
Common Thyroid Problems

Gilbert H. Daniels M.D.

Case History

- **A 68 year old woman complains of fatigue but otherwise feels well. Her past medical history is unremarkable.**
- **On physical examination, the only abnormality is a slightly enlarged thyroid gland.**

Case History

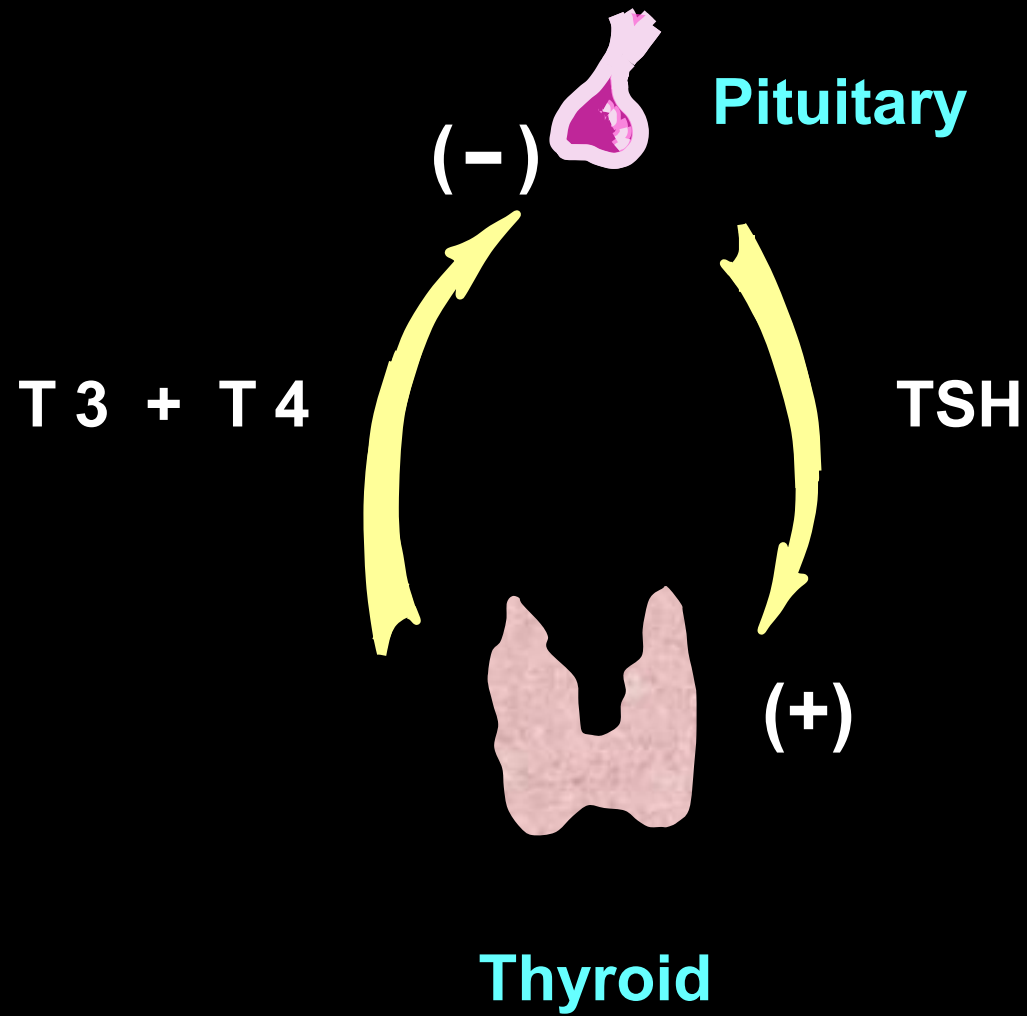
- F T4 : 1.1 ng / dl (0.8-1.8)
- TSH : 7.5 mU/L (0.5 - 5.0)

Case History

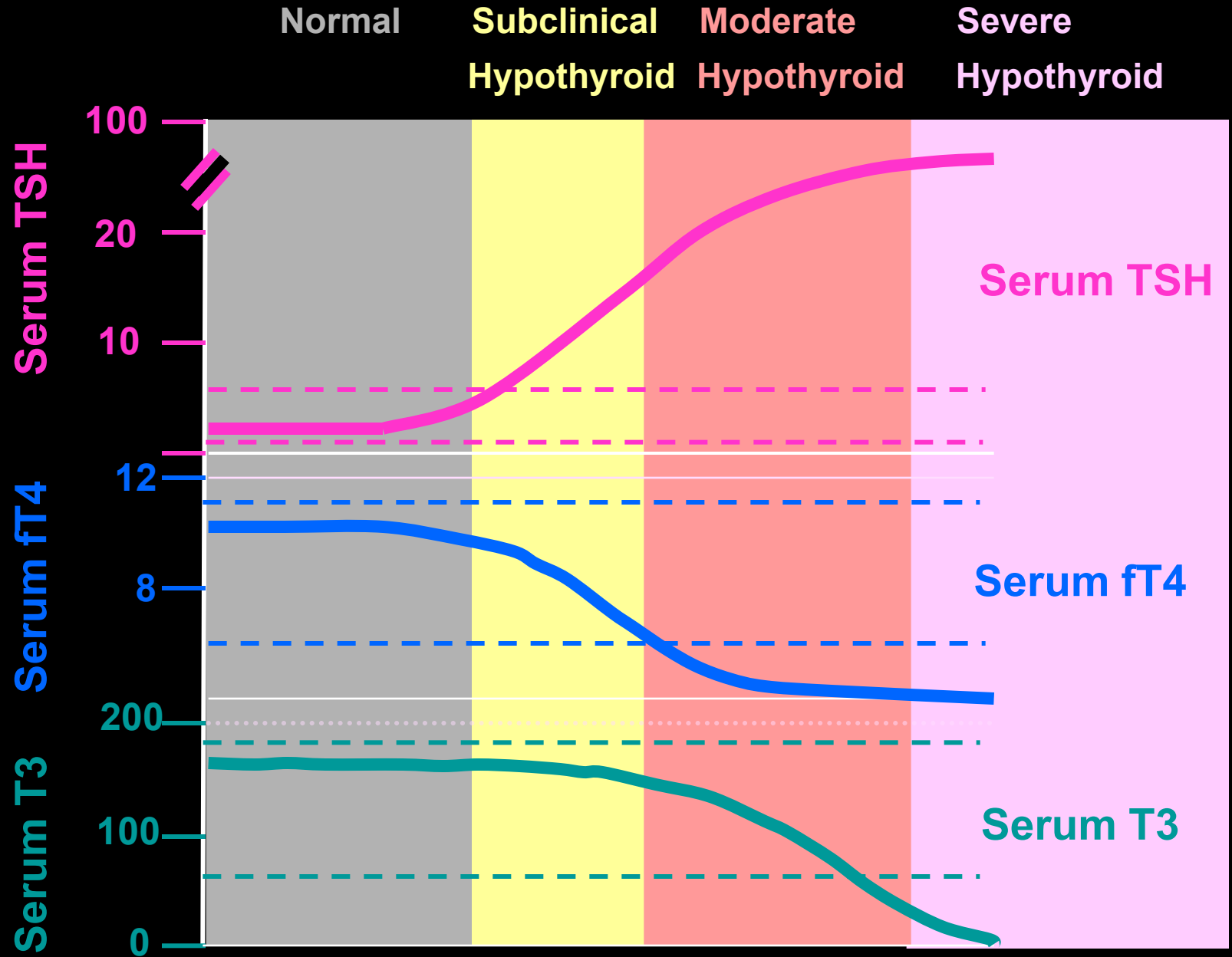
What is this ?

What should be done ?

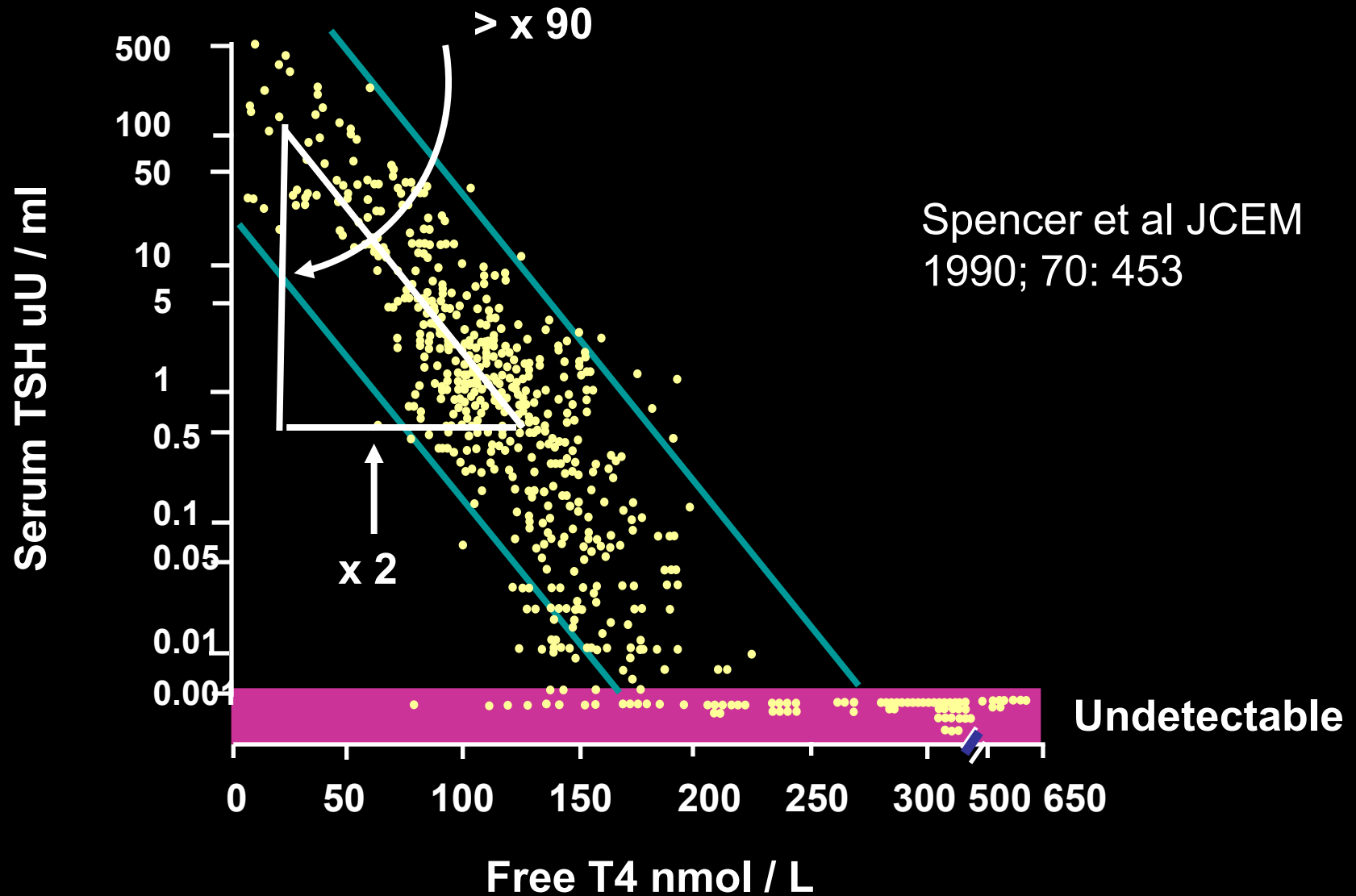
Subclinical Hypothyroidism



Thyroid Failure



Free T4 vs. TSH



Levothyroxine Dose Titration

No Difference

Weight

Zulewski score

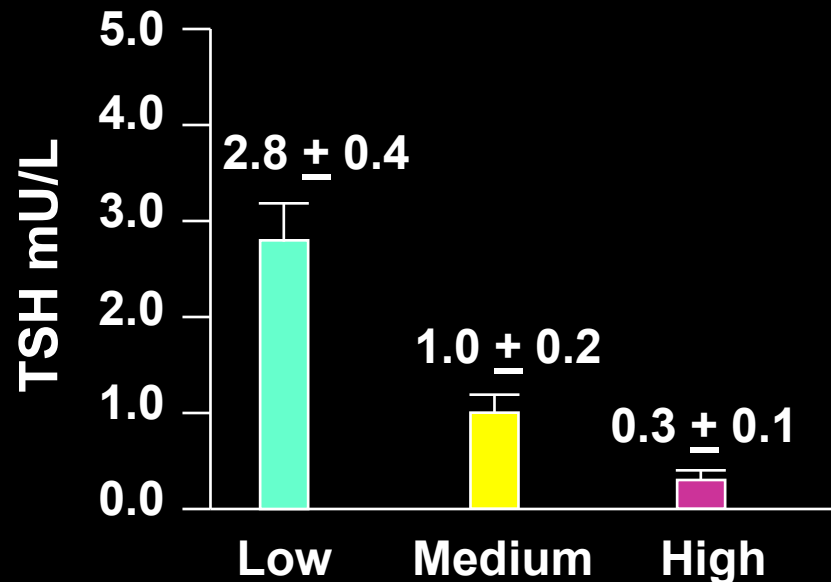
Visual Analog Scale

SF-36 Questionnaire

GHQ-28

Thyroid Symptom Q

Treatment Satisfaction



Walsh et al. JCEM
2006; 91:2624-30

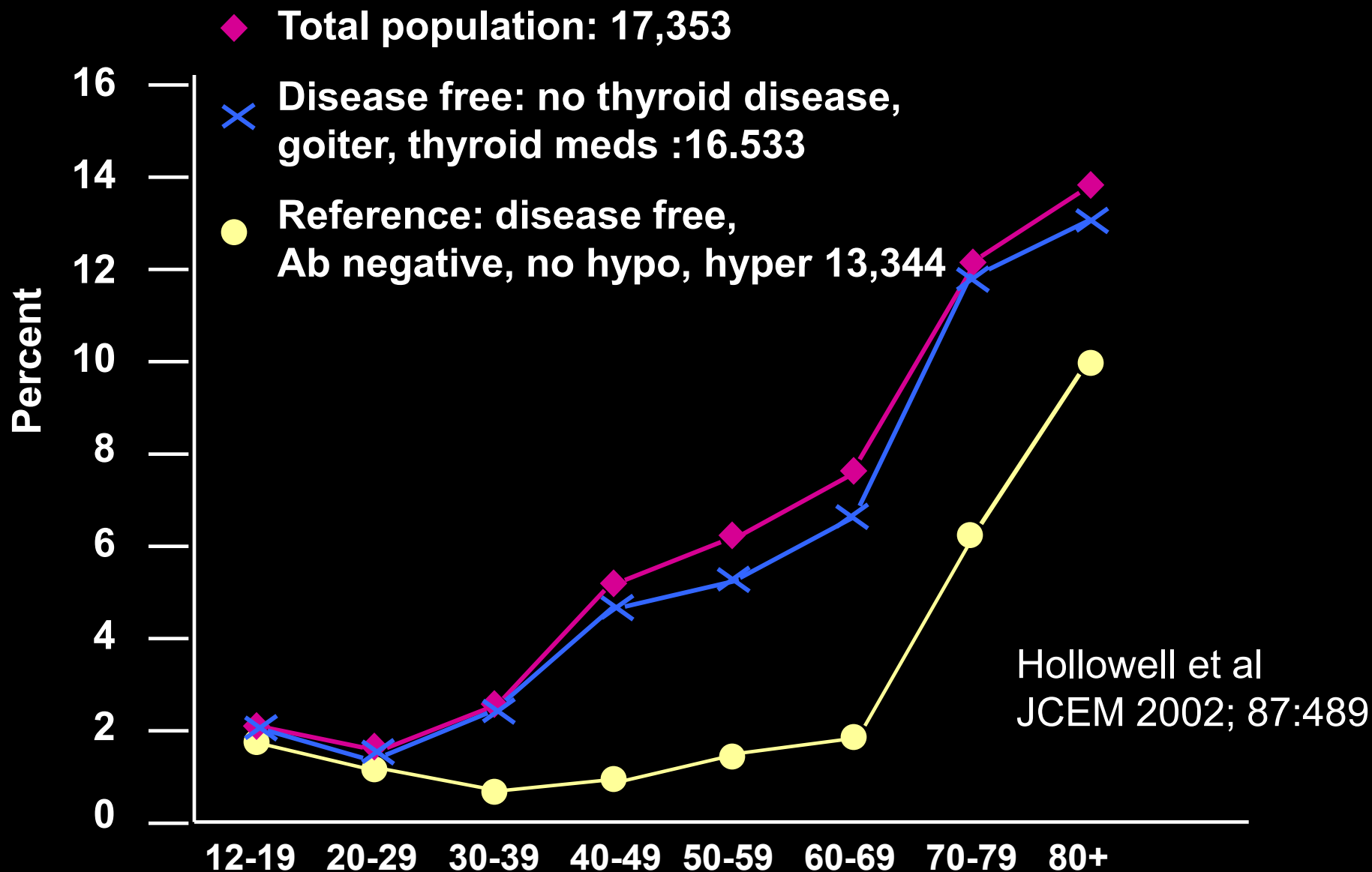
Subclinical Hypothyroidism

- Normal Free T4 (or T4)
- Elevated TSH

Subclinical Hypothyroidism

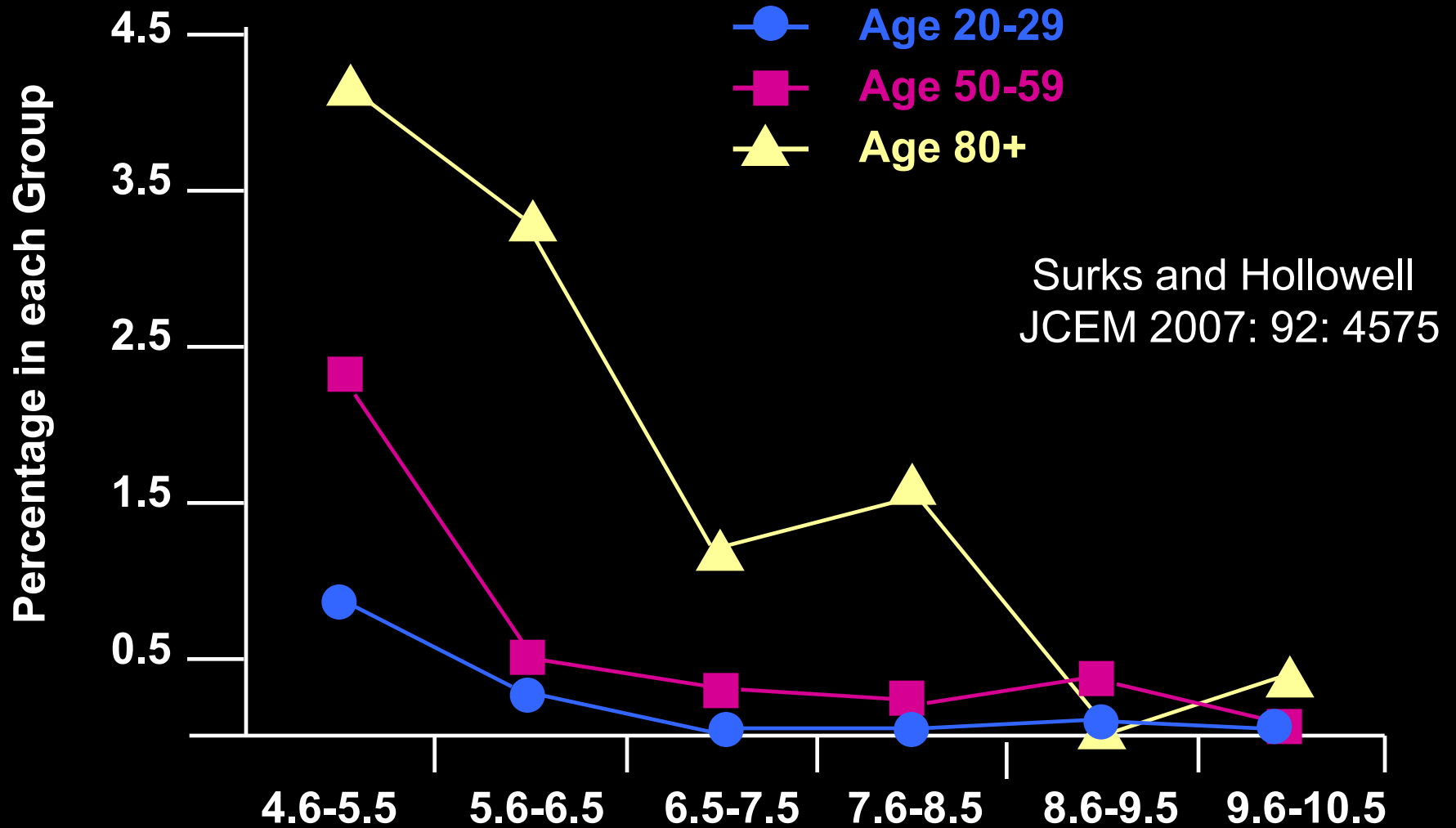
- **Exclude other causes of elevated TSH**
- **Patient may be symptomatic or asymptomatic !!**

NHANES TSH > 4.5 mU/L



What is an elevated serum TSH ?

Distribution of TSH concentrations with age



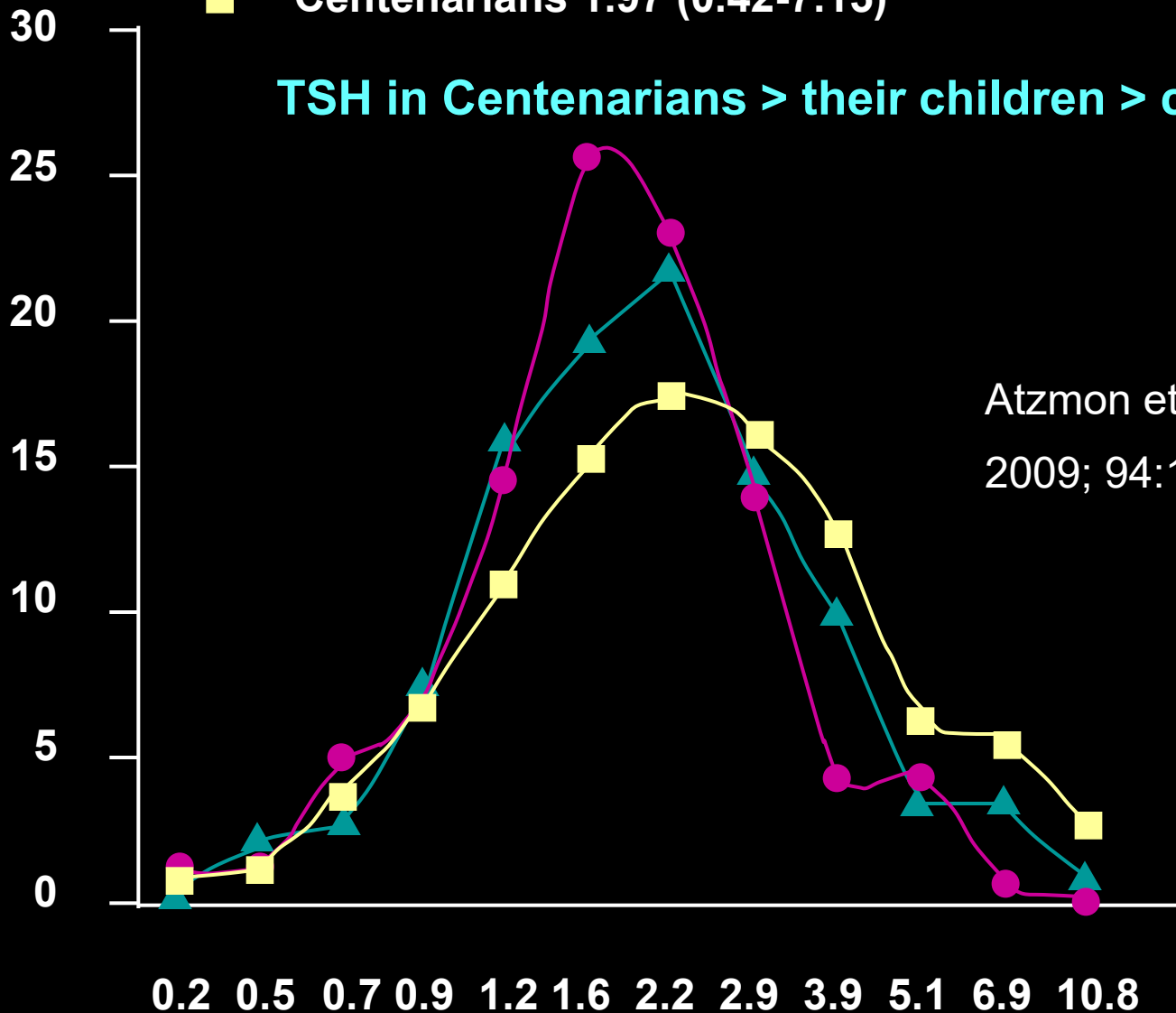
Elevated serum TSH

- **Age 20-29: 97.5 centile for TSH: 3.45 mU/L**
- **Age 80 +: 97.5 centile for TSH: 7.5 mU/L**
- **Older patients: 70% with TSH > 4.5 mU/L**
are within their age-specific reference range.

