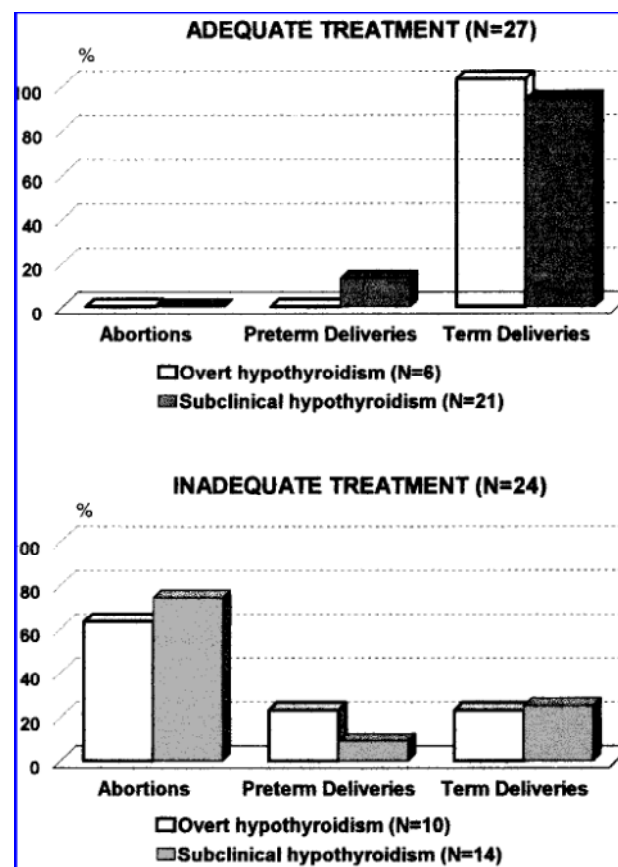


Overt and subclinical hypothyroidism complicating pregnancy.

Abalovich M, Gutierrez S, Alcaraz G, Maccallini G, García A, Levalle O

Thyroid 12:63–68, 2002

- **150 pregnancies in 114 women** with primary hypothyroidism treated with LT4
 - 51 women (34%) conceived under hypoT
 - 99 pregnancies under euthyroidism with thyroxine therapy.
- **Conclusions:** the outcome of pregnancy did not depend on whether hypothyroidism was initially overt or subclinical, but primarily on the adequacy of the thyroxine treatment.



Repercussions of hypothyroidism on pregnancy: fetal aspects.

Untreated maternal OH is associated with adverse neonatal outcomes including premature birth, low birth weight, and neonatal respiratory distress.

Therapeutic aspects- LT4 titration -from the guidelines

- Pregnant women usually need to increase their daily dosage by, on average, 30–50% above preconception dosage beginning as early as by 4–6 wk gestation
- Serum free T4 and TSH levels should be every 30-60 days

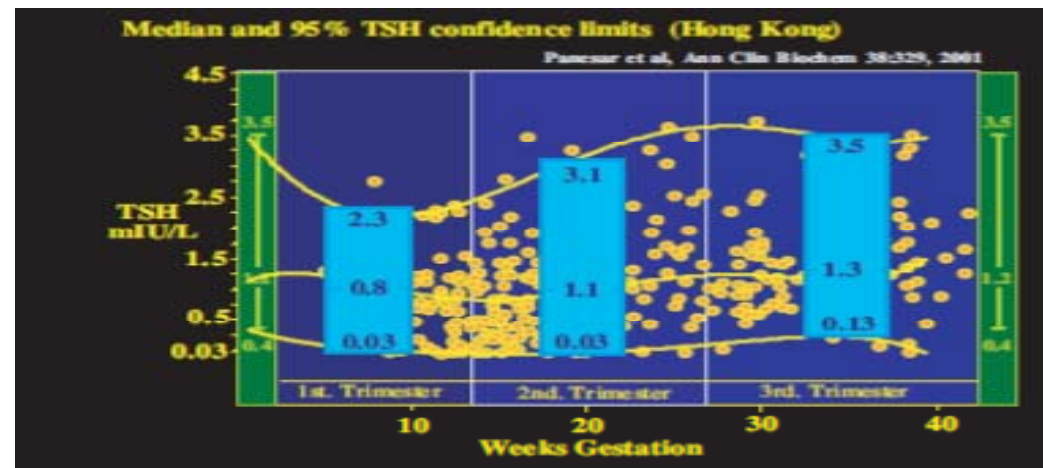


FIG. 1. Median and 95% confidence levels for TSH during pregnancy.

From the guidelines: Hypothyroidism and pregnancy- recommendations

Overt hypothyroidism

- Thyroid function tests should be normalized as rapidly as possible.
- TSH should be <2.5 U/ml in the first trimester
- Recommendation level is A; evidence is good

Subclinical hypothyroidism

- The panel recommends thyroxine replacement
- For obstetrical outcome, recommendation level is B; evidence is fair
- For neurological outcome, recommendation level is I; evidence is poor

לסיכום

- ההגדרה של תת-תריסיות תת-קלינית הינה הגדרה ביוכימית לחלוטין אשר הקורלציה בינה לבין המשמעות הקלינית אינה חד משמעית
- ההחלטה הטיפולית צריכה להיות מבוססת על התייחסות מותאמת לתתי-קבוצות של מטופלים וכמובן, למטופל הספציפי.
- הטיפול בטירוקסין הוא פשוט וזול אך לעתים הסכנות הטמונות בו עולות על היתרונות שבטיפול

Primum Non Nocere!!!

תודה על ההקשבה!