- Ashkenazi (controls) spouses of children 1.55 (0.63-3.93)
- ▲ Ashkenazi children of Centenarians 1.68 (0.65-4.79)
- Centenarians 1.97 (0.42-7.15)

Percentage of population

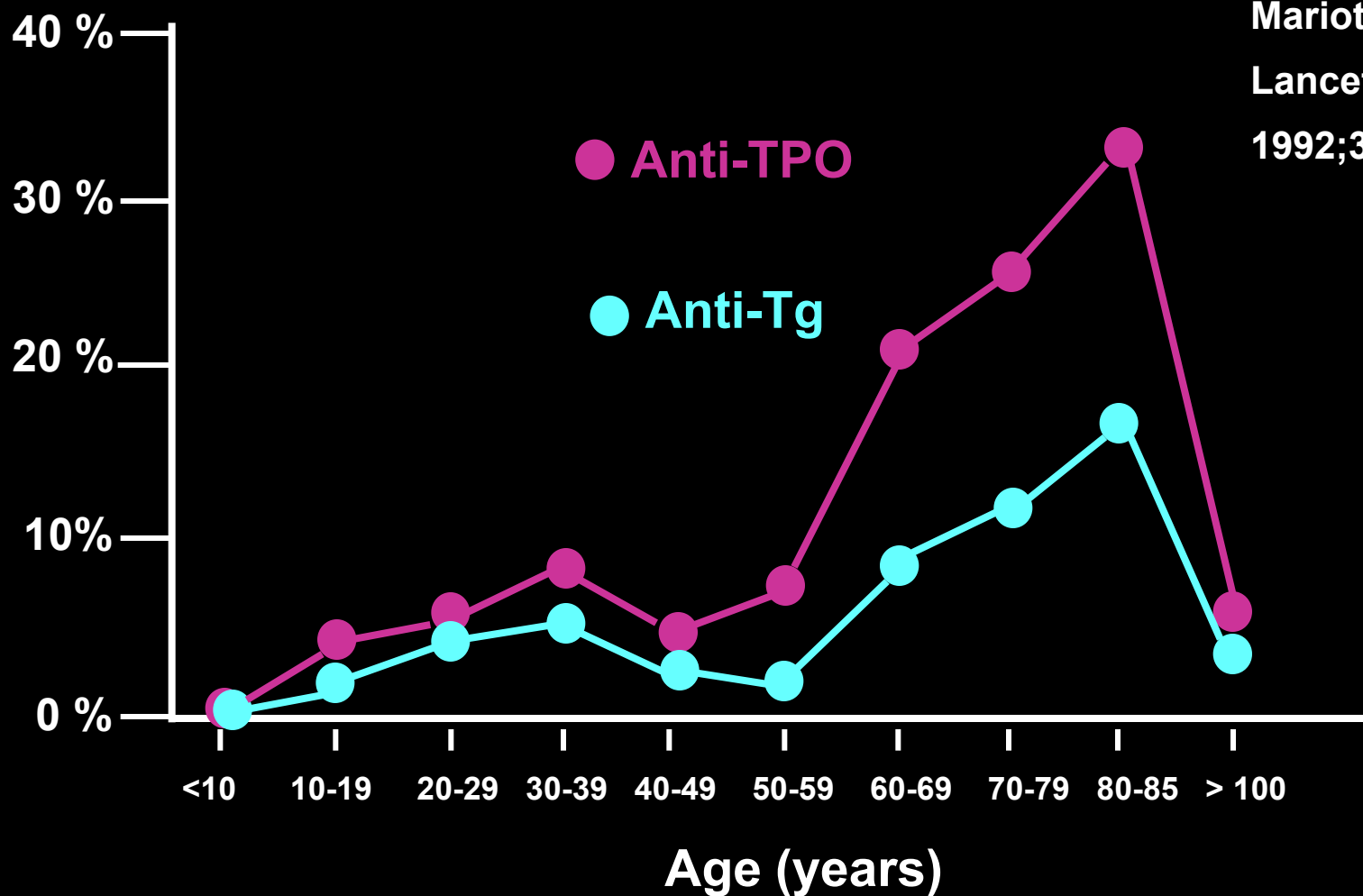
TSH in Centenarians > their children > controls



Is subclinical hypothyroidism a disease ?

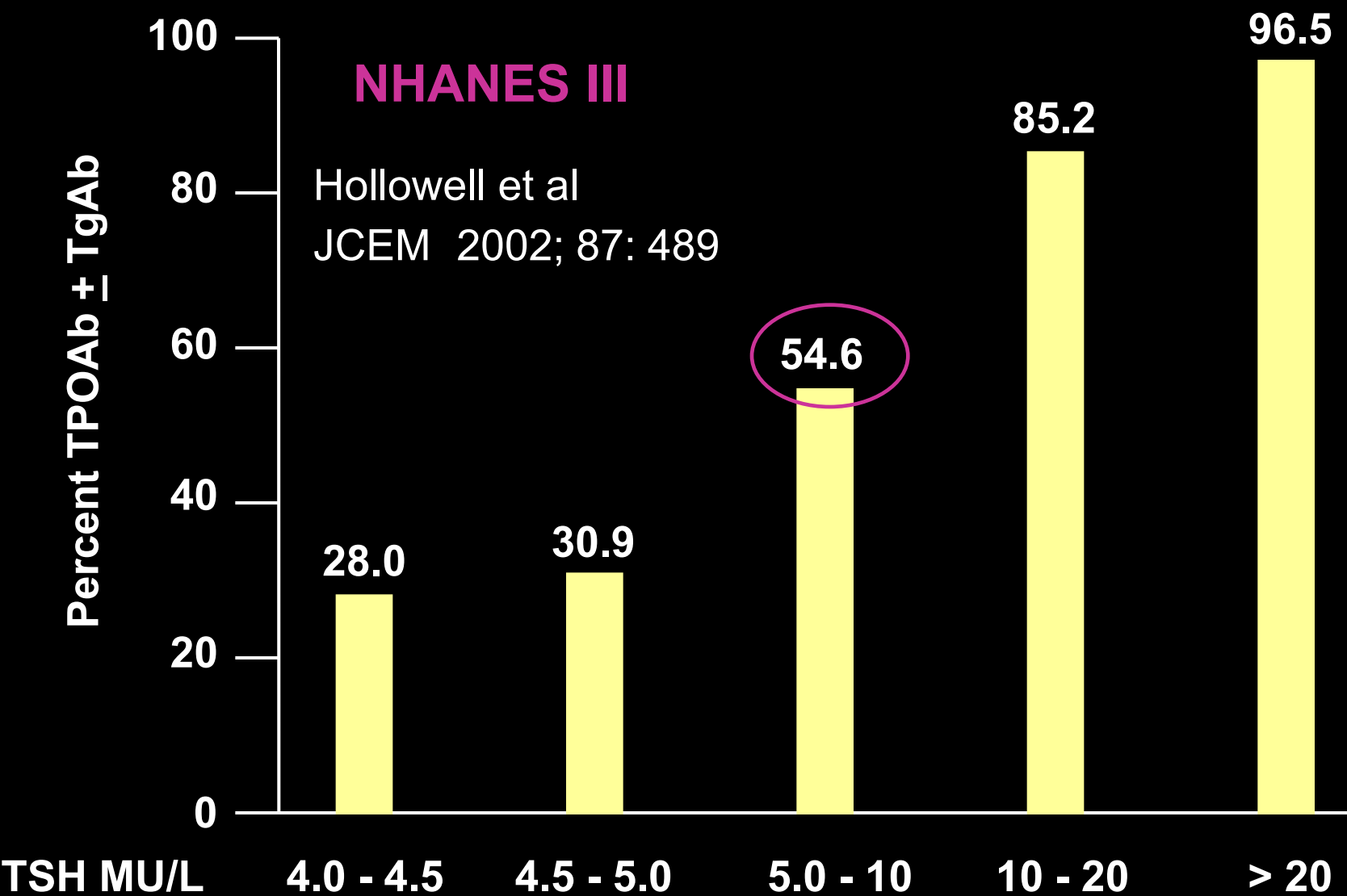
Anti-Thyroid Antibodies - Prevalence

Mariotti et al
Lancet
1992;339:1506



Subclinical Hypothyroidism

Antibody Prevalence



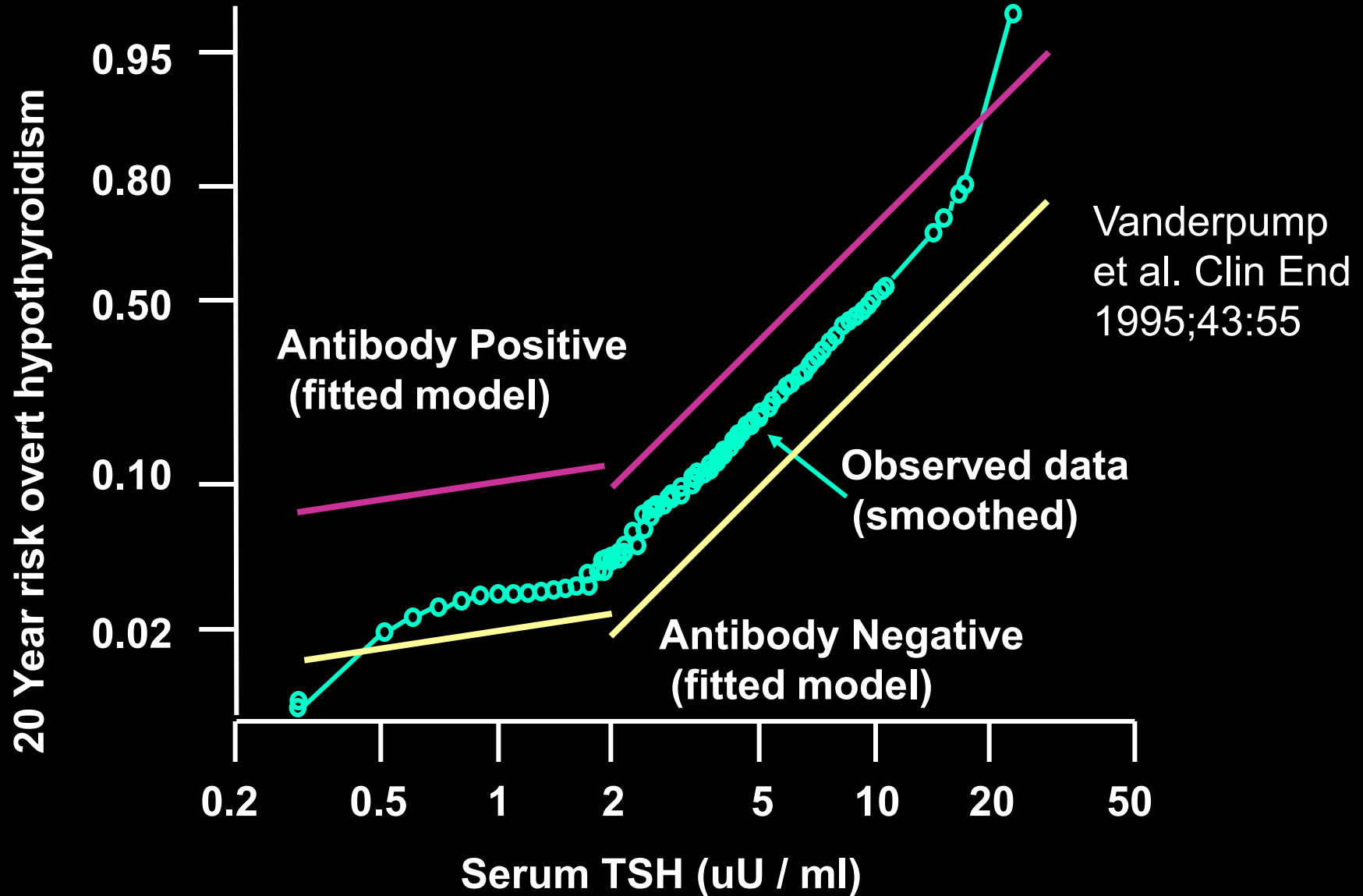
Risk of overt hypothyroidism

Whickham Survey

- **2779 Adults**
- **1877 Survivors**
- **20 Year Follow-Up : 96 %**

Vanderpump Clin Endocrinol 1995

Natural History of Hypothyroidism



Overt Hypothyroidism Risk

- **Elevated TSH
and Positive Ab** 4.3 % per year
- **Elevated TSH
and negative Ab** 2.6 % per year
- **Positive Ab
and normal TSH** 2.1 % per year

Subclinical Hypothyroidism Follow-up

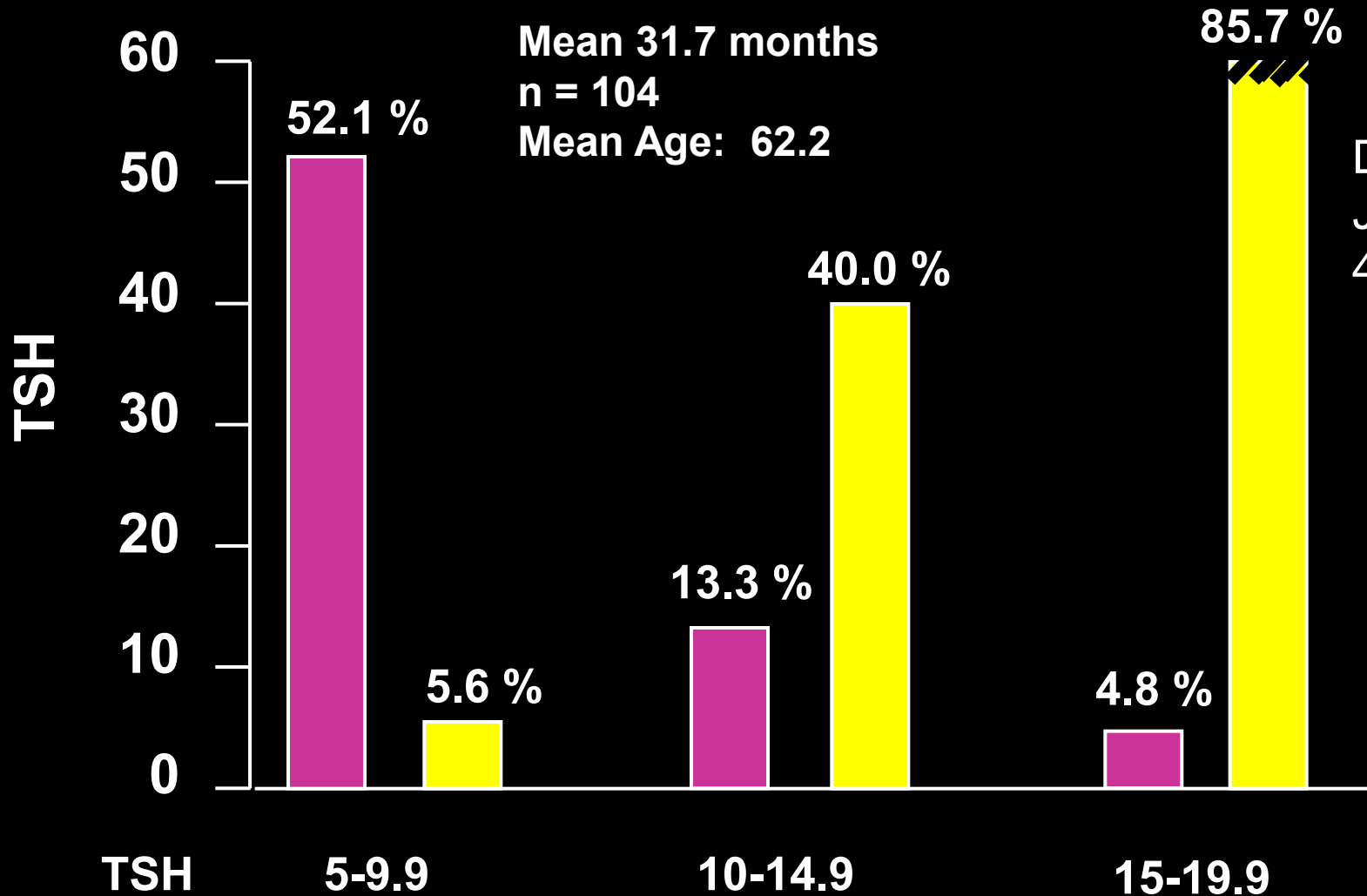


TSH Normalized



Overt Hypothyroidism

Mean 31.7 months
n = 104
Mean Age: 62.2



Diez JJ.
JCEM 89:
4890, 2004

Community Practice

422,242 pts in Tel Aviv
5 year FU

3 % TSH $> 5.5 - \leq 10$
n = 12,600

0.7 % TSH > 10 (overt)
n = 2,950

Treatment started in 75% of those with abnormal TSH.

25% had only a single TSH determination !

5 Year untreated TSH > 10

Repeat TSH :	> 10	5.5 - ≤ 10	Normal
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	35 %	36.5 %	27.7 %
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5 Year untreated TSH 5.5 - ≤ 10

Repeat TSH :	> 10	5.5 - ≤ 10	Normal
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	2.9 %	35 %	62.1%
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Overall 2.9 % of those not treated, progressed from subclinical hypothyroidism to “overt” over 5 years

Subclinical Hypothyroidism

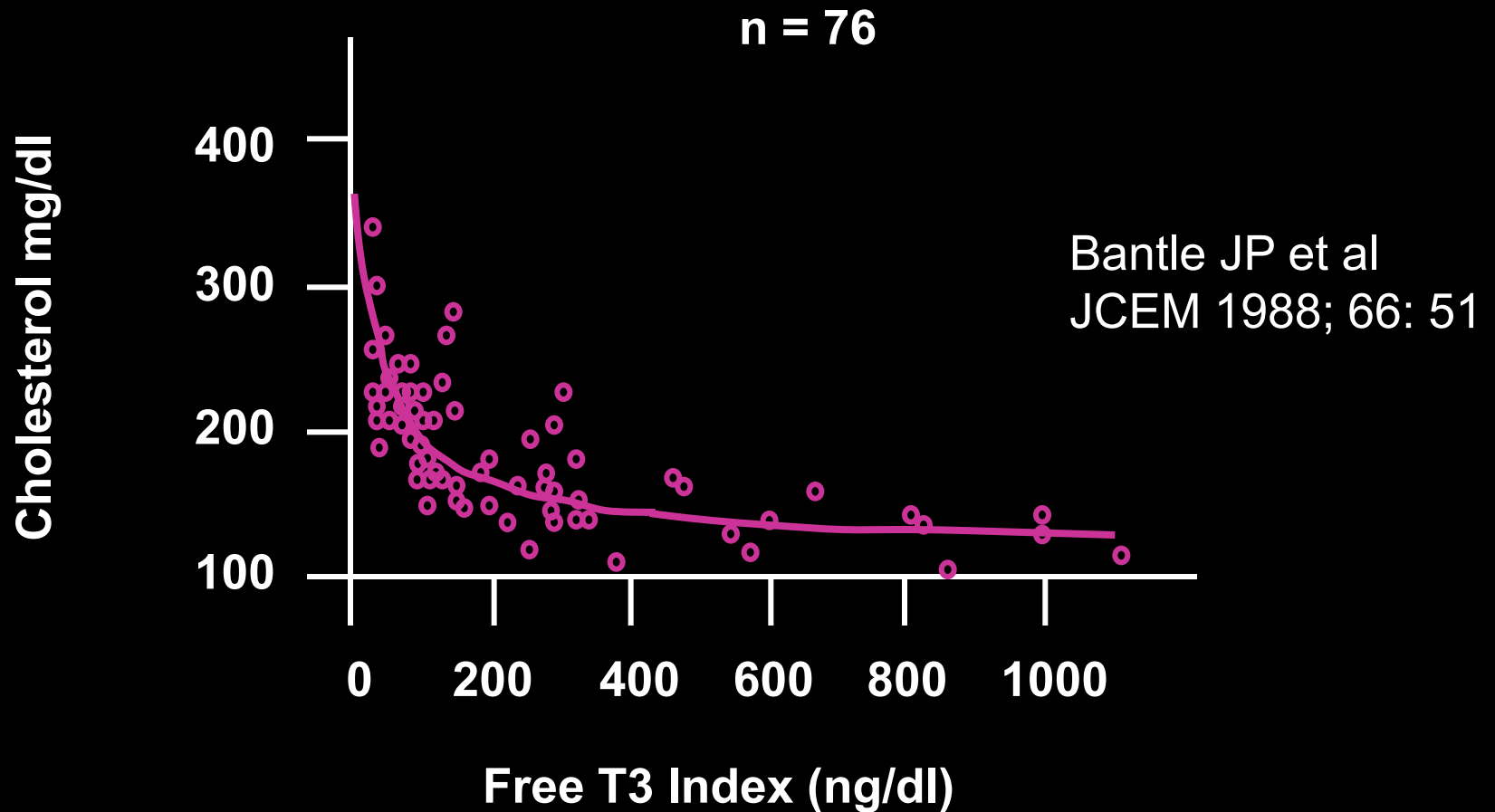
Generally recheck TFTs after 3 months.

**Are there adverse outcomes from
subclinical hypothyroidism ?**

Hypothyroidism:

Cholesterol Effects

Cholesterol - Thyroid



Subclinical Hypothyroidism: Cholesterol Summary

- **There are few appropriately placebo-controlled trials.**
- **The higher the serum TSH the more likely it is to impact the serum cholesterol.**
- **The benefit of levothyroxine therapy likely begins at a TSH of 10 or above.**

Moon et al. Subclinical hypothyroidism and
the risk of cardiovascular disease and
all-cause mortality: A meta-analysis of prospective
cohort studies. **Thyroid** 2018; 28: 1101.

Subclinical Hypothyroidism: meta-analysis

- 35 articles.
- 555,530 participants.
- Subclinical hypothyroid: n = 21,176
- “High TSH with normal fT4” - not further stratified.

Moon et al. Thyroid 2018; 28: 1101.

Subclinical Hypothyroidism Age < 65

- **Increased cardiovascular mortality: RR 1.54 (CI 1.21-1.96)**
- **Increased all cause mortality : RR 1.28 (CI 1.1 – 1.48)**

Moon et al. Thyroid 2018; 28: 1101.

Subclinical Hypothyroidism Age ≥ 65

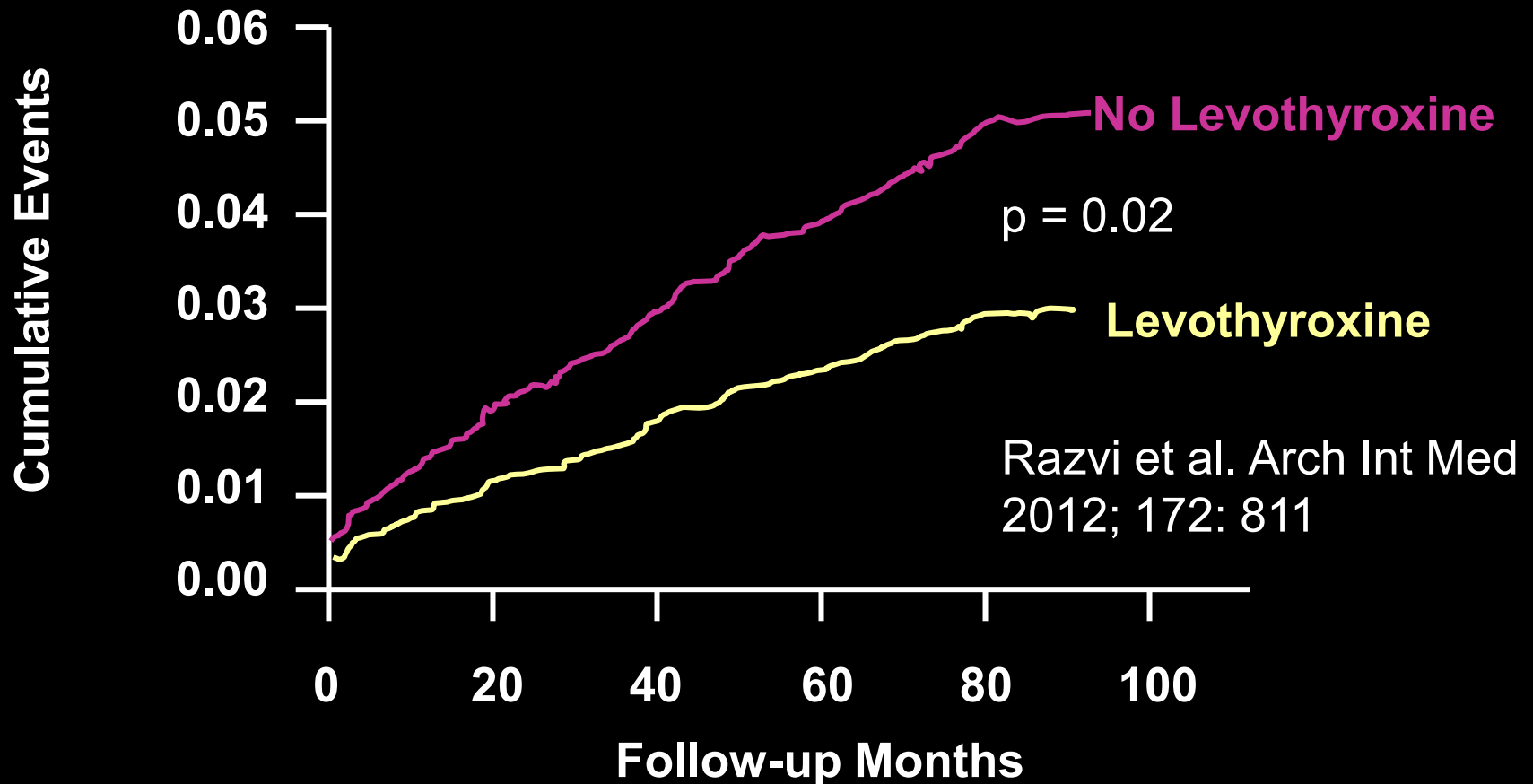
- No significant association with CVD and all cause mortality.
- Low CVD risk: no association with mortality.
- High CVD risk: increased all cause mortality RR 1.41 (1.08-1.85)
but no increased CVD mortality: RR 1.5 (0.89-2.54)
- Note studies from the USA did not show increased mortality
but most had low CVD risk.

Moon et al. Thyroid 2018; 28: 1101.

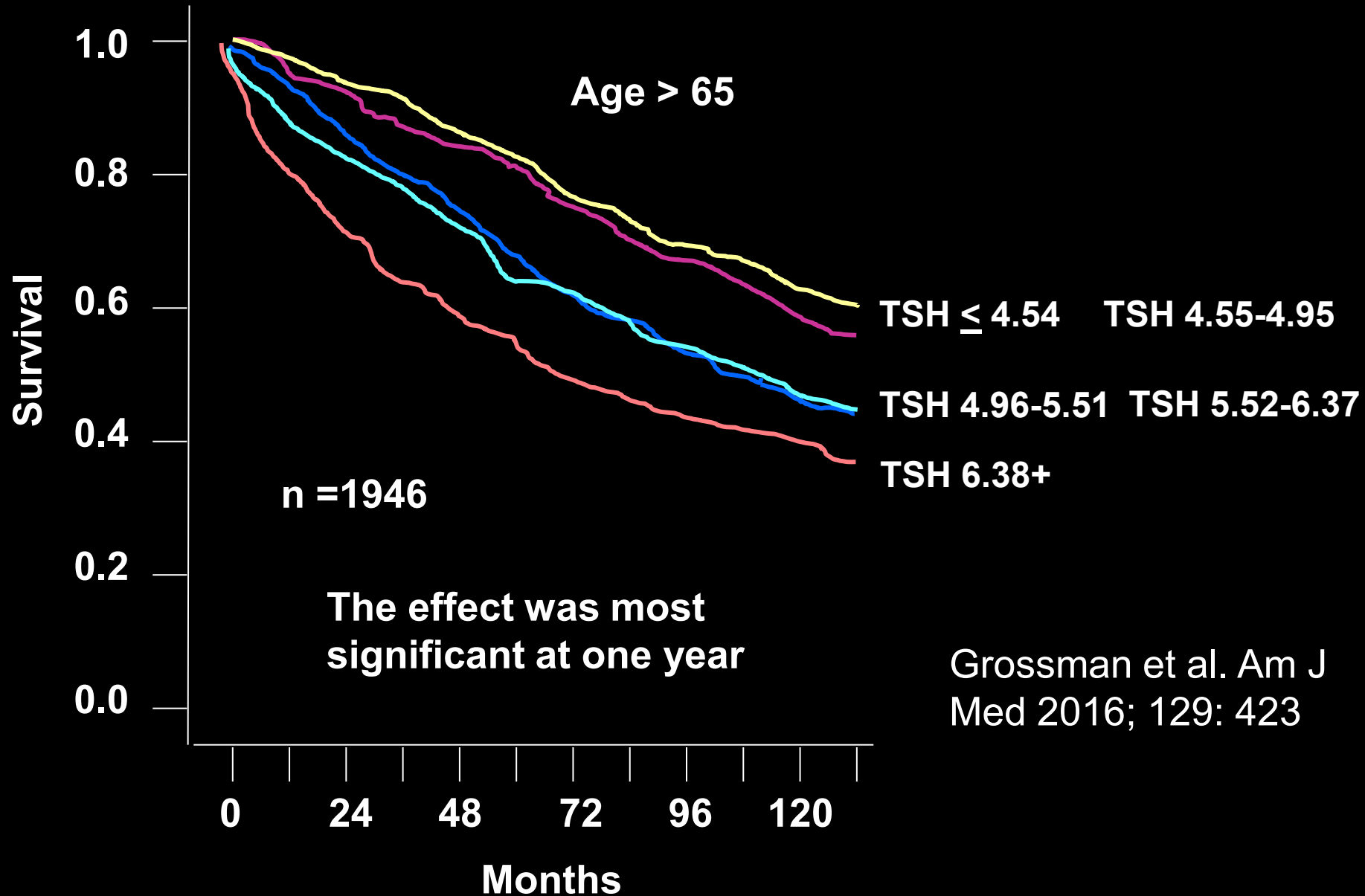
Subclinical Hypothyroidism

Ischemic Heart Disease Events – Multivariate adjusted

Age 40 – 70 (n = 3093)



Subclinical Hypothyroidism - Survival



Grossman A, et al. Treatment with levothyroxine in subclinical hypothyroidism is associated with increased mortality in the elderly **Eur. J. Int Medicine 2018; 50:65-68..**

In the same cohort (previous slide), the use of levothyroxine was associated with increased all-cause mortality OR 1.19 (1.03 – 1.38)

Subclinical Hypothyroidism : Mortality Conclusions

- **Ultimately we require an adequately powered, randomized, placebo-controlled therapeutic trial !**
- **This is particularly difficult when some (many) patients normalize their TSH over the course of the study.**

**Are patients with subclinical
hypothyroidism symptomatic ?**

**Does treating subclinical
hypothyroidism improve symptoms ?**

Subclinical Hypothyroidism

Community based cross-sectional study

- **TSH 4.7 - 10 mU/L : Essentially no differences between euthyroid and subclinical hypothyroidism**
- **TSH > 10 mU/L: Only a few differences.**

Lindeman et al. J Am Geriatr Soc. 1999 47 703-9.

Kong WM et al. A 6-month randomized trial of thyroxine treatment in women with mild subclinical hypothyroidism.
Ann Int Med 2002; 112: 348

TSH 5 - 10 mU/L

TSH 5 - 10 mU/L

- **Presenting symptoms : fatigue 83 %, weight gain 80 % Elevated anxiety scores 50 % Abnormal General Health Questionnaire: 56 %**
 - **No change in lipid measurements metabolic or anthropometric data.**
 - **Anxiety: L-T4 group: improved 50 %, unchanged 10 % ,worse 40 %
Anxiety: Placebo: improved 50 %, unchanged 43 %, worse in 7 %.**
- P = 0.03**
- **Depression: T4 Improved 65 %, unchanged 25 %, worse 10 %
Placebo: Improved 64 %, unchanged 7 %, worse 29 %**

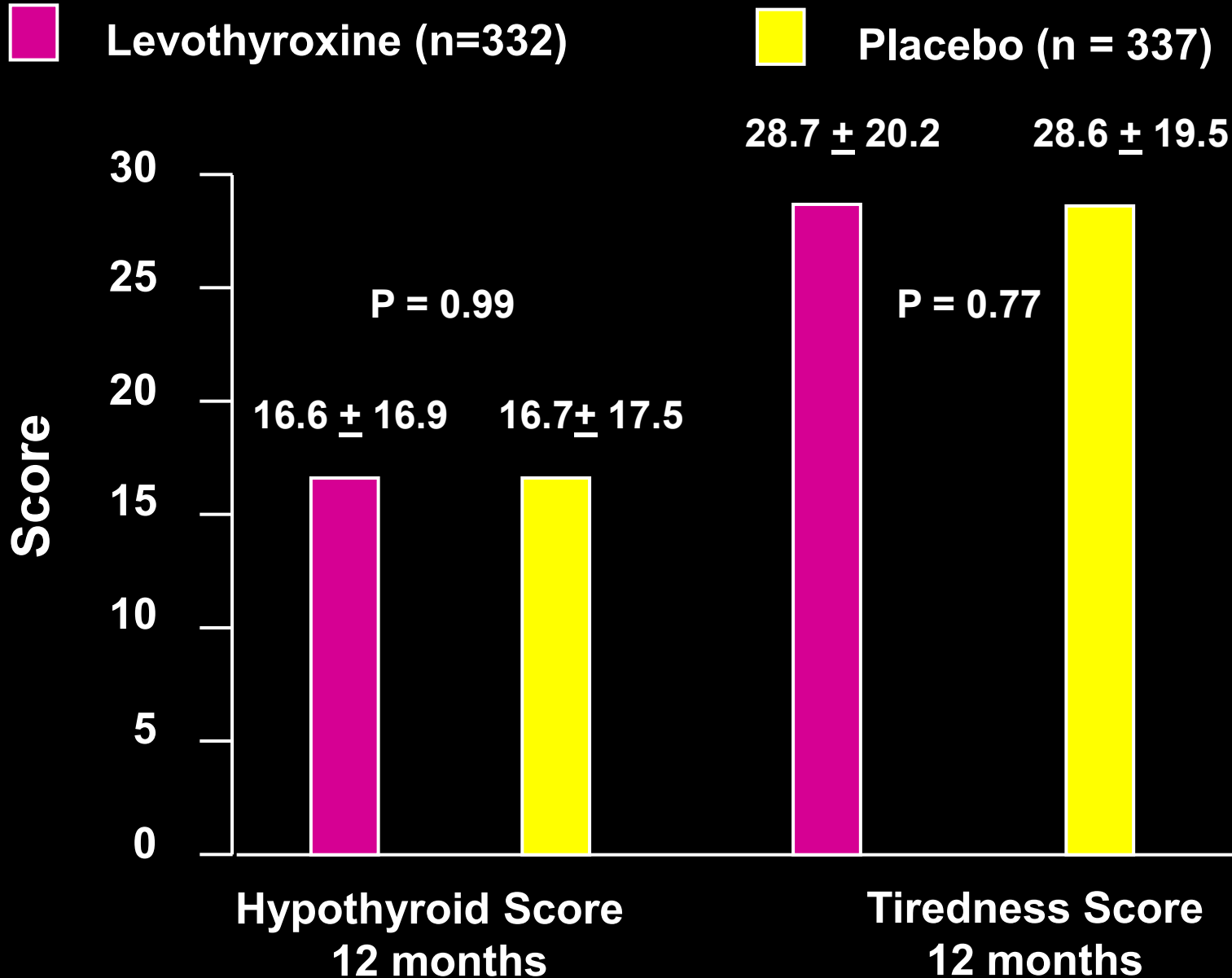
**Stott DJ et al. Thyroid hormone therapy for
older adults with subclinical hypothyroidism.**

New Engl. J Med 2017; 376: 2534-2544

Stott et al.

- **Mean age 74.4 years**
- **Randomized placebo-controlled trial. Goal of therapy to normalize TSH.**
- **Persistent TSH 4.6-19.99mIU/L (mean 6.4 ± 2.01 mIU/L)**
- **Major end-points: Hypothyroid Symptom Score or Tiredness Score.**
- **Of note at baseline 27 % had no hypothyroid symptoms and 8.7% had 0 tiredness score.**

Subclinical Hypothyroidism Elderly



Stott et al
NEJM 2017
epub

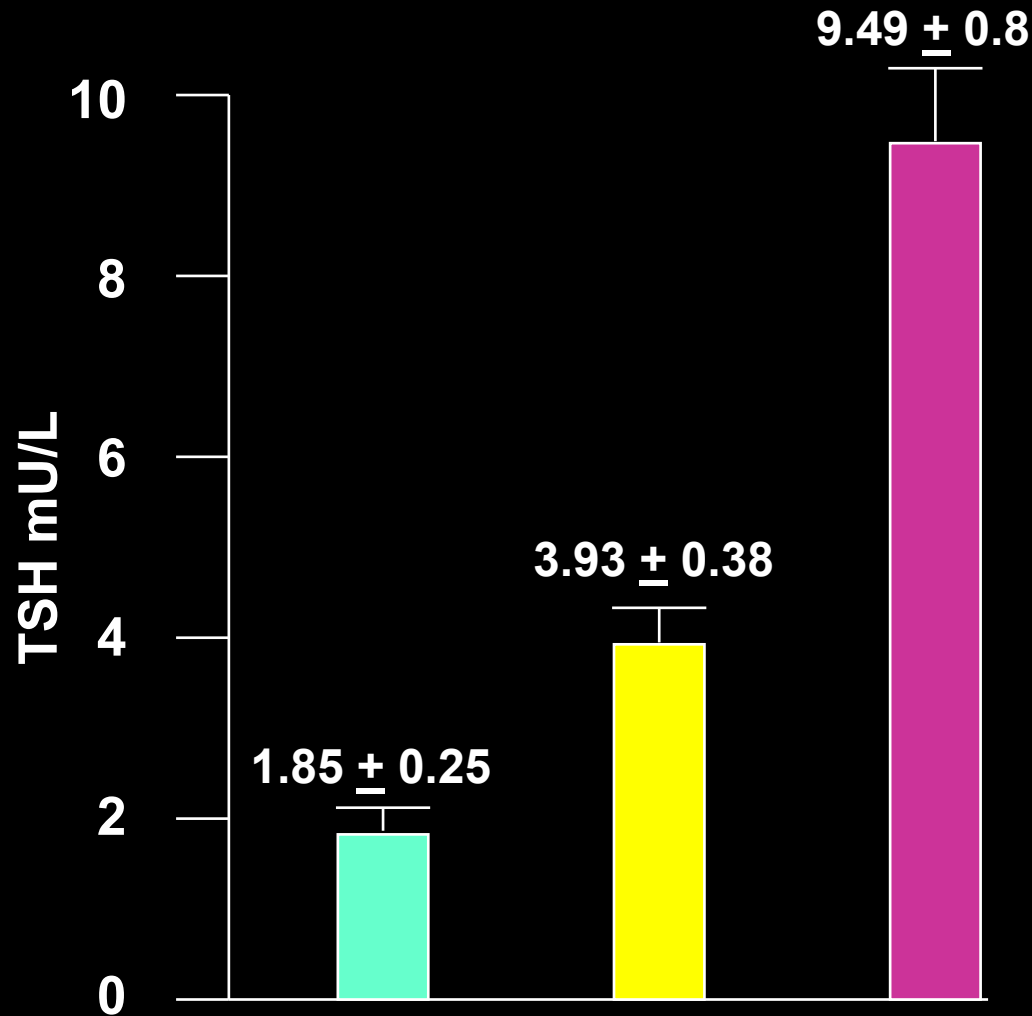
**Does treating subclinical hypothyroidism
improve symptoms ?**

Uncertain !!

**The higher the baseline TSH (particularly >10),
the more likely you are to demonstrate benefit.**

Levothyroxine Dose Titration

138 pts. with stable hypothyroidism on L-T4 11.9 $\pm$ 0.8 years



**Non-significant differences
in outcomes after corrections
for comparison.**

**Patients could not tell
direction of dose change.**

**Preferred dosage which
they thought was highest.**

Samuels et al.
JCEM 2018; 103: 1997

Subclinical Hypothyroidism

- **With TSH 4.7 - 10 mU/L : most are asymptomatic.**
- **No good evidence for L-T4 symptomatic benefit in this range.**
- **No good evidence for L-T4 cholesterol lowering in this range.**
- **There may be symptomatic and cholesterol benefit with TSH > 10.**
- **On the other hand, in the absence of overtreatment, there is no compelling evidence for harm with levothyroxine treatment.**

What to do when TSH elevated

Patient on thyroid hormone:

generally increase dose.

What to do when TSH elevated

Patient not on thyroid hormone:

Repeat measurement.

Use common sense !

**My TSH is 6. I feel terrible.
Nothing is right. I'm cold,
tired, hungry, constipated
and depressed. Please treat
me with thyroid hormone!**



Subclinical Hypothyroidism

**My TSH is 6. I feel fine !
Do I really have to be treated
with thyroid hormone for
the rest of my life ?**



Subclinical Hypothyroidism

To treat or not to treat ?

Subclinical Hypothyroidism

	Treat ?	Observe ?
Symptoms	Yes	No
Age	Younger	Older
TSH mU/L	> 10	5 - 10
+ Thyroid Ab	Yes	No
Post-Ral	Yes	No
Goiter	Yes	No
Heart Disease	No	Yes
Pregnancy	Yes	No

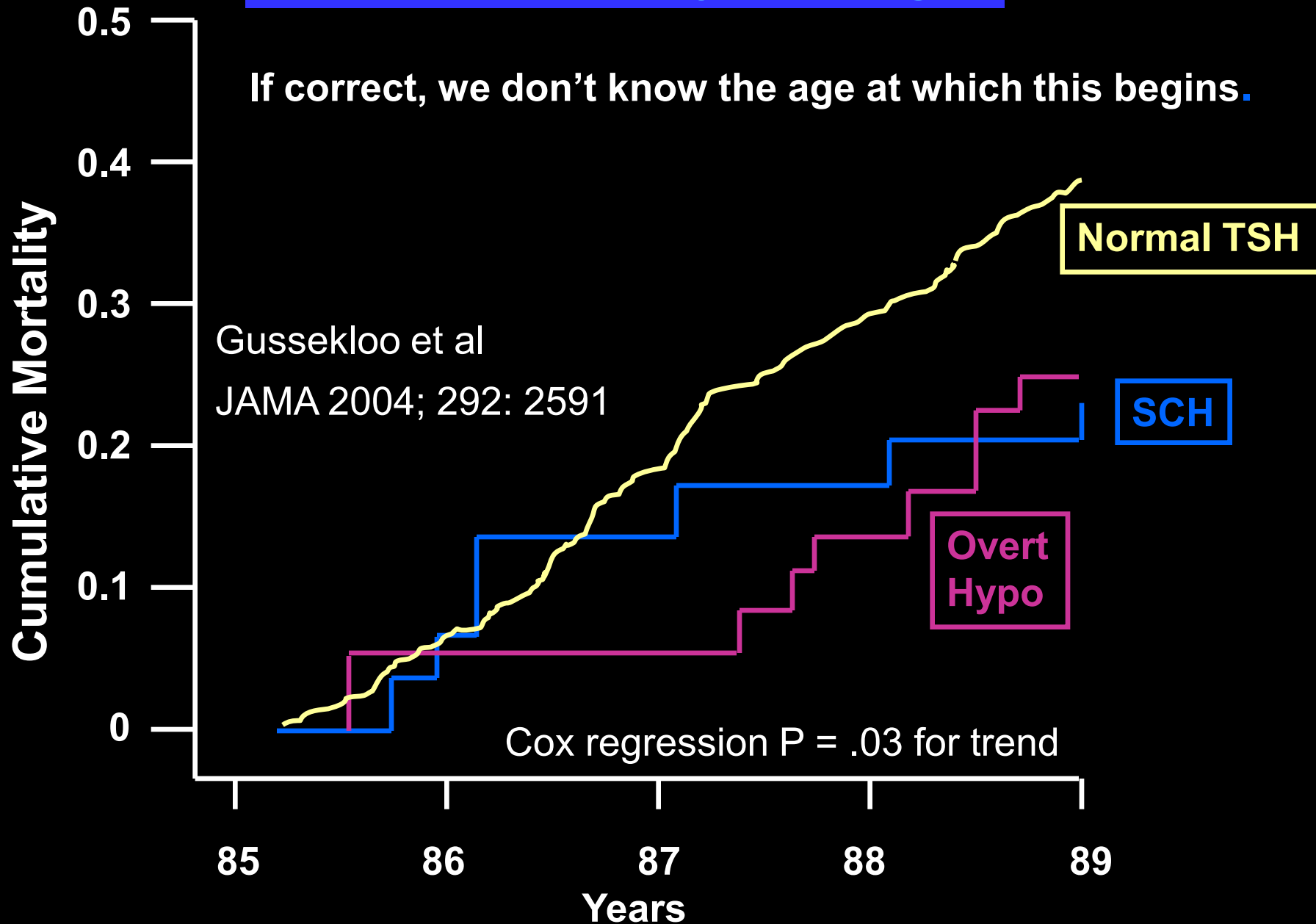
Why not screen for and treat all subclinical hypothyroidism?

- **Consequences of subclinical hyperthyroidism.
Up to 20 % on T4 have low TSH.**
- **Consequences of labeling.**
- **Patients taking levothyroxine don't feel as well as controls (Saravanan).**
- **Consequences of multi-drug therapy in elderly**
- **Cost of drug, tests and visits, if unnecessary.**

Gussekloo et al. Thyroid status, disability and cognitive function and survival in old age. **JAMA 2004; 292: 2591**

Cumulative Mortality in the Aged

If correct, we don't know the age at which this begins.



Selmer et al. Subclinical and overt thyroid dysfunction
and risk of all-cause mortality and cardiovascular events: A
large population study. **J Clin Endocrinol Metab.** 2014; 99: 2372

Subclinical Hypothyroidism

- Mean age 48.6
- 11, 560 subclinical hypothyroidism
- For those with TSH 5 – 10 mU/L, all cause mortality was lower than controls: 0.91 (0.85 – 0.98)

Case History

A 35 year old woman has an MRI of the neck performed for neuromuscular symptoms.

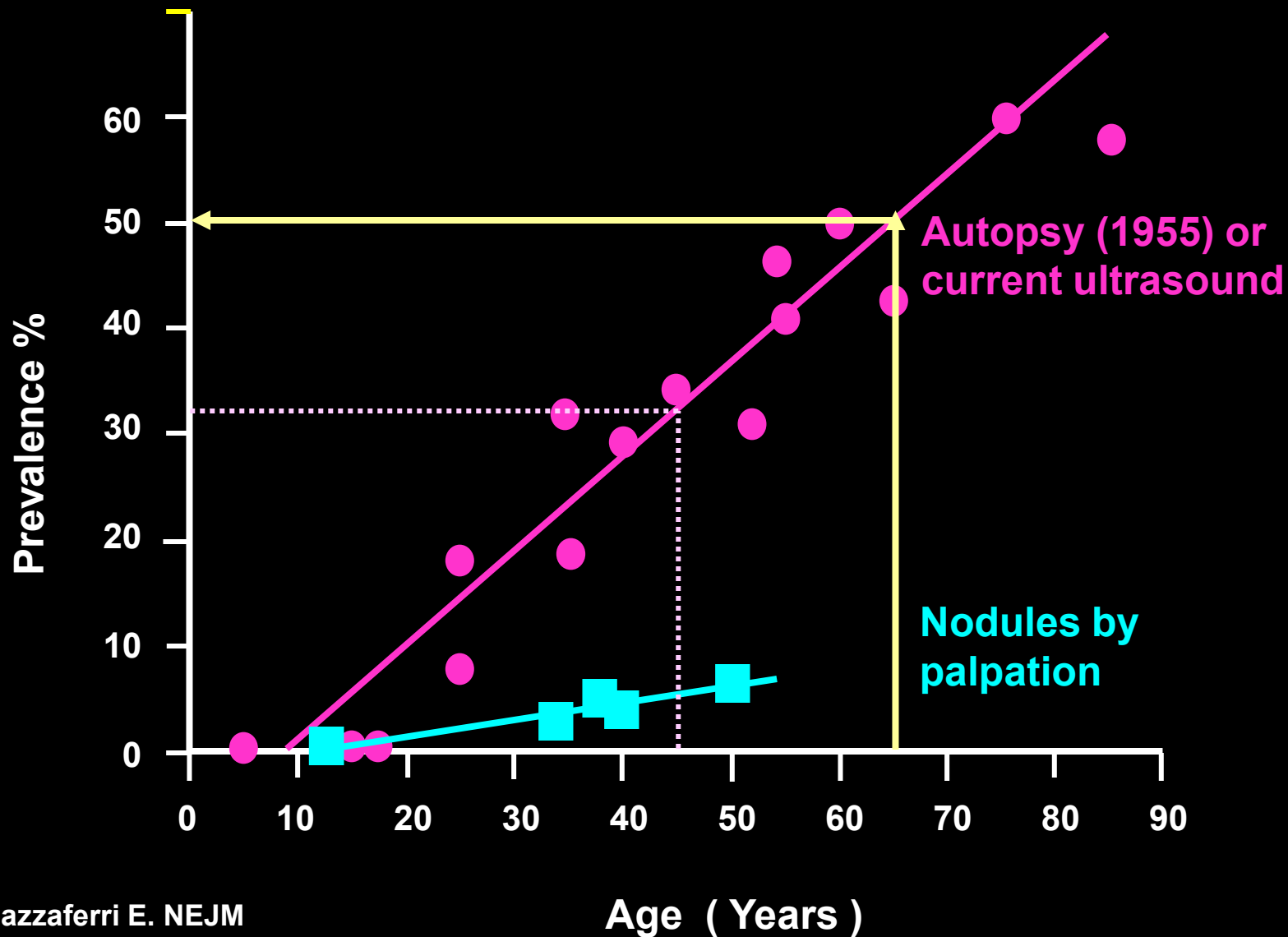
A 2.5 cm thyroid nodule is discovered and confirmed with an ultrasound.

What should be done ?

Thyroid Nodules



Thyroid Nodules > 1 cm



Case History

- **These days, most thyroid nodules are discovered incidentally (CT scan, MRI, carotid ultrasound, PET scan).**
- **Incidentally discovered thyroid nodules need to be evaluated in similar fashion to palpated nodules !**

Thyroid Cancer

Clinically Uncommon

- 200 new cases per million per year
- 65,000 new cases per year in USA in 2016.

Pathologically Common

- 10 - 20 % (or more) of all thyroids harbor papillary thyroid microcarcinomas.

Thyroid Nodule : Goals

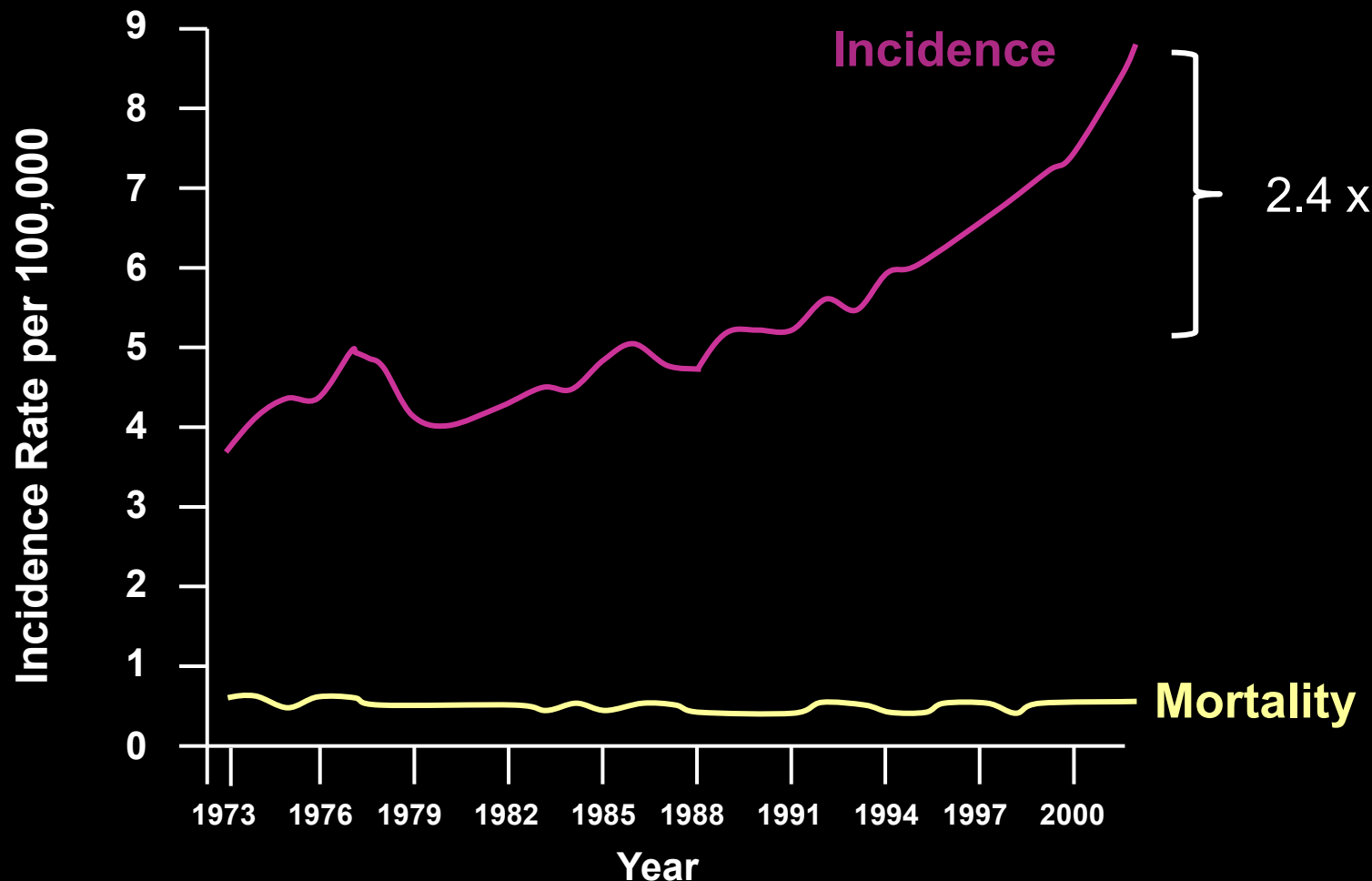
- Identify important thyroid cancer !
- Avoid unnecessary surgery !

Thyroid Cancer : Incidence and Mortality

Davies et al,
JAMA 2006;
195: 2164

1973 - 2002

2014: now 12.9/100K



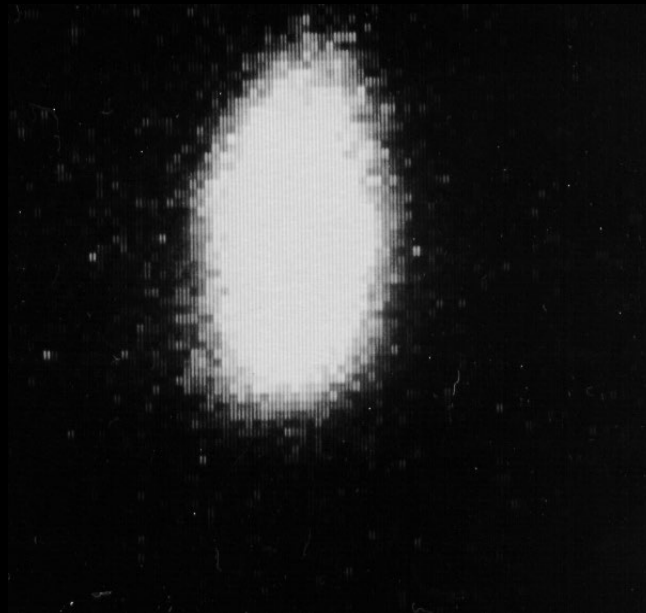
Possible Thyroid Nodule

- **Measure serum TSH**
- **Confirm nodule (usually ultrasound)**
- **Nodule risk assessment**
- **FNA if appropriate**

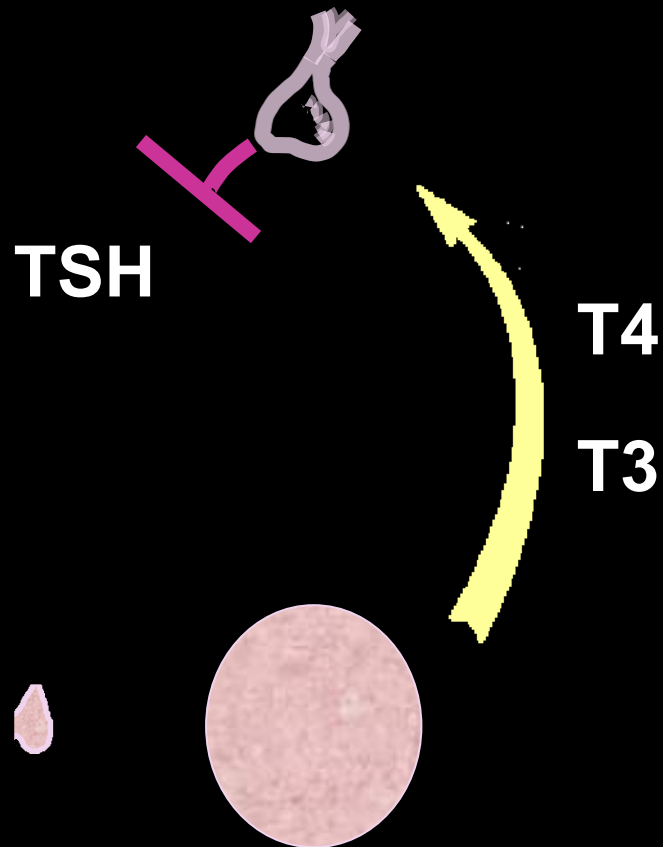
Thyroid Nodules - Low TSH

- Radioiodine scan

Hot Nodule



Hot Nodule

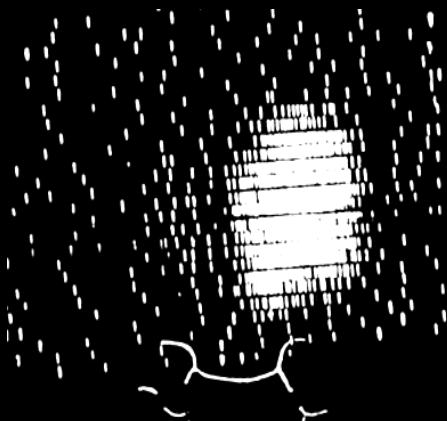


Hot Nodule

- **About 5 % of nodules.**
- **Almost always (> 99%) benign !**

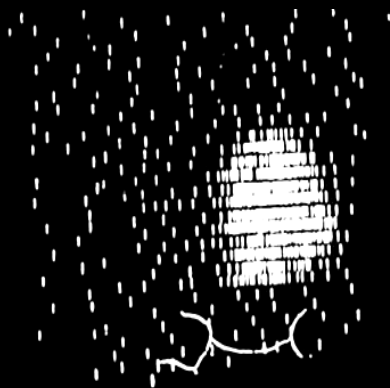
Hot Nodule : Radioiodine Therapy

3-17-59



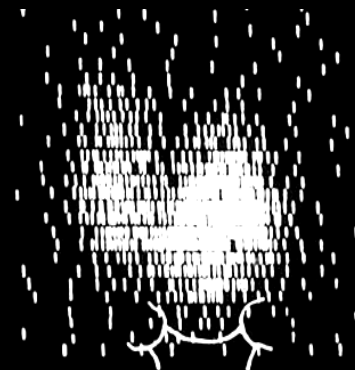
RaI U 51 %
PBI 10.4
Rx 8 mCi ^{131}I

7-28-59



RaI U 32 %
PBI 4.0

4-14-60



RaI U 35 %
PBI 4.2

Hot Nodule : Therapy

- **Radioiodine**
- **Surgery**
- **Alcohol ablation**
- **Radiofrequency ablation**
- **Laser ablation**
- **Focused ultrasound ablation**

Thyroid Nodules: Physical Exam

- **With rare exceptions physical exam does not help us stratify the risk of malignancy in thyroid nodules.**

PET-Positive Thyroid Incidentaloma

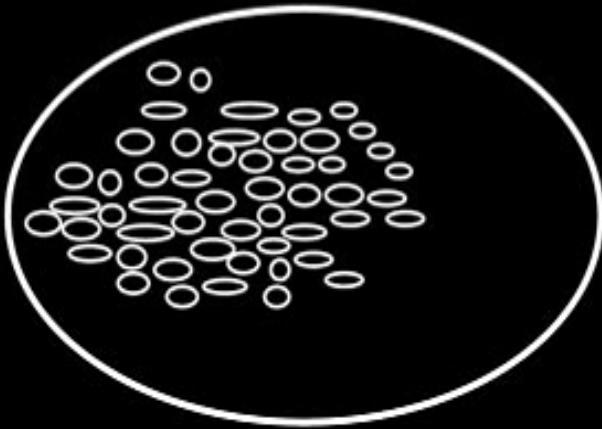
- **Focal FDG PET uptake in a nodule: 33% risk of thyroid cancer**
- **Diffuse uptake usually indicates Hashimoto's thyroiditis.**

Thyroid Nodule : Ultrasound

- **Confirm presence of nodule**
- **Nodule risk assessment**
- **US guided FNA if indicated**

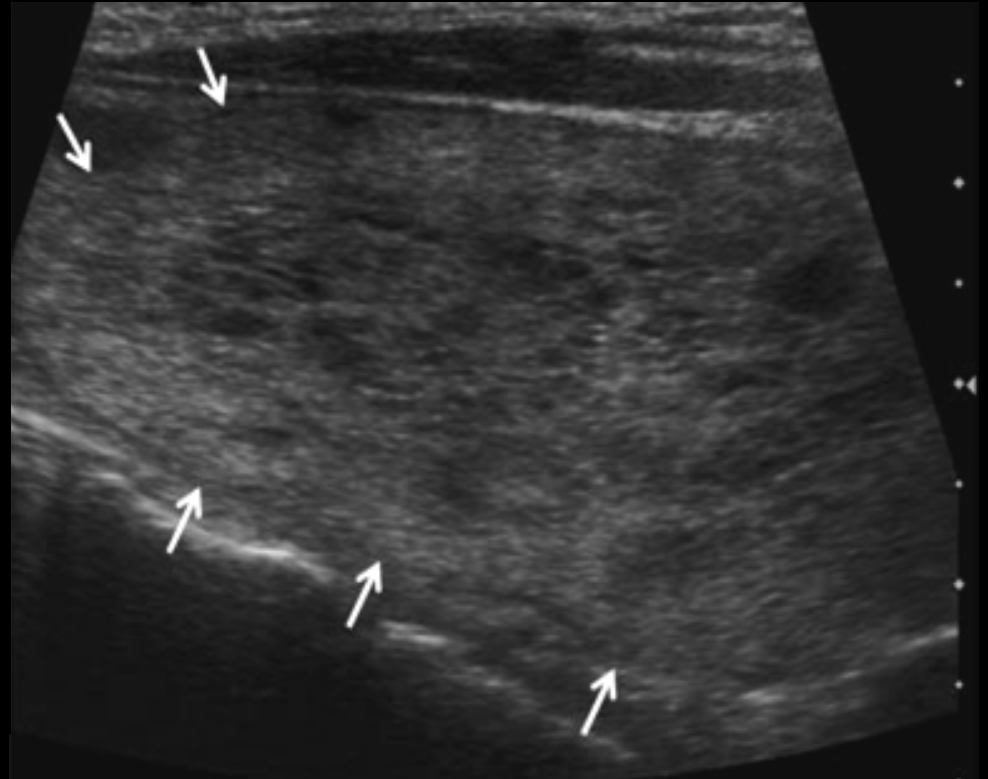
Spongiform Appearance: Benign

**Multiple micro-cystic components
> 50% of the volume of the nodule**



Specificity 99.7 %

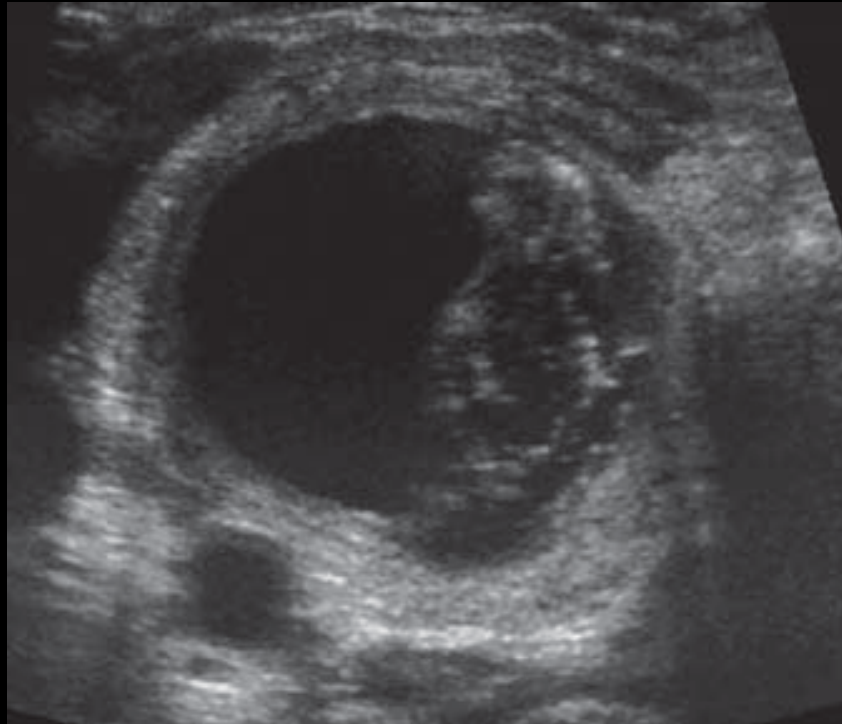
Sensitivity 10.4 %



Moon et al. Radiology 2008; 247: 762

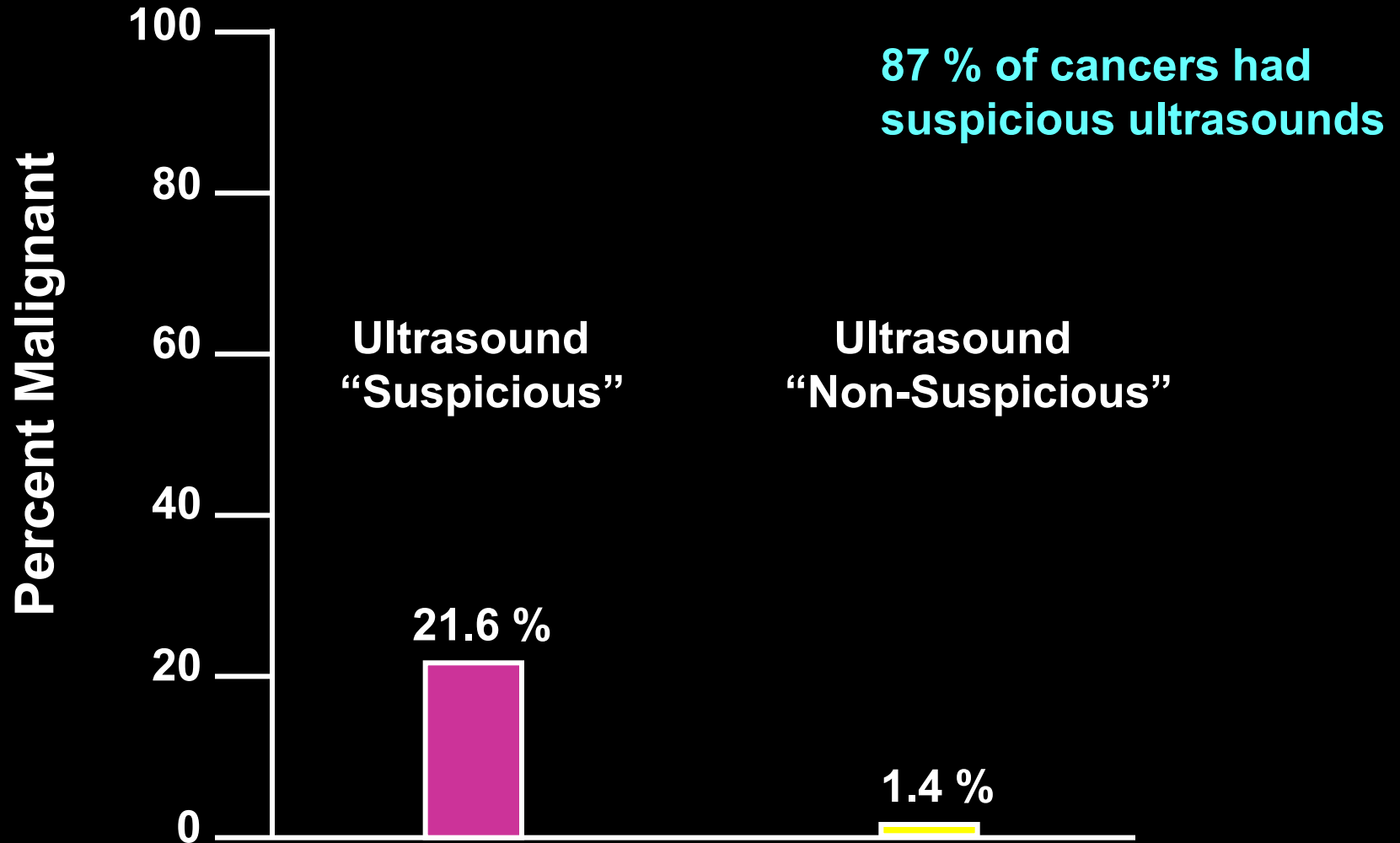
Bonavita et al. Am J Roetgenol 2009; 193: 207

Colloid Cyst: Benign



Bonavita et al AJR 2009; 193: 207

Nodules 8 - 15 mm



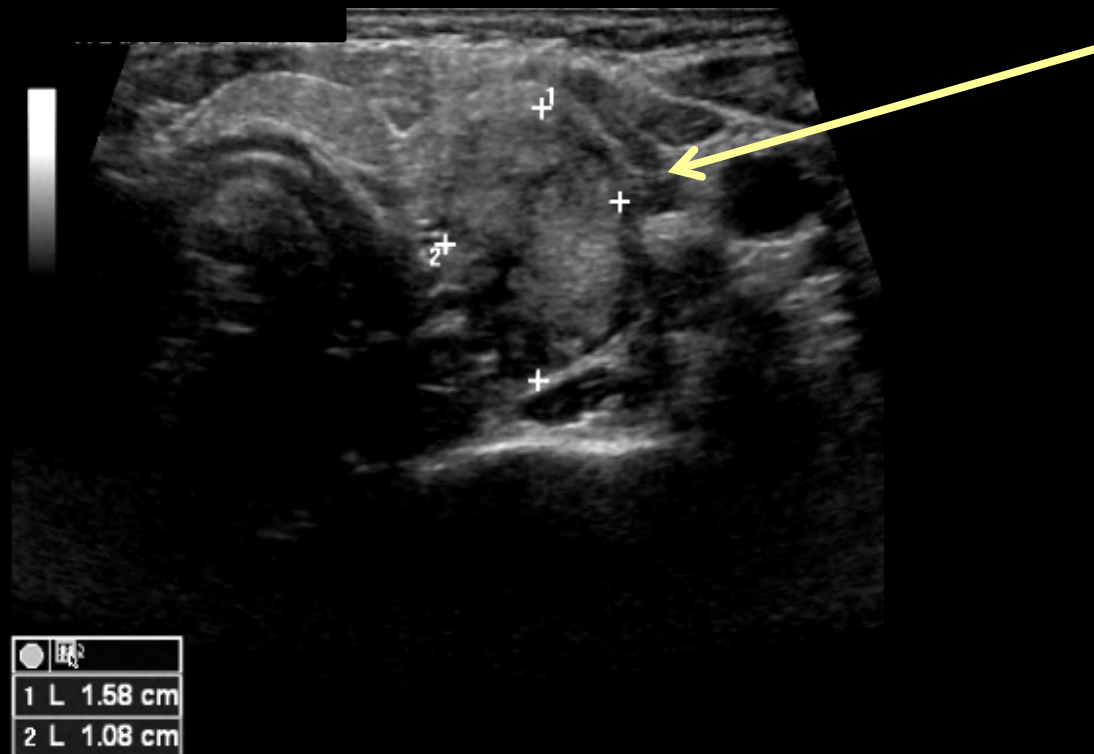
Suspicious Nodules

Statistically Significant Criteria For Malignancy

- **Taller than wide**
- **Spiculated margin**
- **Markedly hypoechoic**
- **Microcalcifications**
- **Macrocalcifications**

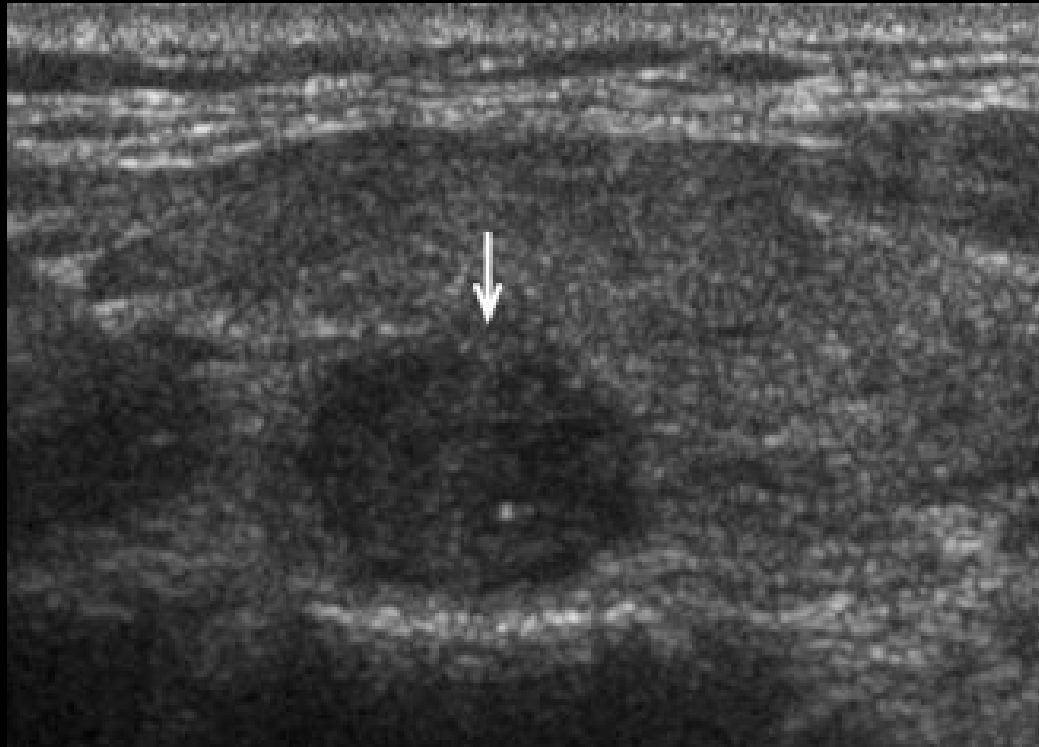
Taller than Wide

Increased AP diameter

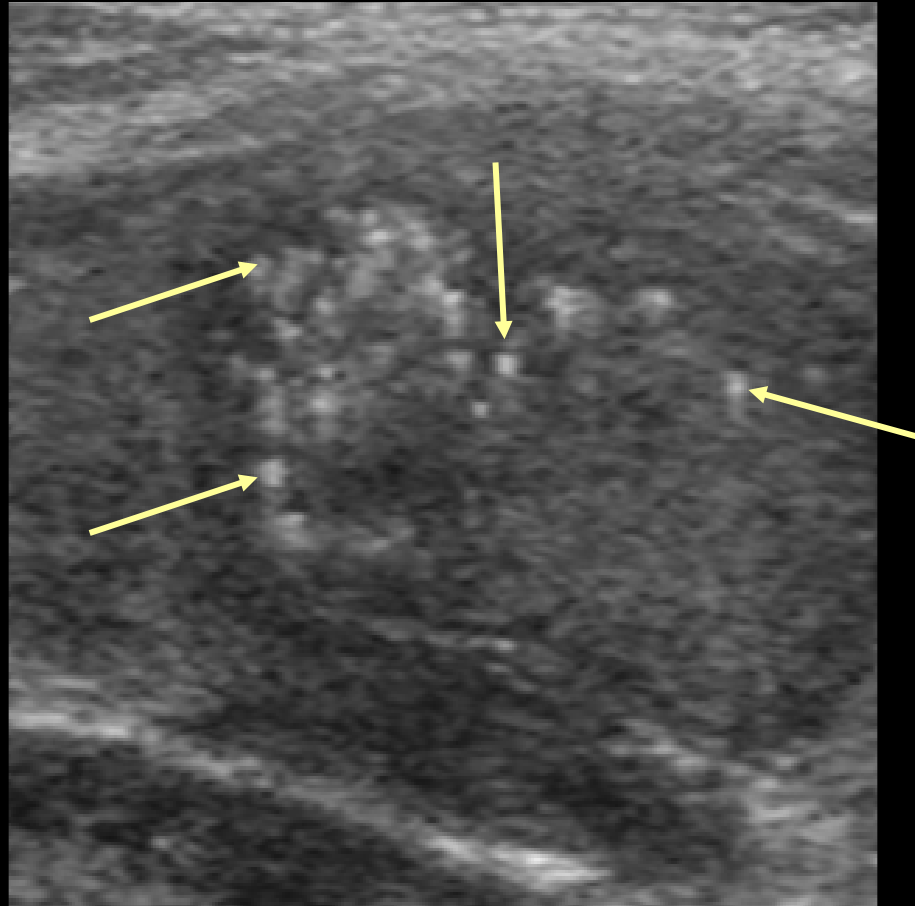


Spiculated-Irregular Margin

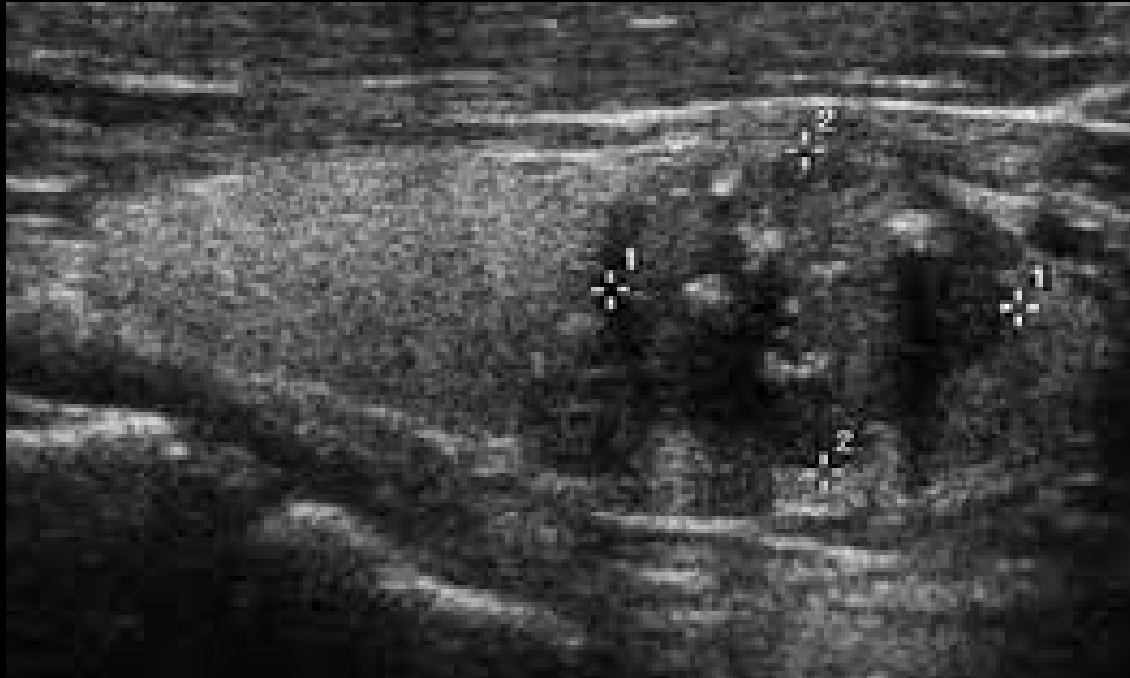
Markedly Hypoechoic



Microcalcifications

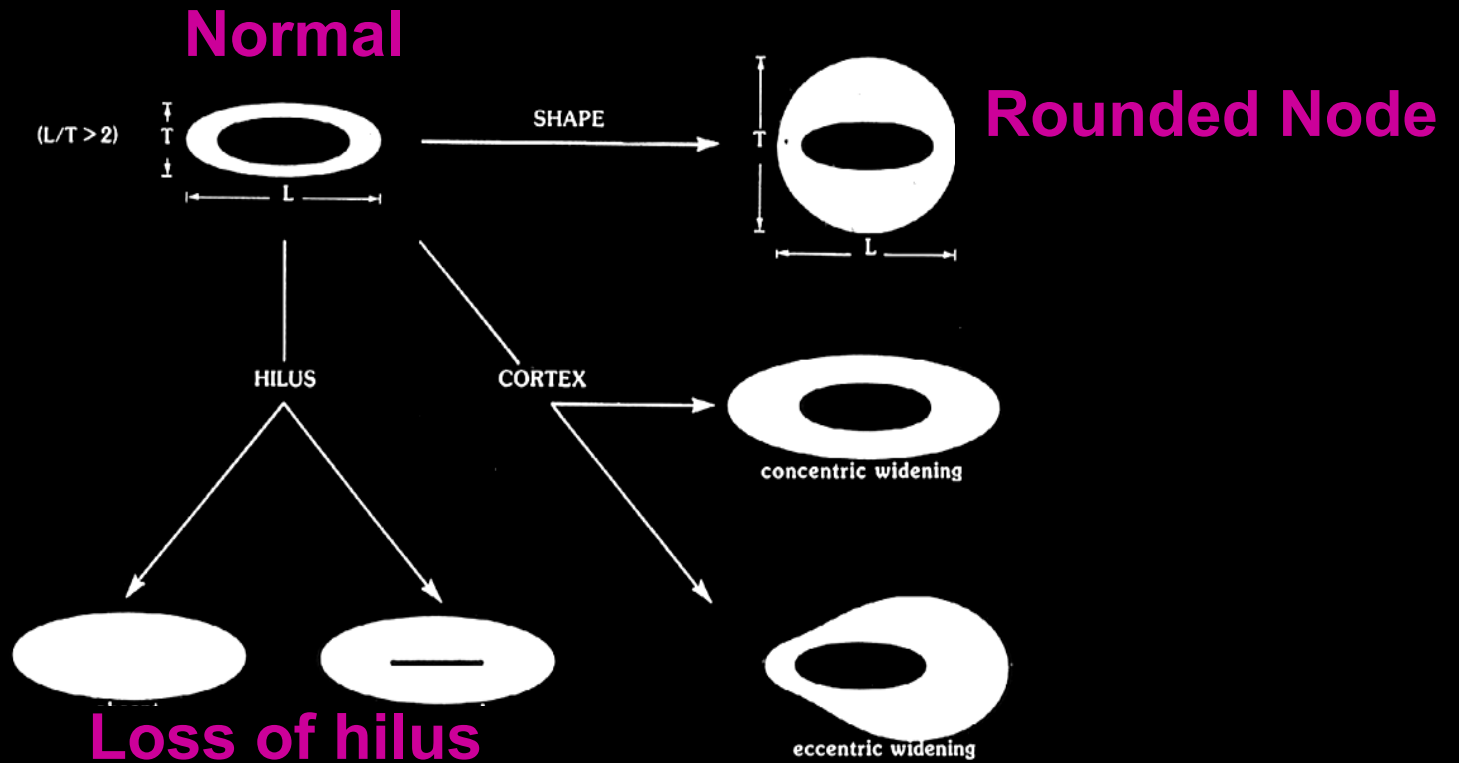


Macrocalcifications



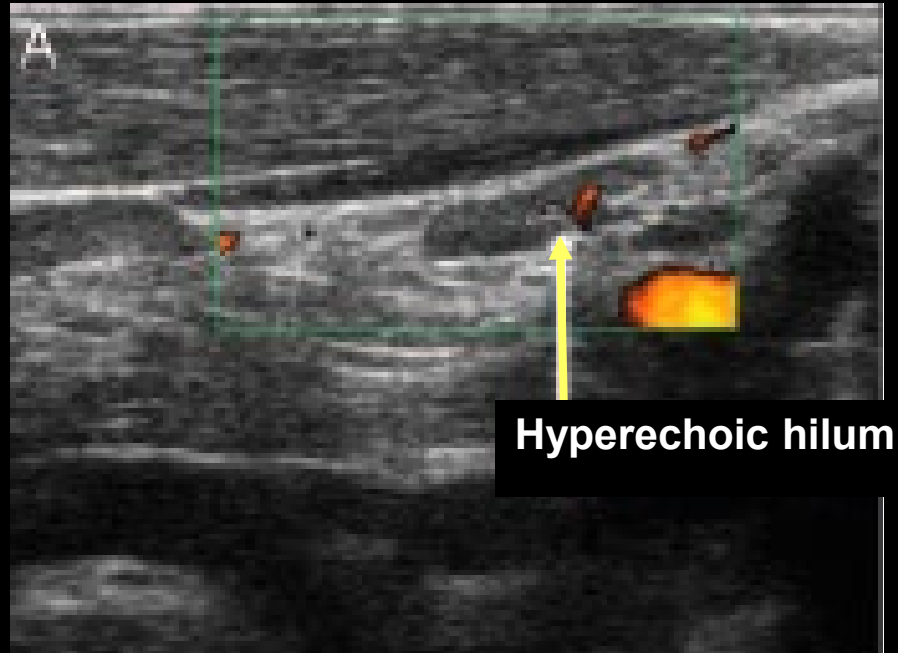
Ultrasound

Lymph Node Morphology



Radiol 1992; 183:219

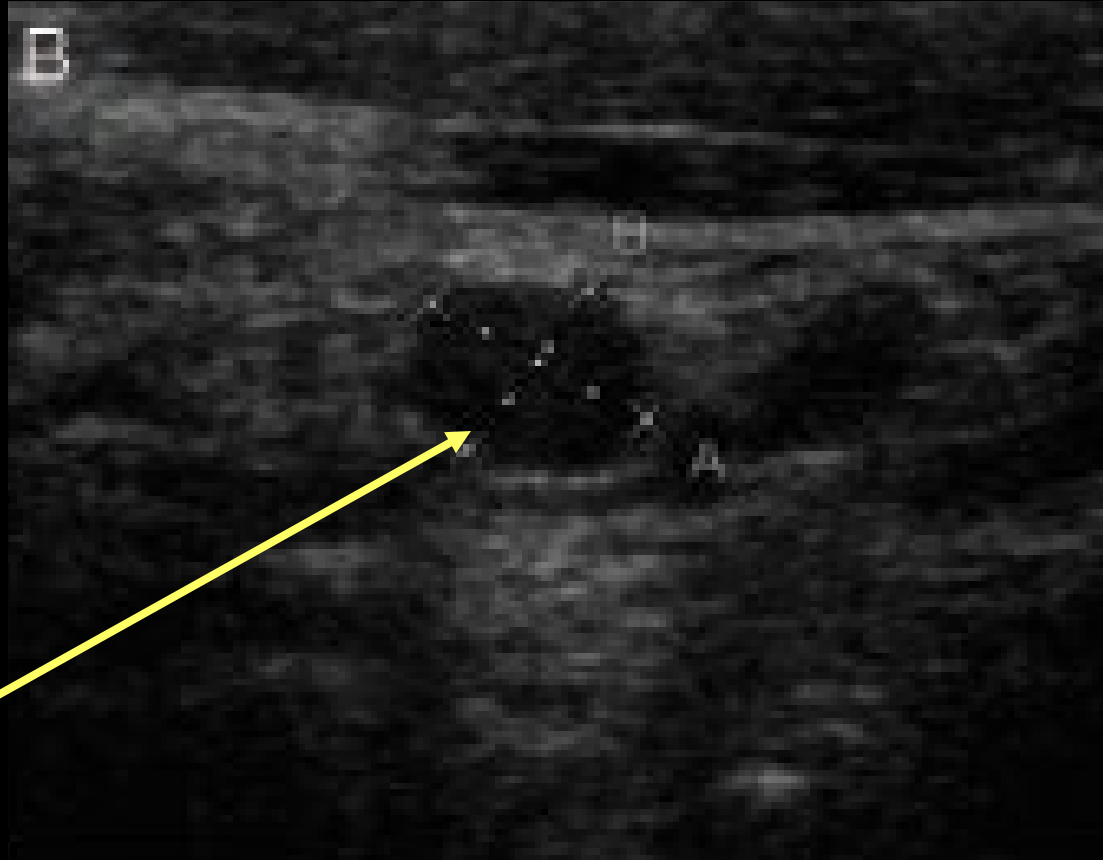
Benign Node



Leboulleux et al

JCEM 2007; 92: 3590

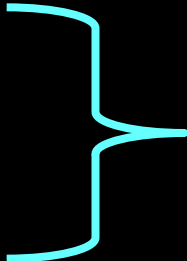
Round Hypoechoic Node



Leboulleux et al

JCEM 2007; 92: 3590

Thyroid Nodules

- **Hot nodule**
 - **Multinodular thyroid**
 - **Single “non-hot” nodule**
- 
- 95 % of nodules**

Thyroid cancer risk per patient

- **Single nodule :** 5 - 15 %
- **Multiple nodules :** 5 – 15 % per gland

Fine Needle Biopsy

Helps predict the malignancy risk

Case History

Our patient has an ultrasound guided fine needle aspiration biopsy of her 2.5 cm solid thyroid nodule.

She is told that the result is “indeterminate”.

Case History

- **What does this mean ?**
- **What should be done ?**

Fine Needle Aspiration Biopsy (FNAB)

- **Non-diagnostic :** **Repeat**
- **Malignant :** **Surgery**
- **Benign :** **Follow**
- **Suspicious:** **Suggest surgery**
Indeterminate:

2008 Criteria

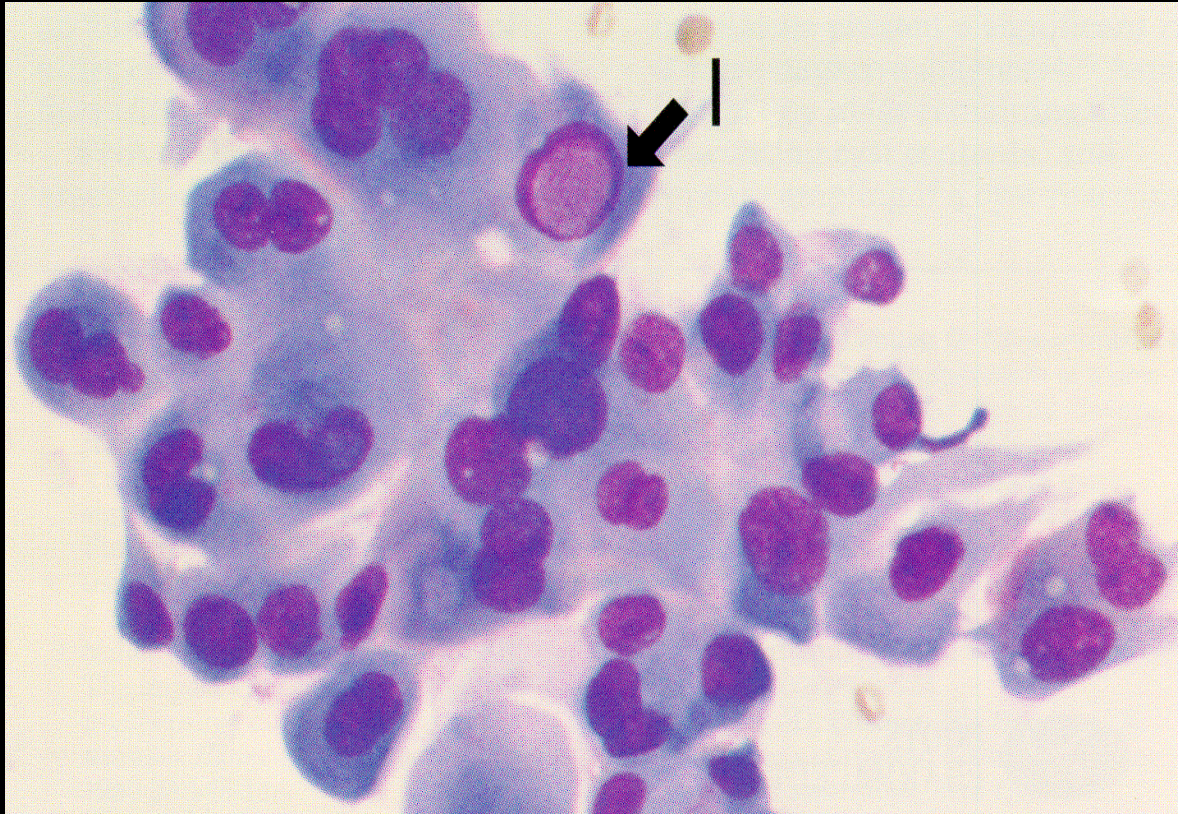
Fine Needle Aspiration Biopsy (FNAB)

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Indeterminate:

Fine Needle Aspiration Biopsy (FNAB)

- **Non-diagnostic :** **Repeat**
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- **Suspicious:** **Suggest surgery**
Indeterminate:

Papillary Thyroid Carcinoma



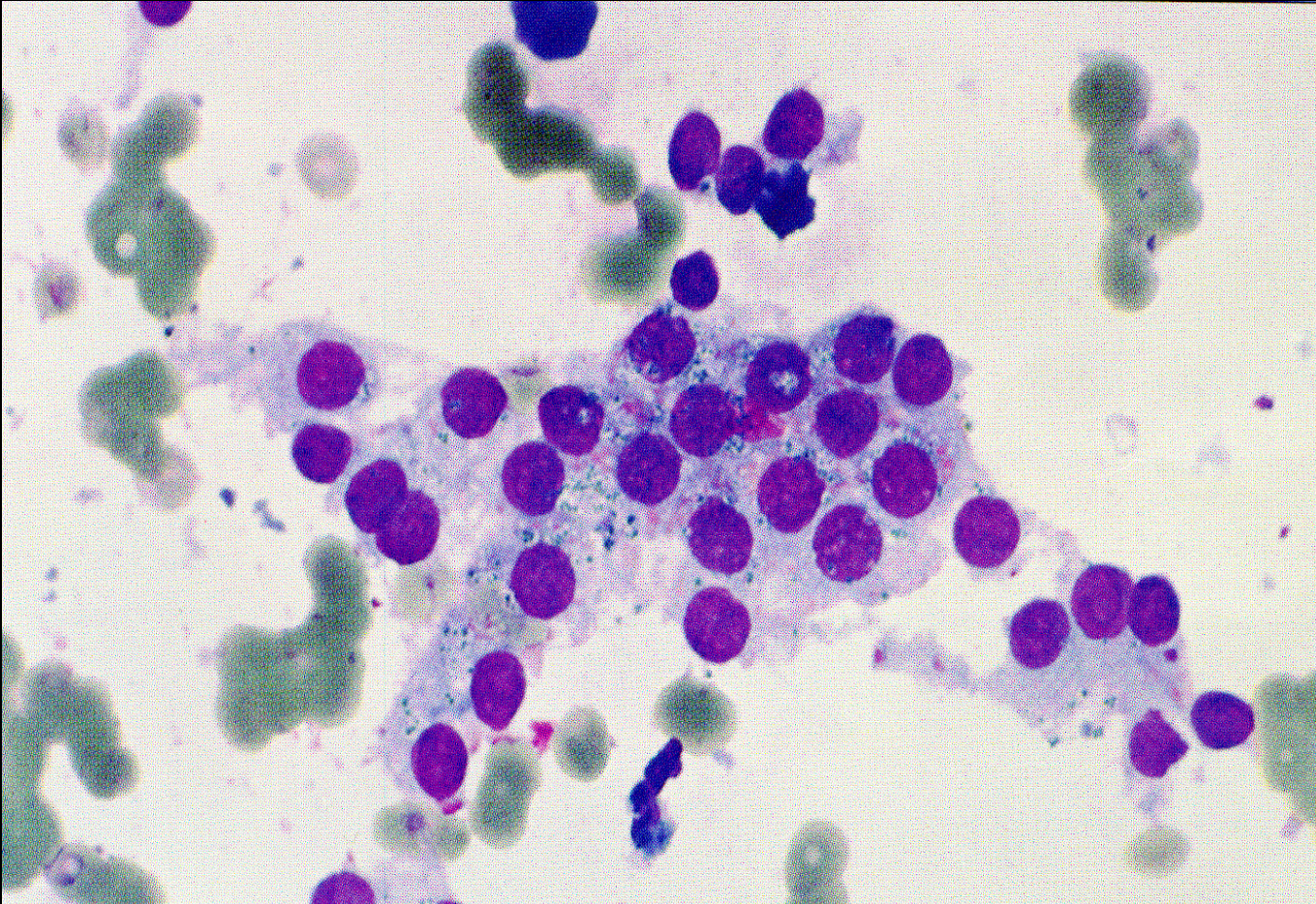
Fine Needle Aspiration Biopsy (FNAB)

- **Non-diagnostic :** **Repeat**
- **Malignant :** **Surgery**
- **Benign :** **Follow**
- **Suspicious:** **Suggest surgery**
Indeterminate:

Benign FNA

- **Macrofollicular adenoma**
- **Colloid adenoma**
- **Hashimoto's thyroiditis**
- **Granulomatous thyroiditis**

Macrofollicular Adenoma



Benign FNA

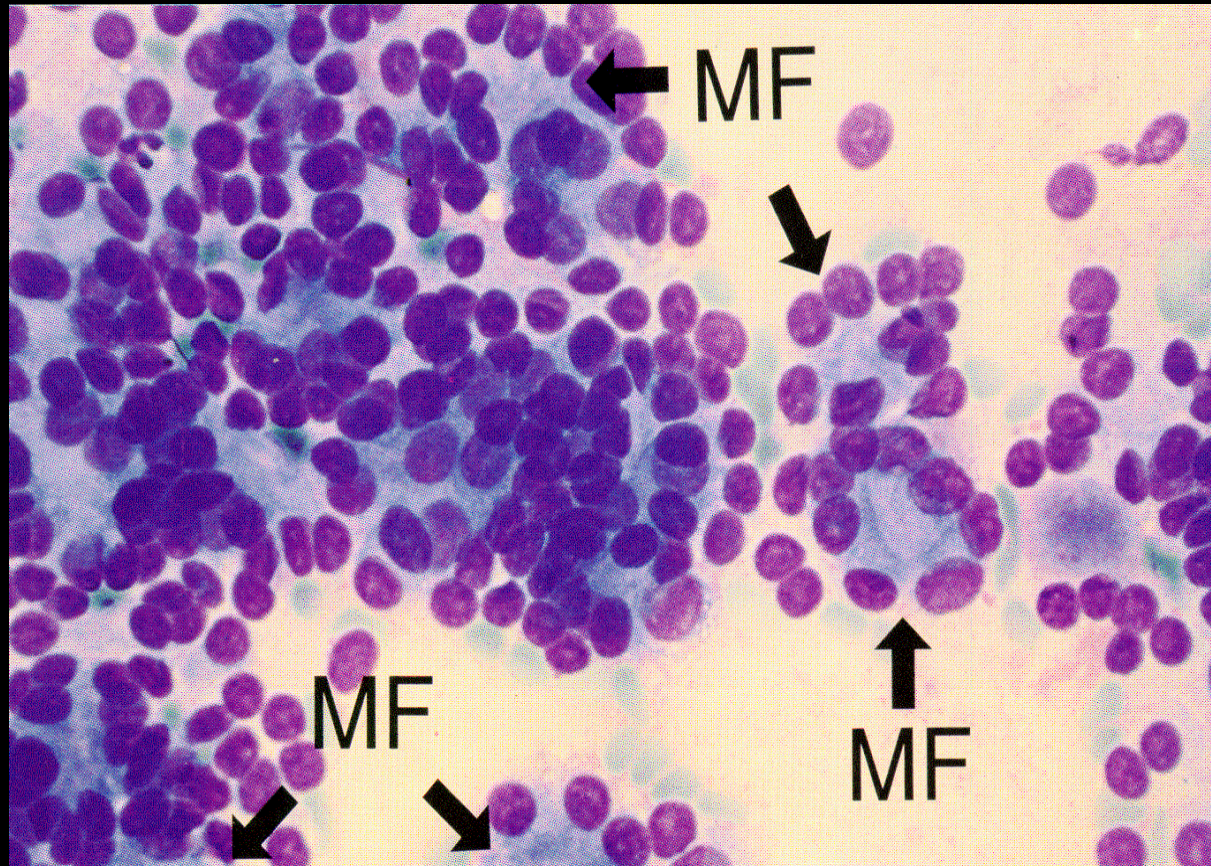
- **Patients :** **439**
- **Follow- up :** **6.1 years**
- **Cancers :** **3 (0.7 %)**

Fine Needle Aspiration Biopsy (FNAB)

- **Non-diagnostic :** **Repeat**
- **Malignant :** **Surgery**
- **Benign :** **Follow**
- **Suspicious:** **Suggest surgery**
Indeterminate:

Follicular Neoplasm

(Microfollicular Lesion)



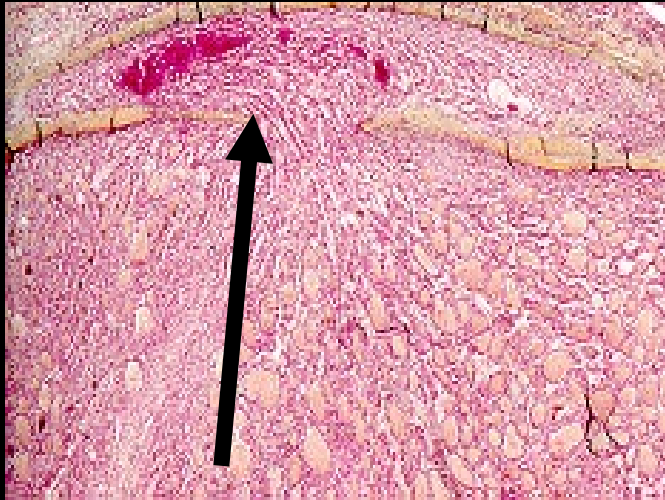
Malignant Thyroid FNA

- **Classical papillary thyroid carcinoma**
- **Medullary thyroid carcinoma**
- **Anaplastic thyroid carcinoma**
- **Thyroid lymphoma**
- **Carcinoma metastatic to the thyroid**

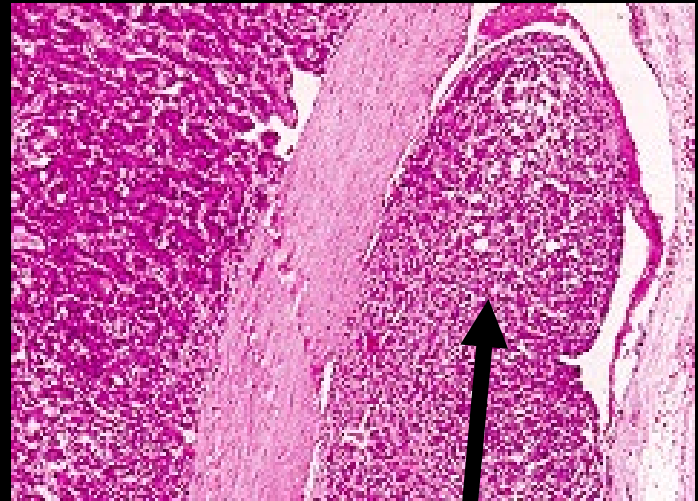
FNA cannot diagnose:

- **Follicular thyroid carcinoma**
- **Follicular variant of papillary thyroid ca.**

Follicular Thyroid Carcinoma

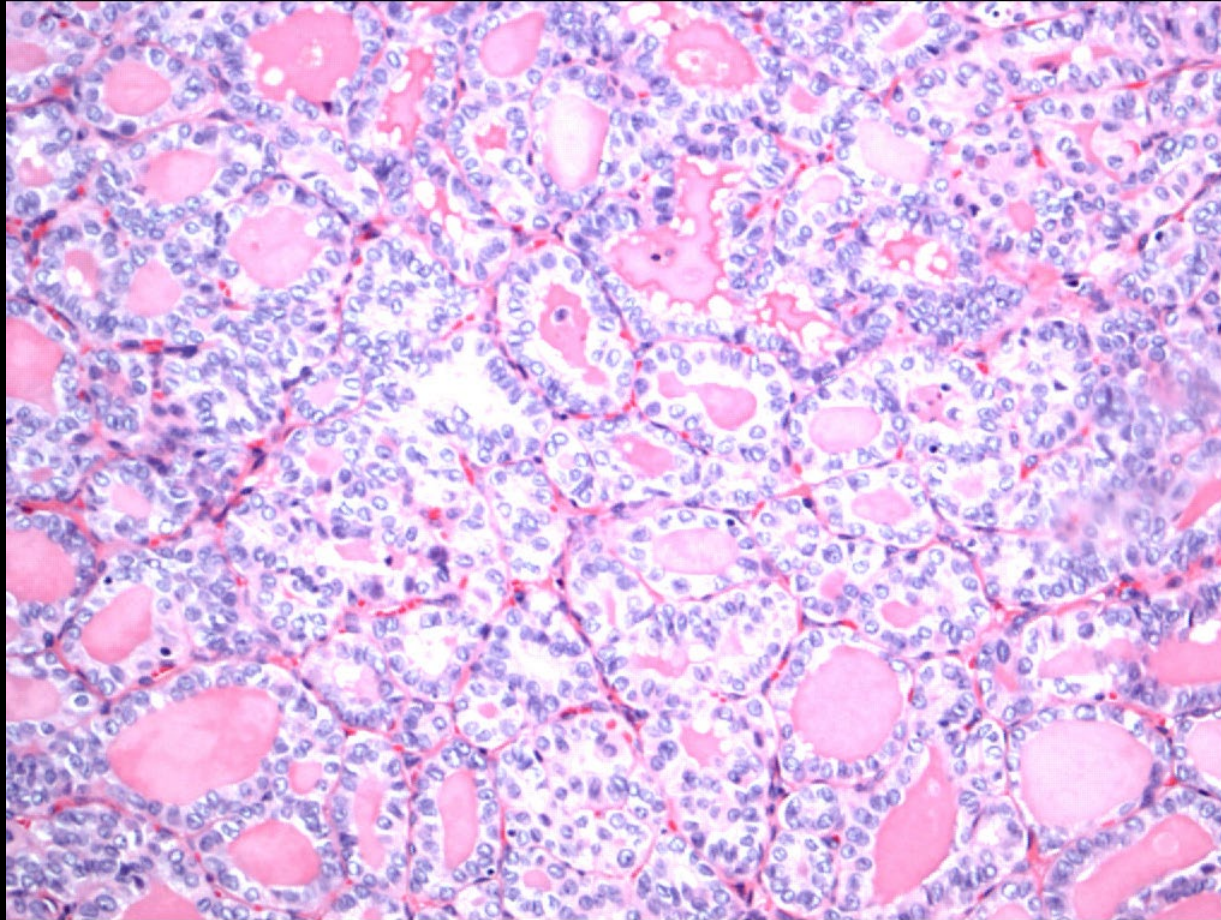


Capsular Invasion



Vascular Invasion

Follicular Variant PTC



Follicular Neoplasm

- **Microfollicular lesions**
- **10 – 20% of FNAs**
- **20 – 30 % prove malignant**
- **Diagnosis of malignancy requires pathology**

Dhani M et al. Am J Radiology 2013; 201: 1335

Risk of Malignancy

Bethesda Classification

Benign

AUS/FLUS

**Follicular
Neoplasm**

**Suspicious
for
Malignancy**

Malignant

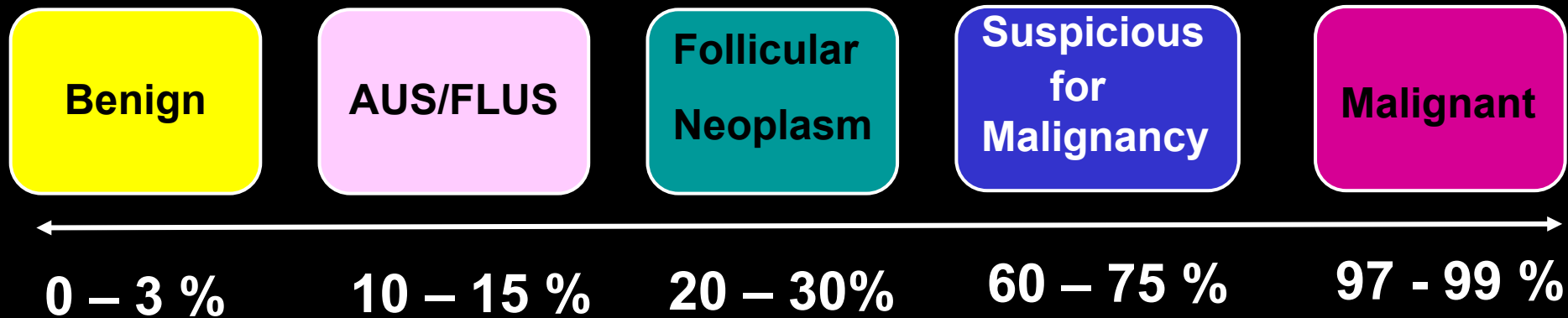
0 – 3 %

10 – 15 %

20 – 30%

60 – 75 %

97 - 99 %



AUS/FLUS

- **AUS: Atypia of Uncertain Significance**
- **FLUS: Follicular Lesion of Uncertain Significance**

Surgery for Indeterminate FNA (AUS/FLUS, FN)

Can we do better ?

Molecular Testing for AUS/FLUS/FN

- **GSC (Genomic Sequencing Classifier (Afirma)) :**
If suspicious: 50 + % risk of malignancy
If benign: < 5 % risk of malignancy
- **Mutational analysis (Thyroseq v3)**
Presence of mutation 50-60% risk for malignancy
Absence of mutation : < 5 % risk of malignancy.

Case History

- Our patient underwent a GSC (molecular) test.
- The result was benign which decreased the risk of malignancy to $< 5\%$.
- She is currently being followed with periodic ultrasounds

ATA Guidelines for FNA: 2015

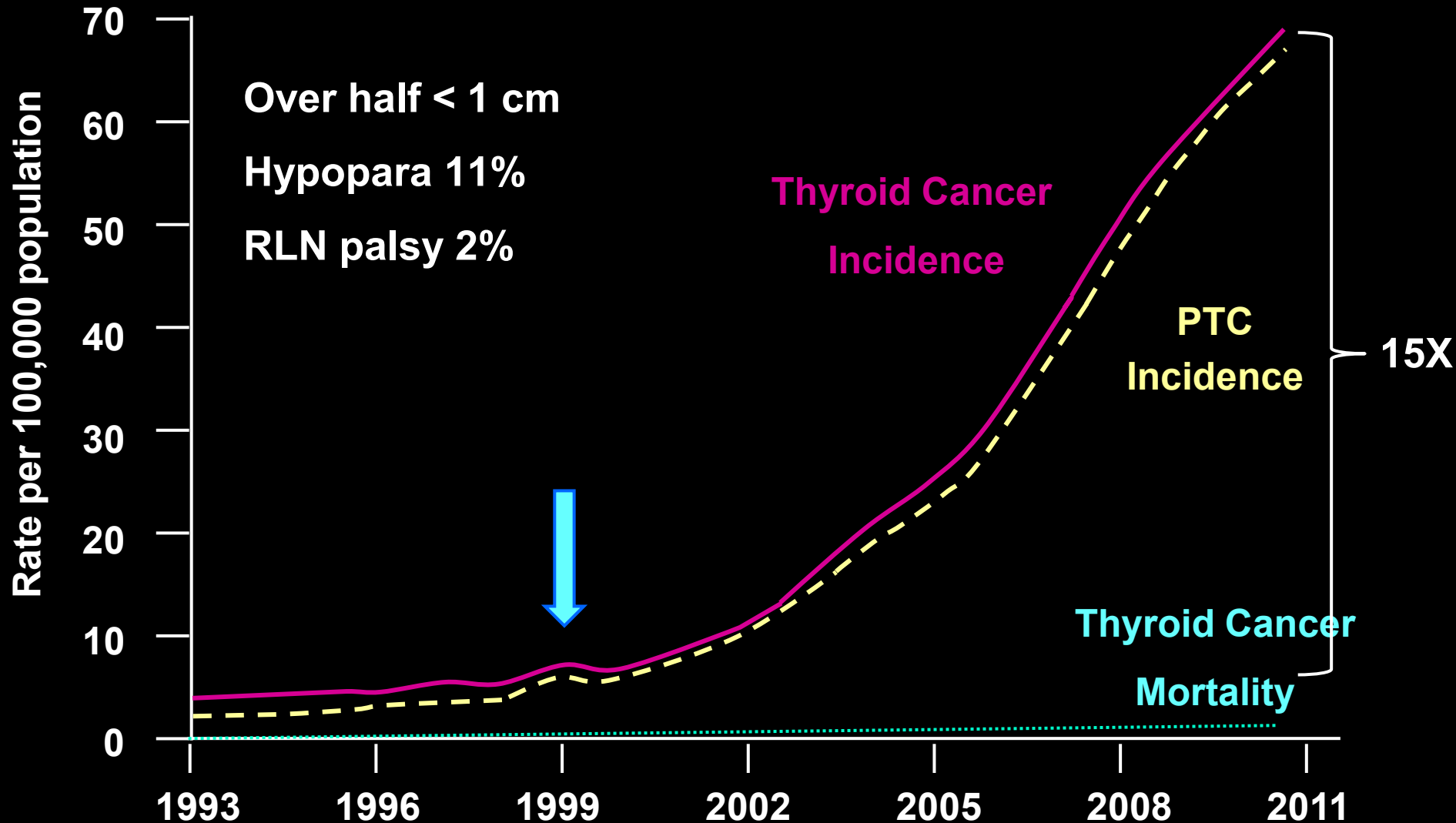
- **Abnormal cervical nodes :** **all**
- **Nodules with high or intermediate suspicion US.** **≥ 1 cm**
- **Nodules with low suspicion US** **≥ 1.5 cm**
- **Nodules with very low suspicion US** **≥ 2.0 cm**
- **Purely cystic nodule:** **none**

Haugen et al Thyroid 2016: 26: 1

**Why not biopsy smaller highly suspicious
thyroid nodules (0 - 5 and 5 – 9 mm) ?**

Thyroid Cancer in Korea- A cautionary tale

Ahn et al NEJM 2014; 371: 1765



Sub-cm thyroid nodules

I have thyroid nodules !

How do you know they are not cancer ?

Why aren't you doing a biopsy?



How do I answer these questions ?

- **10 - 20 % all individuals have small PTMCs**
- **With very rare exceptions, there is no evidence that diagnosing these small cancers has any impact on outcome.**
- **We can biopsy your nodule but it may lead to unnecessary surgery, both in terms of small PTMCs which could be followed, but also indeterminate biopsies which will lead to surgery and possible surgical complications.**

How do I answer these questions ?

- There is a growing trend to offer patients the option of follow- up rather than surgery after the diagnosis of small thyroid cancers, based on the data of Dr. Miyashi.
- I am comfortable following this situation, however, if you are going to spend time worrying about this, then a biopsy can be done.

Sub-cm thyroid nodules

**I am comfortable following
these nodules with you !**



Multinodular Goiter

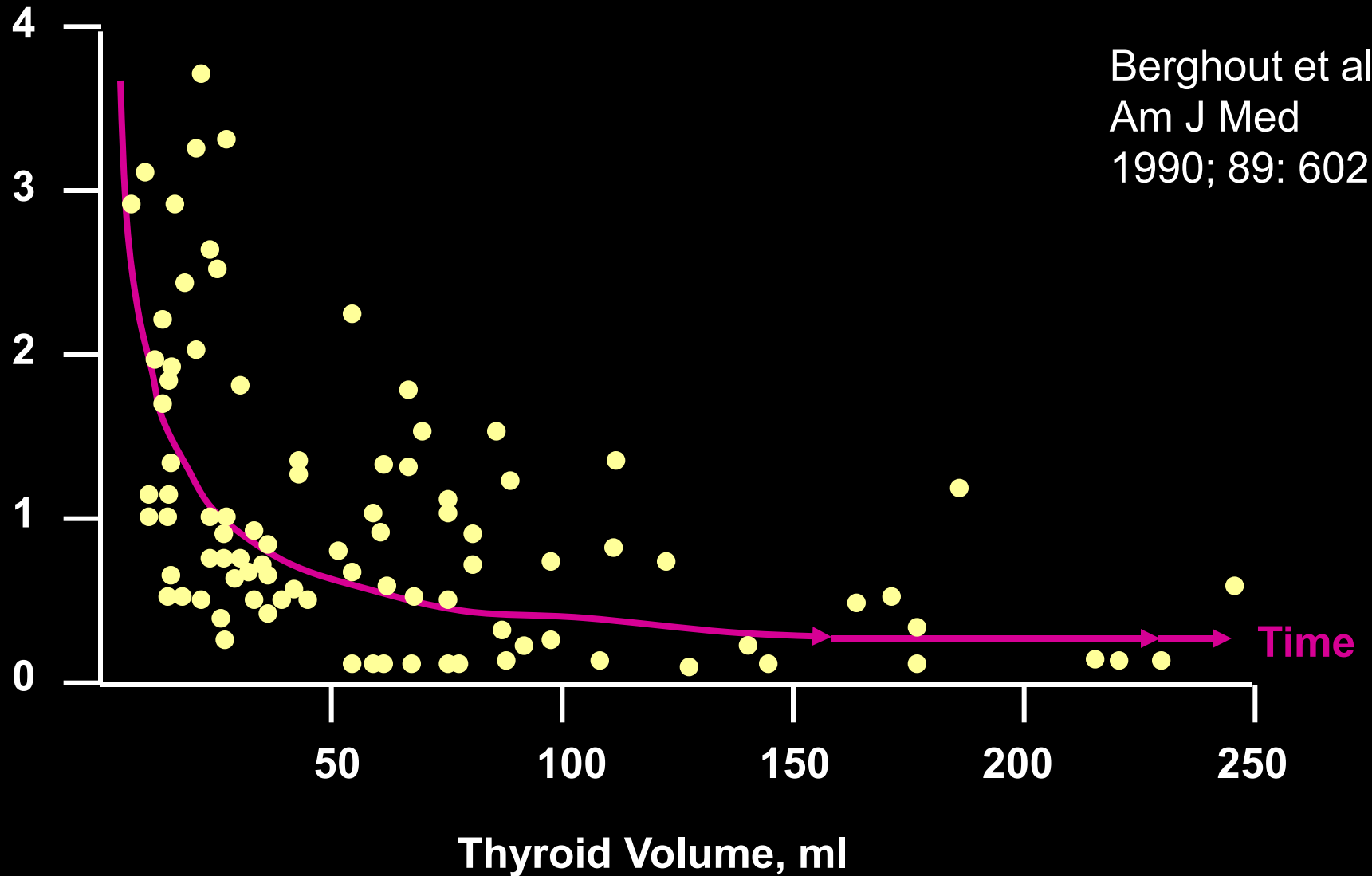
- **Hyperthyroidism**
- **Obstructive symptoms**
- **Intrathoracic goiter**
- **Cosmetic concerns**
- **Malignancy**

Multinodular Goiter

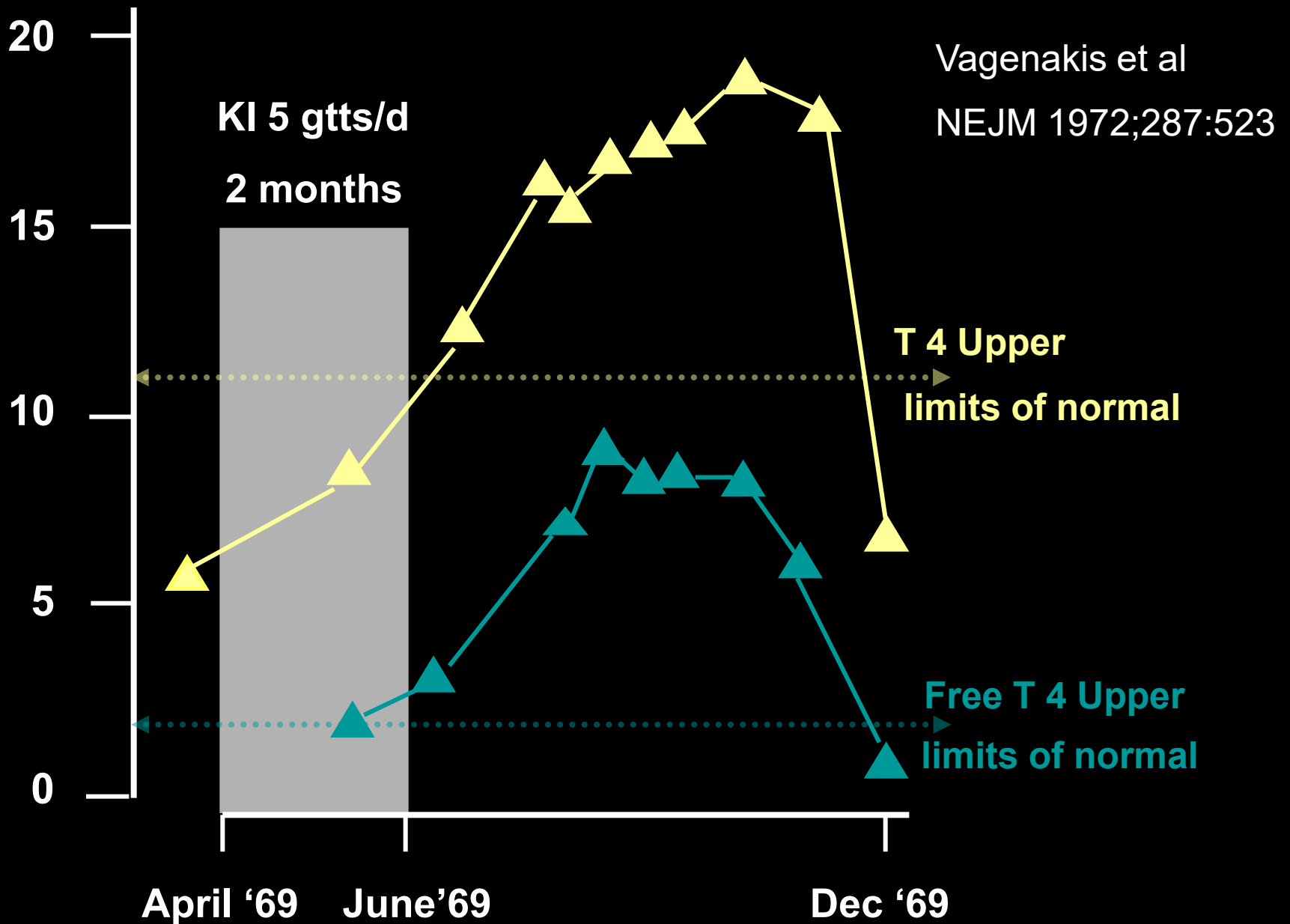
- TSH normal or low
- If TSH high - suspect Hashimoto's Thyroiditis

Multinodular Goiter

TSH mU/L



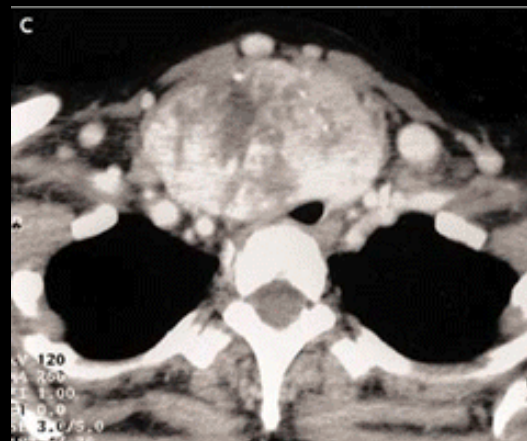
Iodine Induced Hyperthyroidism



Multinodular Goiter

- **Hyperthyroidism**
- **Obstructive symptoms**
- **Intrathoracic goiter**
- **Cosmetic concerns**
- **Malignancy**

Pemberton's Sign

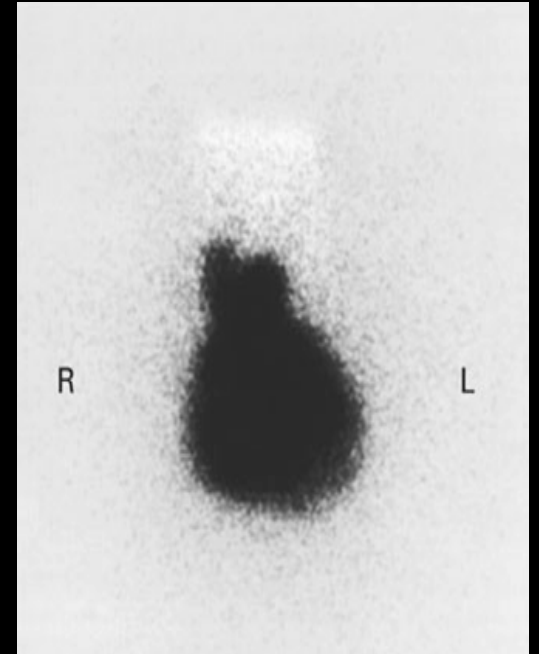


NEJM 2004; 350: 1338

Multinodular Goiter

- **Hyperthyroidism**
- **Obstructive symptoms**
- **Intrathoracic goiter**
- **Cosmetic concerns**
- **Malignancy**

Substernal Goiter



NEJM 1998; 339: 1121

Multinodular Goiter

- **Hyperthyroidism**
- **Obstructive symptoms**
- **Intrathoracic goiter**
- **Cosmetic concerns**
- **Malignancy**

Endemic Goiter



Multinodular Goiter

- **Hyperthyroidism**
- **Obstructive symptoms**
- **Intrathoracic goiter**
- **Cosmetic concerns**
- **Malignancy**

Case History

A 25 year old woman is 4 months post-partum. The pregnancy was uncomplicated. She calls complaining of increased nervousness, palpitations, heat intolerance and difficulty sleeping. She is tired all the time. She is not nursing.

Case History

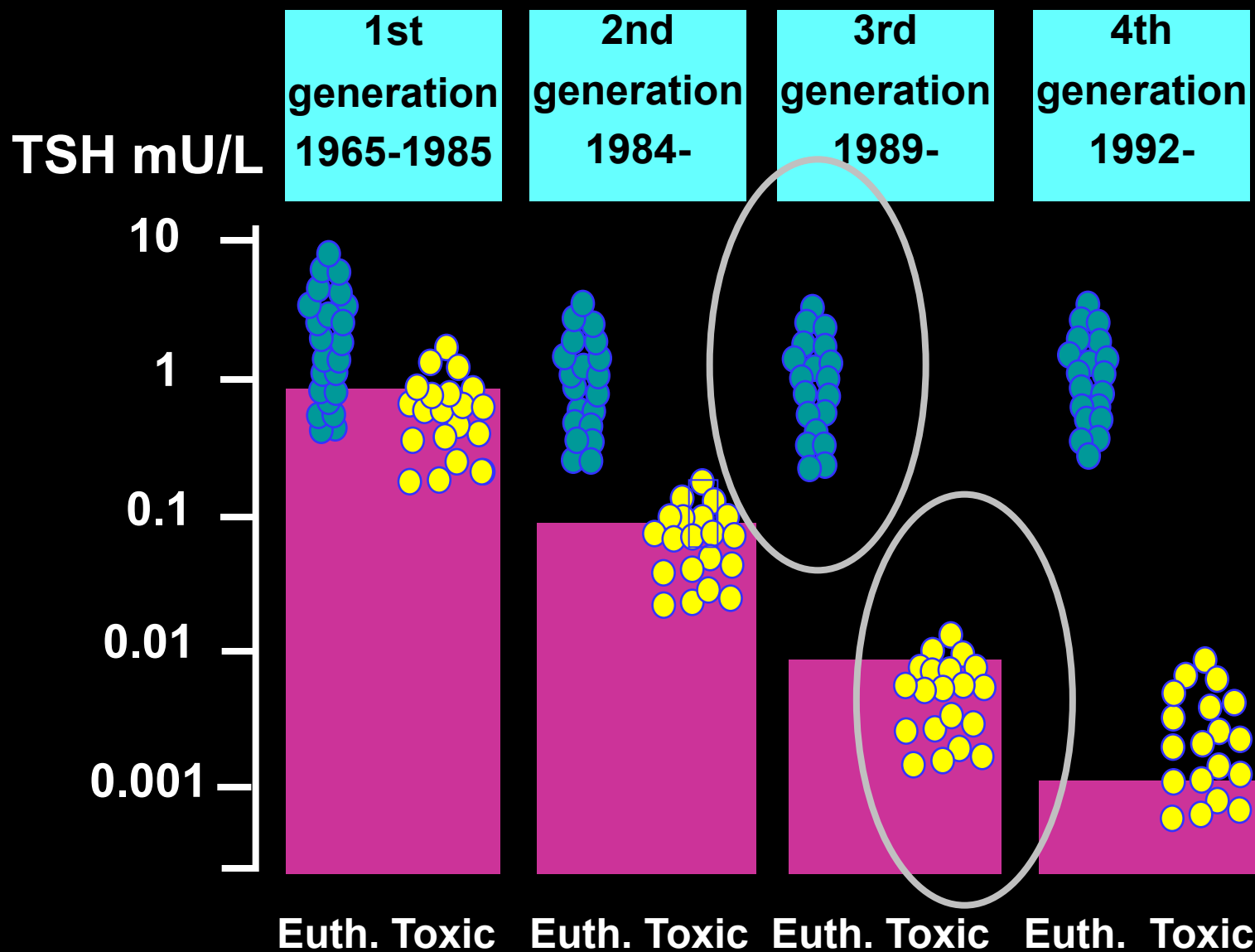
On physical examination she is nervous. Her pulse is regular at 115. She has lid-lag but no exophthalmos. The thyroid gland is one and a half times normal in size (30 grams) without a bruit. A marked tremor is present.

Case History

Laboratory studies

FT4	2.3 ng/dl	(0.8 – 1.8)
TSH	< 0.01 uU/ml	(0.5 - 5.0)

TSH Assays



Questions when hyperthyroidism is diagnosed:

- What is the etiology of the hyperthyroidism ?
- Does the hyperthyroidism need therapy ?

Recent Patient

- High free T4: > 7.8 ng/dL (0.9 – 1.8)
- High T3 > 650 ng/dL (60 - 181)
- TSH < 0.02 (0.4 – 5.0) mU/L

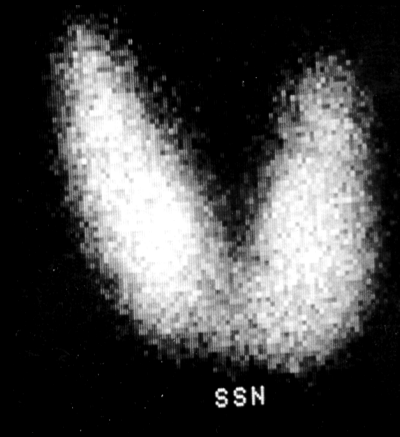
There is nothing wrong with this patient !!

**The patient is on Biotin which (in high doses)
causes all these aberrant blood test results.**

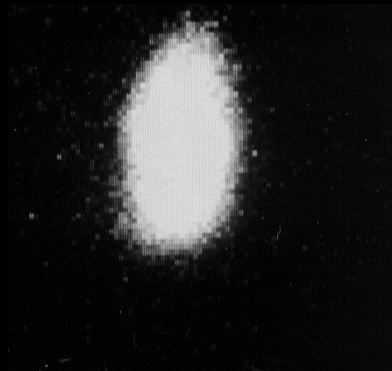
Questions when hyperthyroidism is diagnosed:

- What is the etiology of the hyperthyroidism ?
- Does the hyperthyroidism need therapy ?
- Is the patient on Biotin ?

Hyperthyroidism with normal or high RAI Uptake



Graves' Disease



Hot Nodule



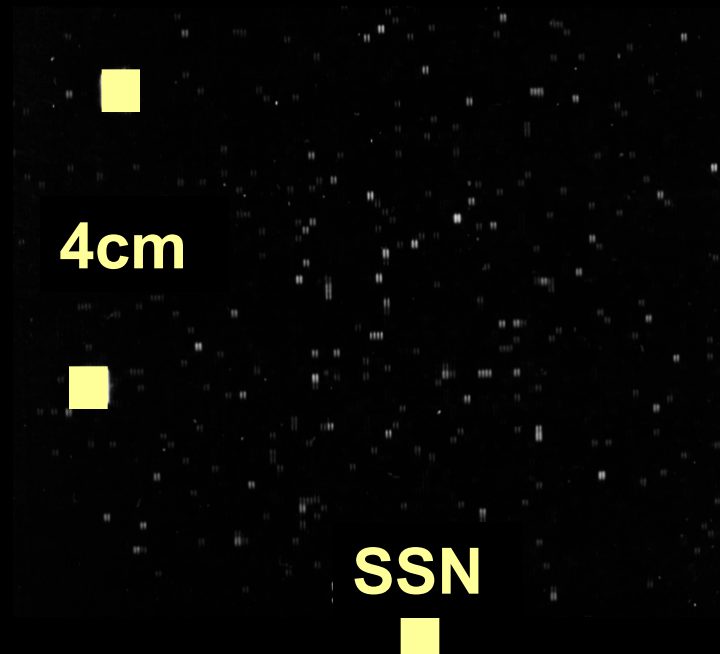
Toxic Nodular Goiter

Alternative is to measure
Thyrotropin Receptor
Antibodies (TSI, TBII)

Hyperthyroidism - 0 or near nil RAI U

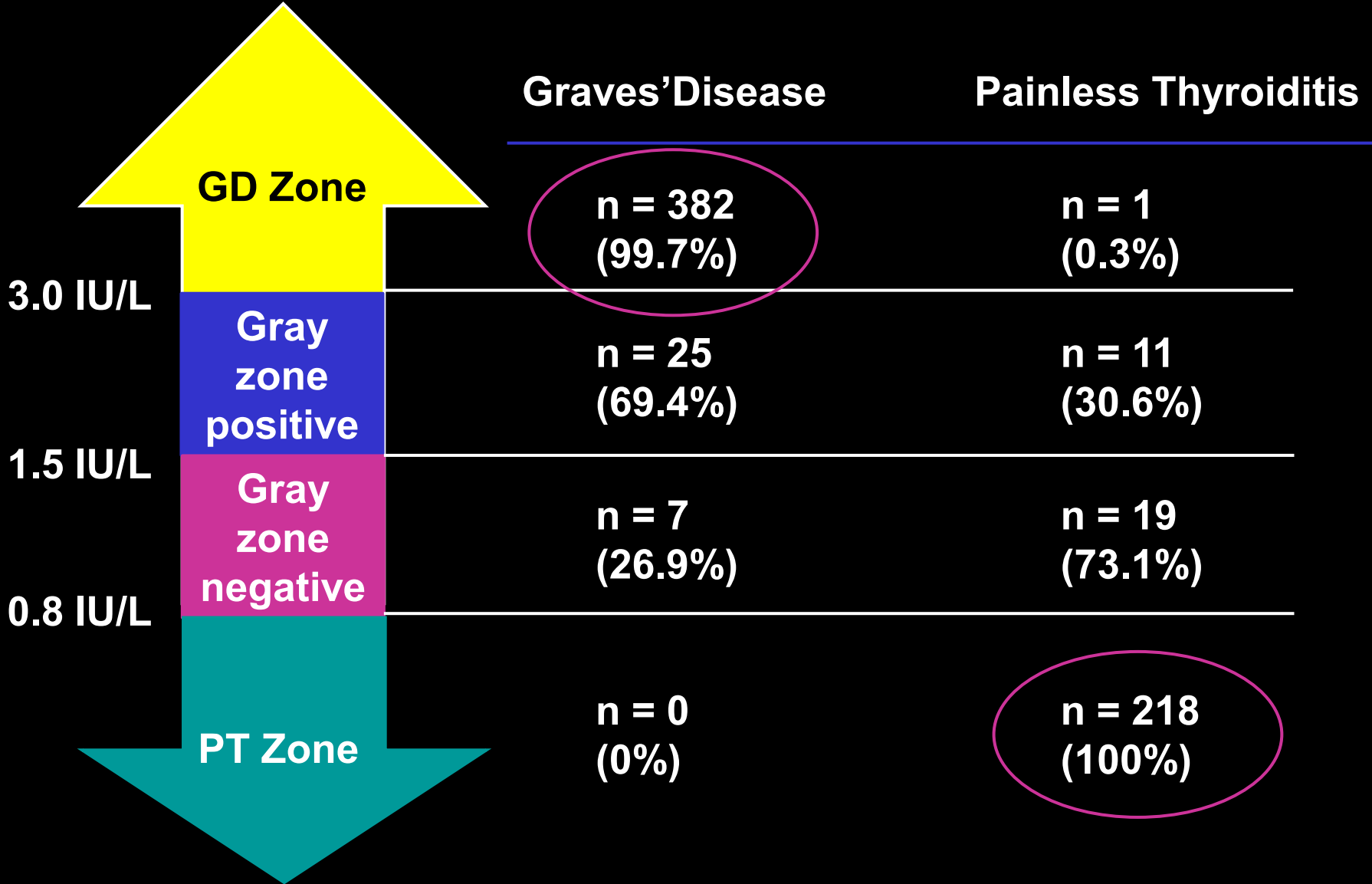
- **Exogenous thyroid hormone**
- **Painless subacute thyroiditis**
- **Painful subacute thyroiditis**
- **Excess iodine**

Our Patient's 123 I Scan

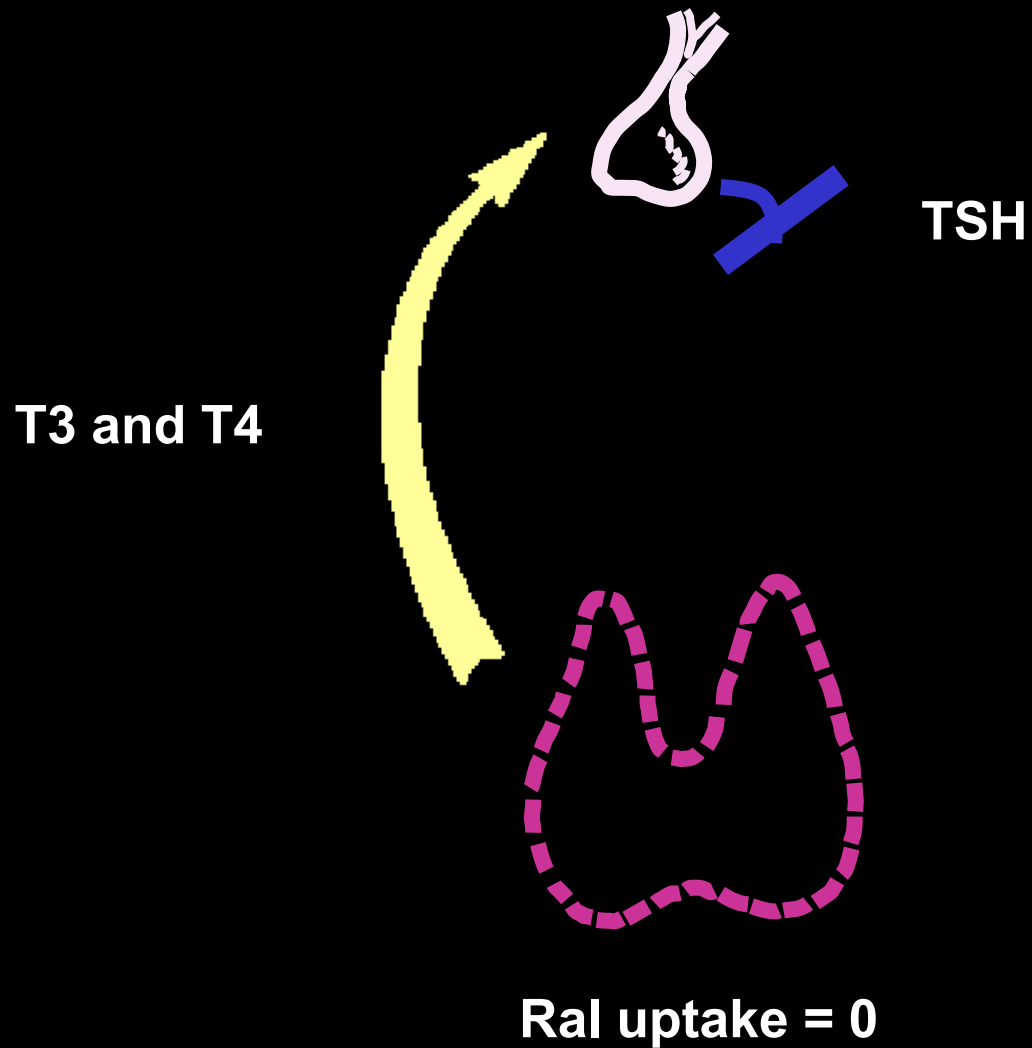


24 hr Ral uptake 0.04 %

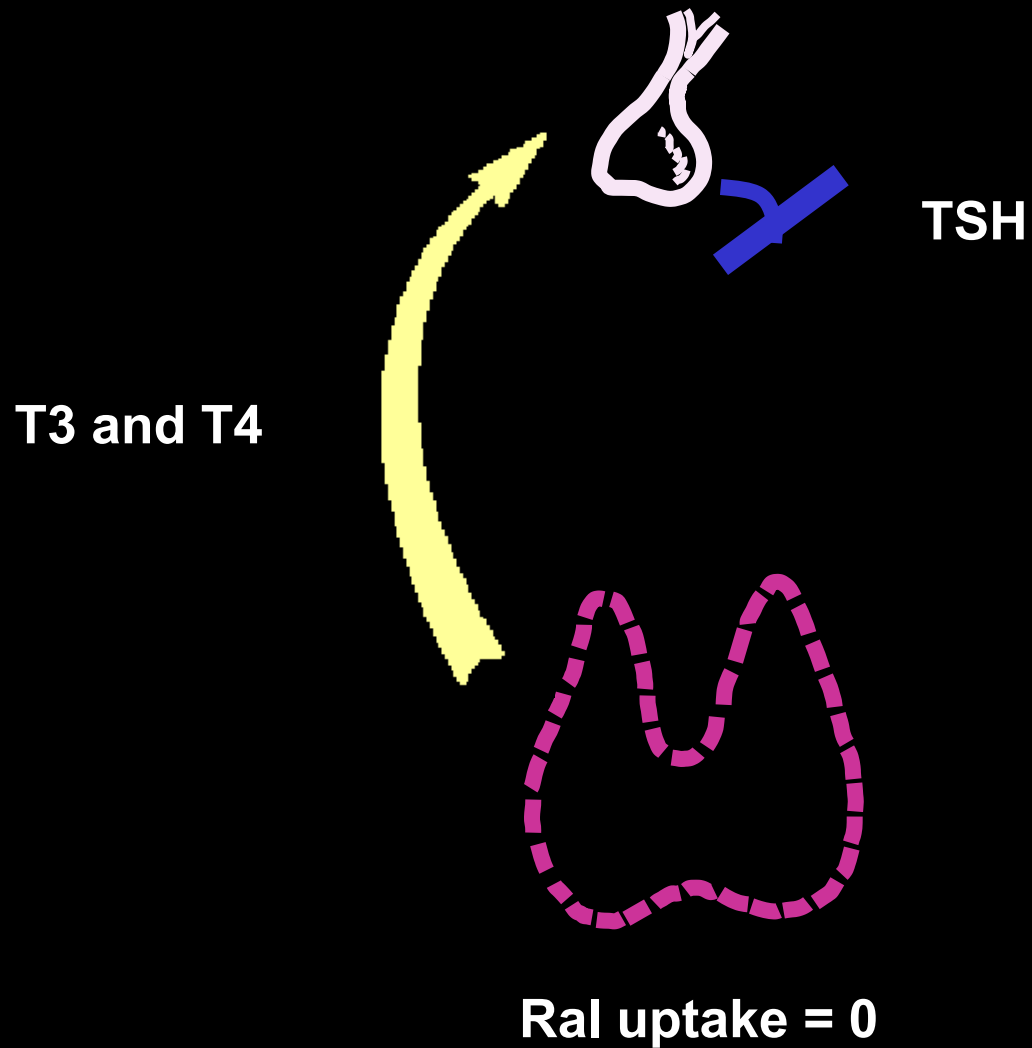
Elecsys TRAb



Painless Subacute Thyroiditis

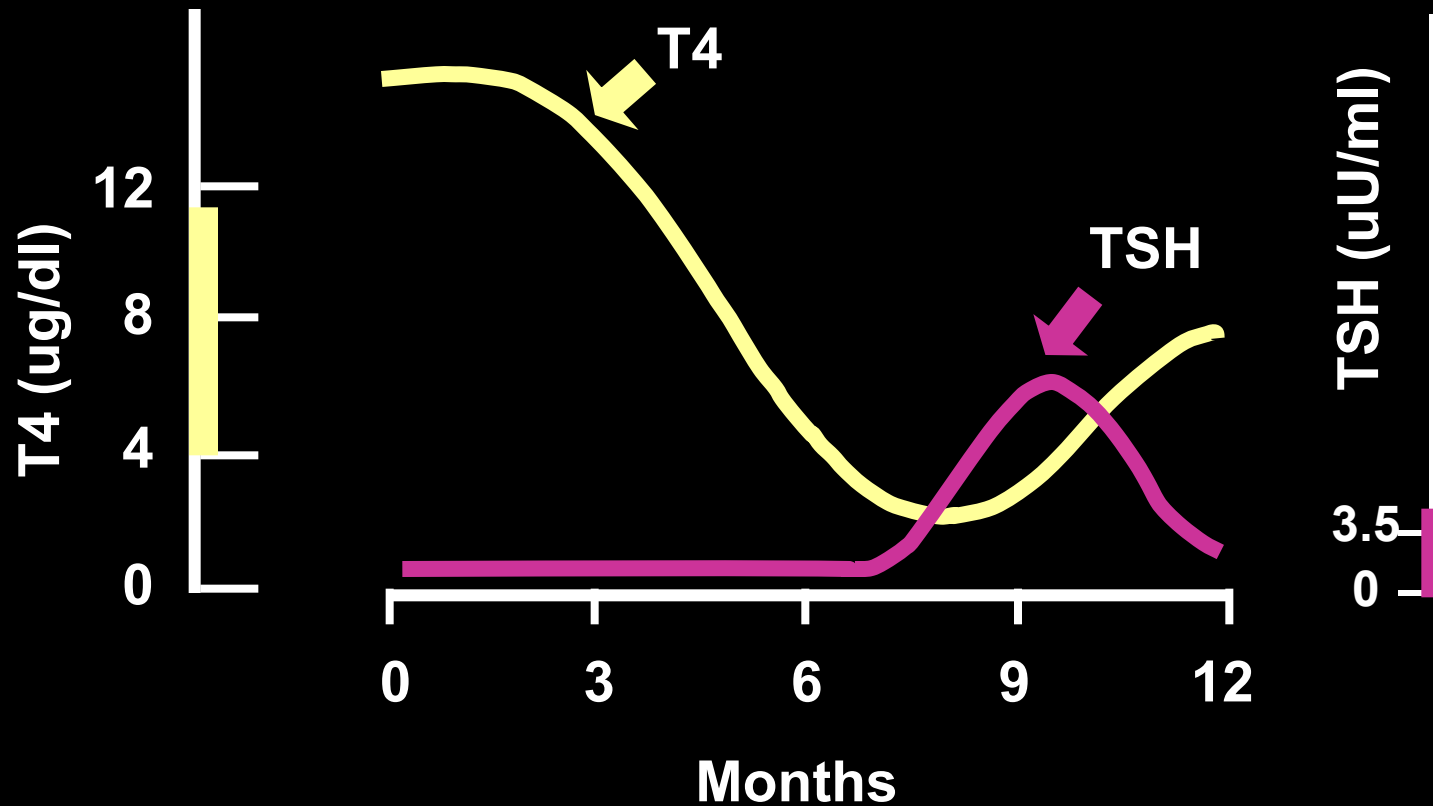


Post-Partum Thyroiditis



Subacute Thyroiditis

Hyperthyroid Hypothyroid Recovery



Questions when hyperthyroidism is diagnosed:

- What is the etiology of the hyperthyroidism ?

Post-Partum Thyroiditis

- Does the hyperthyroidism need therapy ?

No ! It will spontaneously abate.

- Is the patient on Biotin ?

No !

Prevalence of Post-Partum Thyroiditis

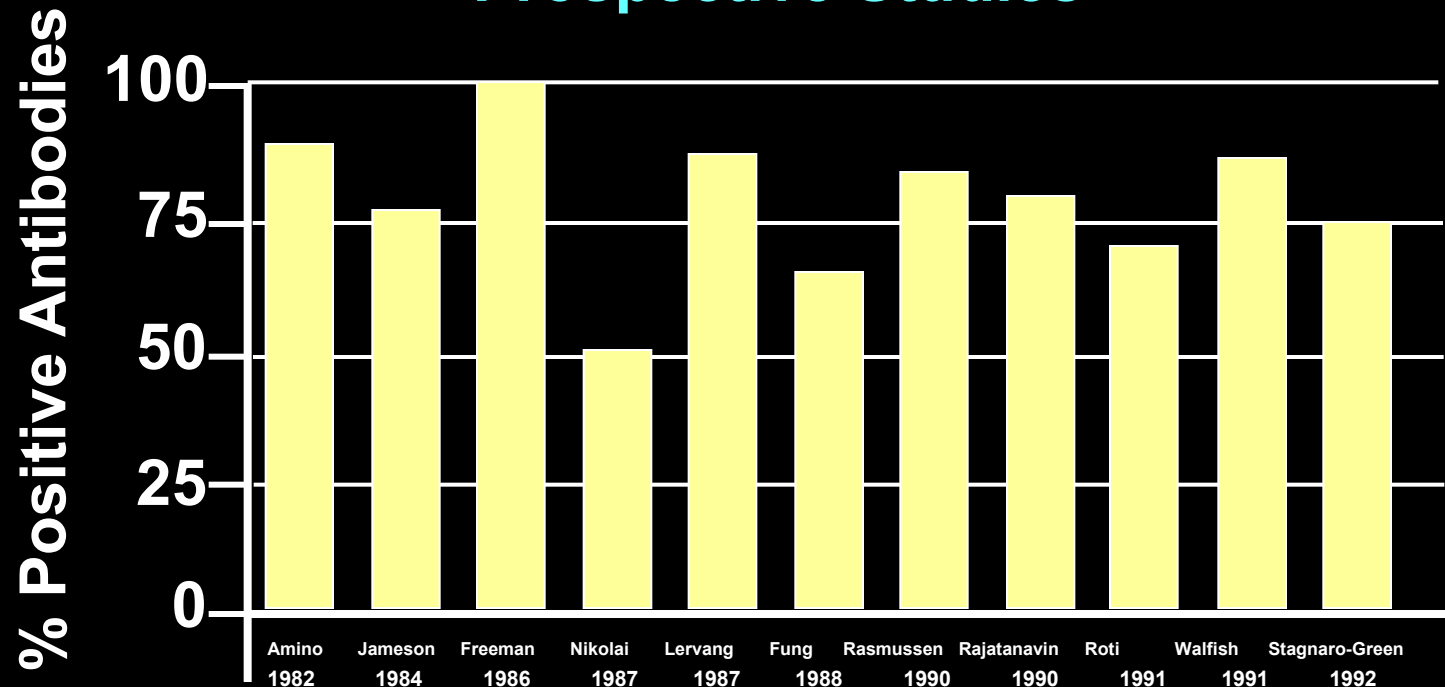
Name	Year	Country	FU	Number	Preg Screen	PPT
Amino	1982	Japan	6	507	N	5.5 %
Jansson	1984	Sweden	5	460	N	6.5 %
Freeman	1986	USA	3	212	N	1.9 %
Nikolai	1987	USA	3	238	N	6.7 %
Lervang	1987	Denmark	12	591	N	3.9 %
Fung	1988	UK	12	901	Y	16.7 %
Rasmussen	1990	Denmark	12	736	N	3.3 %
Rajatanavin	1990	Thailand	12	812	N	1.1 %
Roti	1991	Italy	12	372	N	4.8 %
Walfish	1992	Canada	12	1376	N	6.0 %
Stagnaro-Green	1992	USA	6	545	Y	8.8 %

Post-Partum Thyroiditis - Antibodies

Stagnaro-Green A.

Thyroid Today 16: 1 : 1993

Prospective Studies

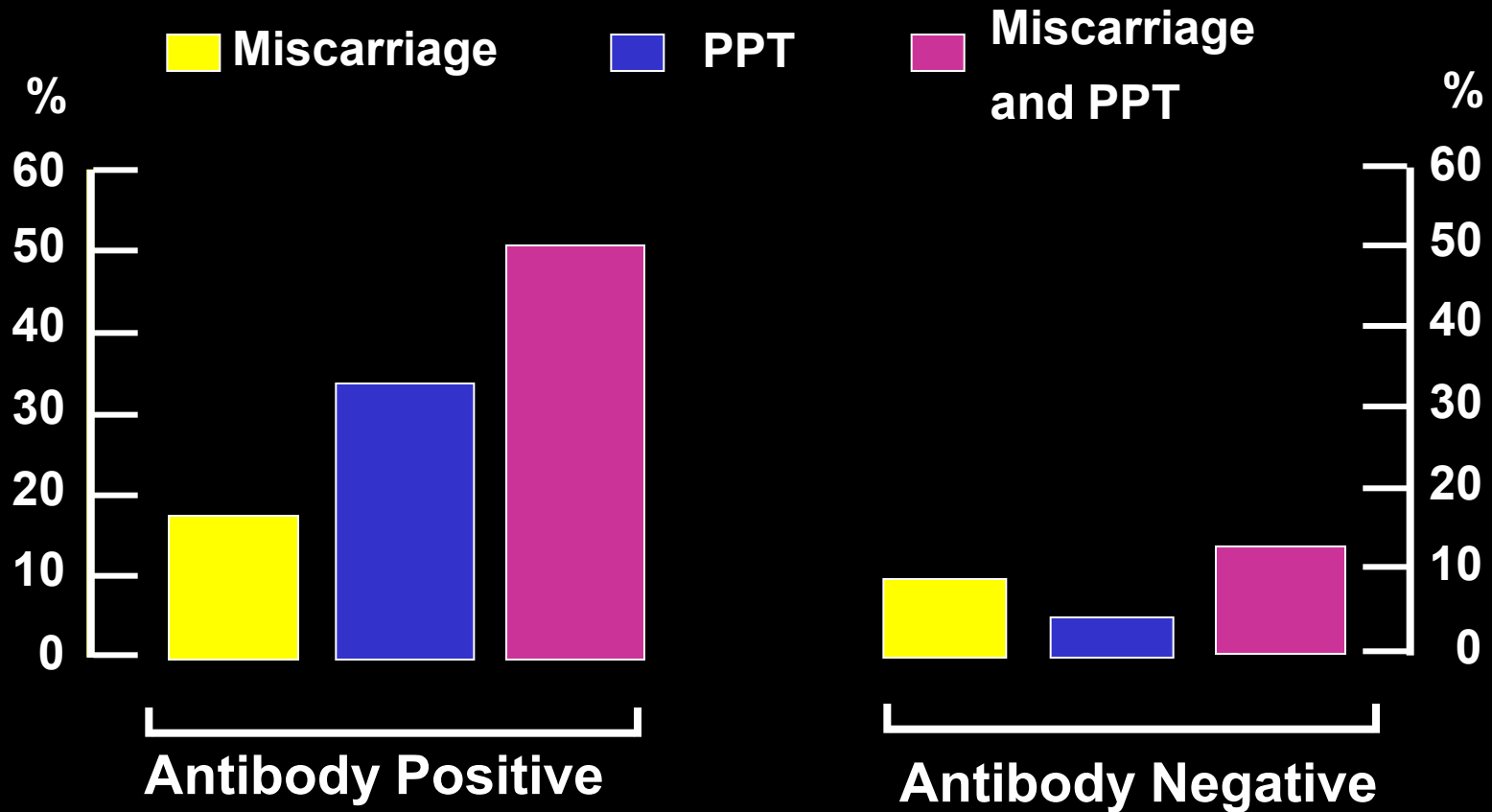


In a euthyroid patient, is there any benefit to knowing that TPO antibodies are positive ?

TPO Antibodies

Stagnaro-Green A.

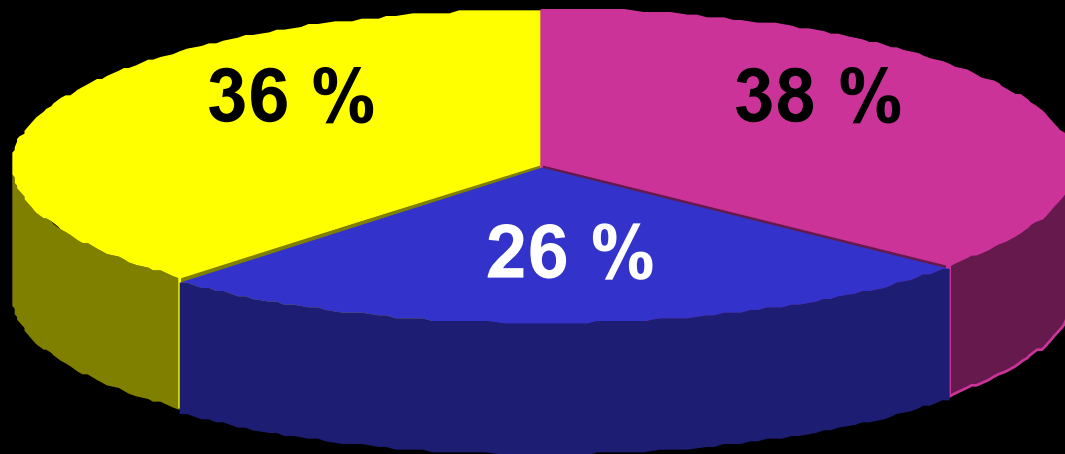
Thyroid Today 16: 1 : 1993



Post-Partum Thyroiditis

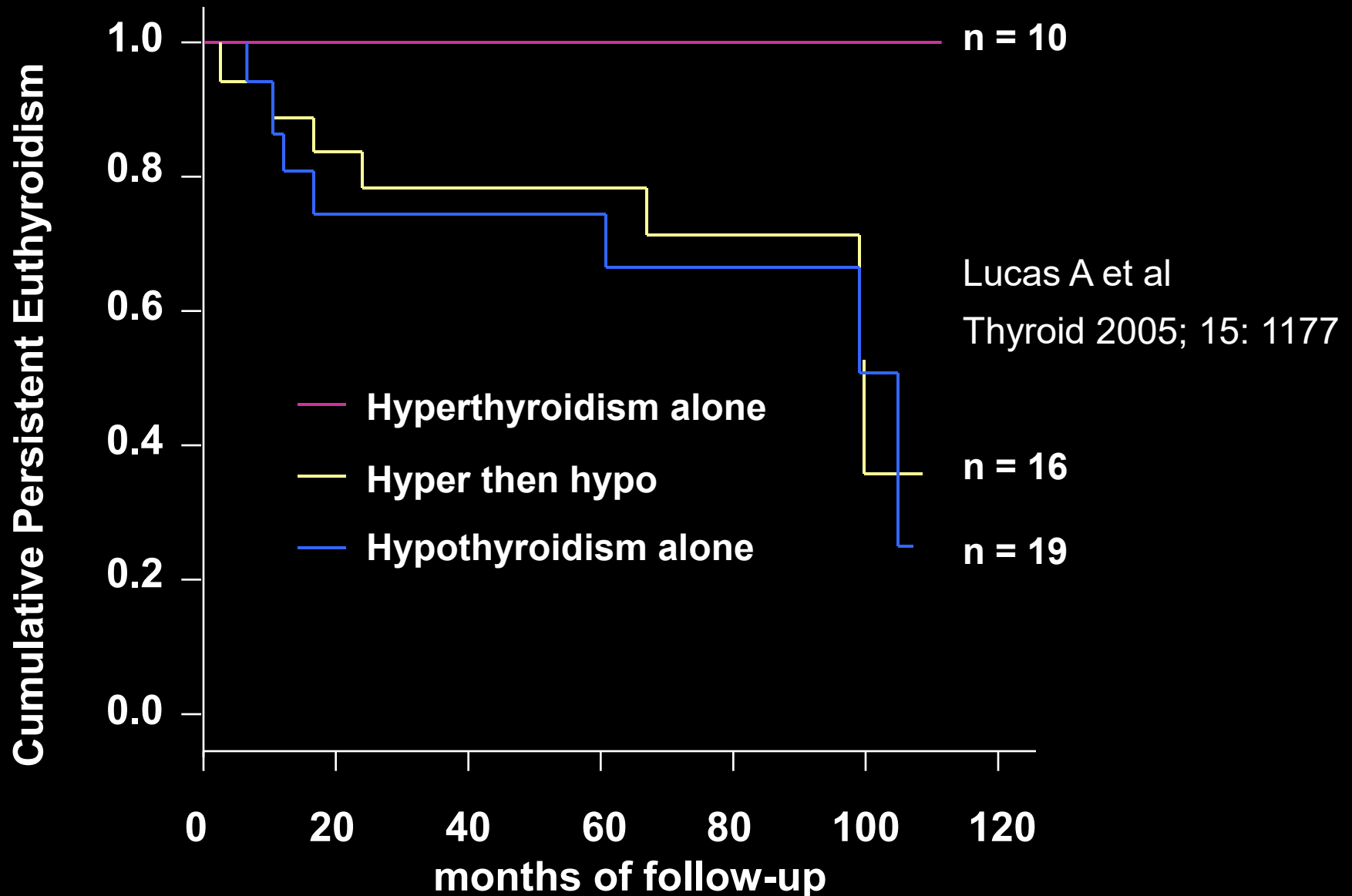
**Hypothyroidism
Alone**

**Hyperthyroidism
Alone**



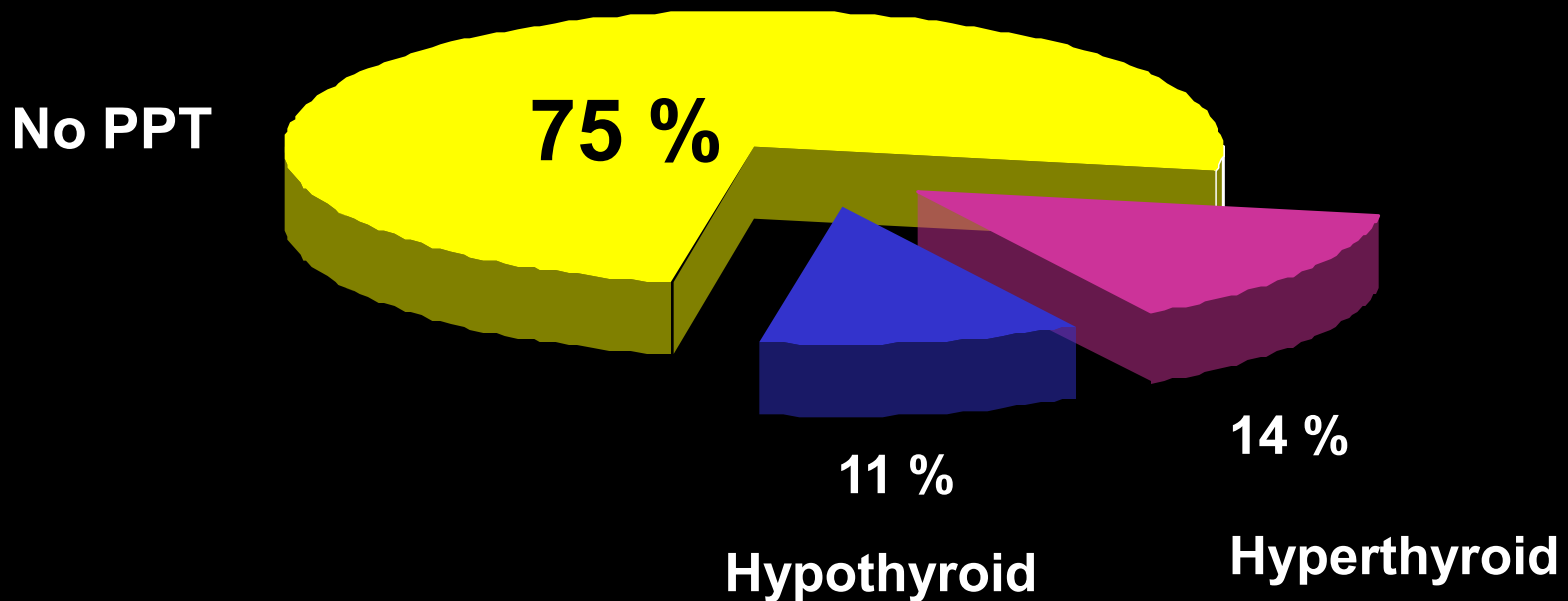
**Hyperthyroidism
then Hypothyroidism**

Post-Partum Thyroiditis - Hypothyroidism



Post-Partum Thyroiditis

Type I Diabetes



Alvarez-Marfany
JCEM 1994; 79:10

Post-Partum Thyroiditis and Psychiatric Morbidity

- 25 weeks post-partum
- Depression : 9.4 %
- Anxiety disorder : 1.4 %
- Agoraphobia : 3.1 %
- No difference c.w. controls

Harris B et al. Randomised trial of thyroxine to
prevent postnatal depression in thyroid-antibody
positive women. **Brit J Psychiatr.** 2002; 180: 327

TPO Ab

- Increased risk of post-partum depression
- L-T4 100 mcg given 6 weeks to 6 months post-partum.
- **Post-partum depression risk is not lessened by levothyroxine**

Common Thyroid Problems

Think Thyroid !

