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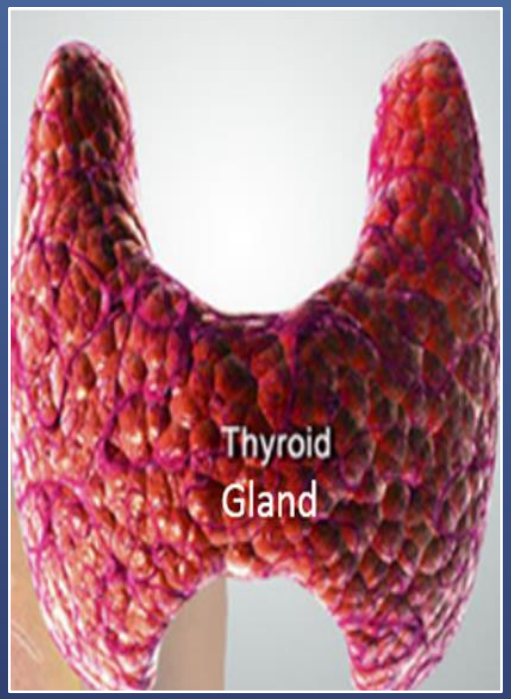

Thyroid Gland Disorders

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Thyroid Gland Disorders

- Simple goiter: IDD
- Autoimmune thyroid disease: Graves, Hashimoto
- Thyroid nodules: Solitary, Multinodular
- Thyroiditis: Silent, Sub-acute, Infectious, Postpartum
- Thyroid cancer: Primary, Metastatic

Hypothyroidism

Hypothyroidism:
Is a syndrome resulting from a deficiency of thyroid hormones, may be either subclinical or overt.

Subclinical hypothyroidism :

TSH above the upper reference limit with normal free thyroxine

Overt hypothyroidism :

TSH above 10 mIU/L, with a subnormal free thyroxine

Prevalence

NHANES III (U.S. population > age12 between 1988 and 1994):
Subclinical disease, **4.3%** and Overt disease **0.3%**.

The Colorado thyroid disease prevalence survey:
Subclinical disease , **8.5%** and Overt disease **0.4%**.

In the Framingham study,
5.9% of women and **2.3%** of men over the age of 60 years had TSH values over 10 mIU/L, **39%** of whom had subnormal T_4 levels

In the British Whickham survey:
9.3% of women and **1.2%** of men had serum TSH values over 10 mIU/L

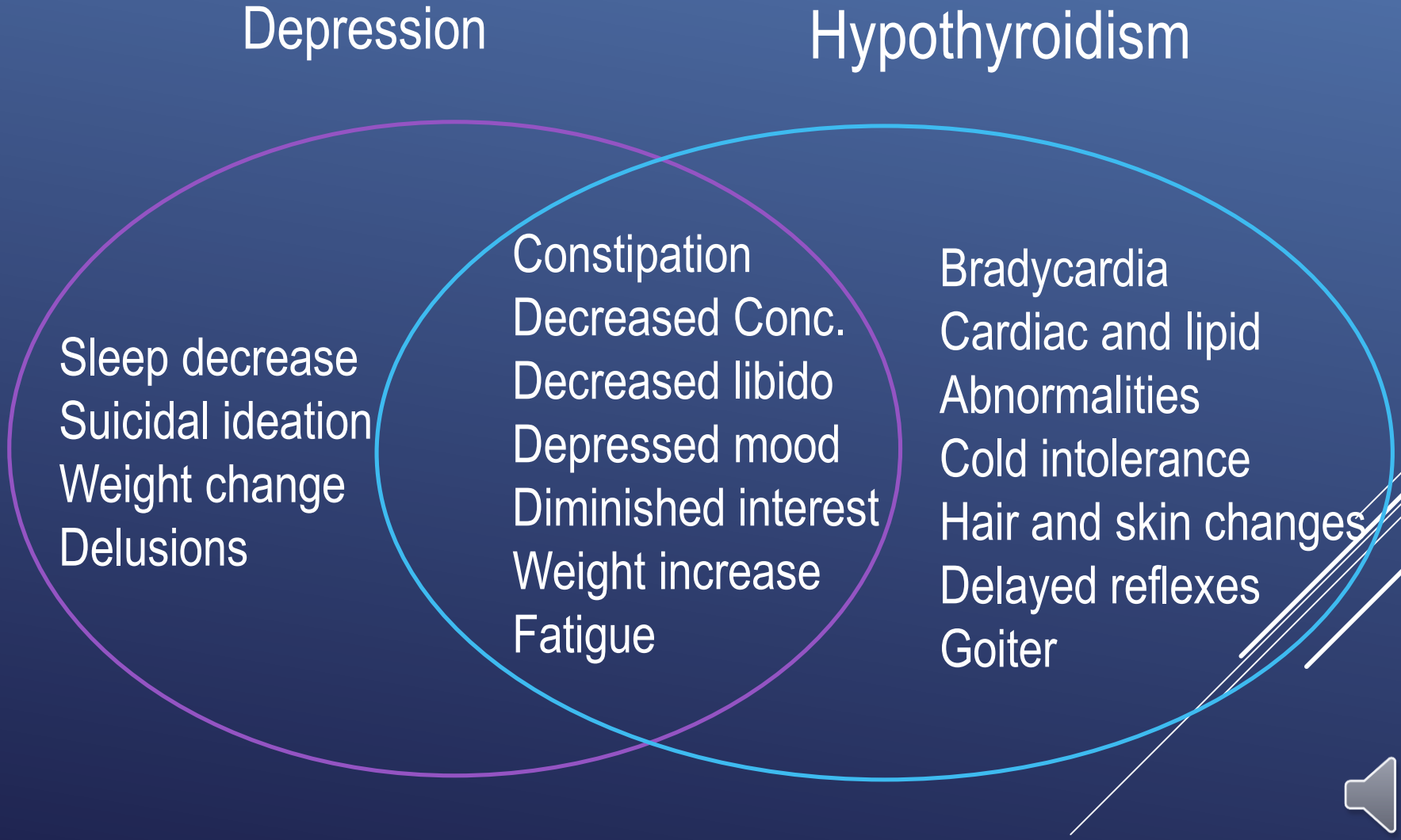
Hypothyroidism

- ***Primary (95%):***
  - Congenital: agenesis, hypogenesis, ectopic
  - Autoimmune thyroiditis
  - Thyroidectomy
  - Post ^{131}I therapy
  - Sever iodine deficiency
  - Other goitrogens
  - Drugs: lithium, anti-thyroid drugs.
- ***Secondary:*** hypopituitarism
- ***Tertiary:*** hypothalamic dysfunction.
- ***Resistance to thyroid hormone action***

Hypothyroidism: Clinical Presentation

Symptoms	Signs
Weakness	Cold & dry skin
Lethargy	Coars skin
Sensation of cold	Slow speech
Decreased sweating	Edema of eyelids
Memory impairment	Thick tongue
Constipation	Edema of face
Gain in weight	Pallor of skin
Dyspnea	Loss of hair
Anorexia	Peripheral edema
Menorrhagia	Hoarsness
Precordial pain	

Hypothyroidism and Depression



Thyroid Failure - Organ Systems

Cardiovascular

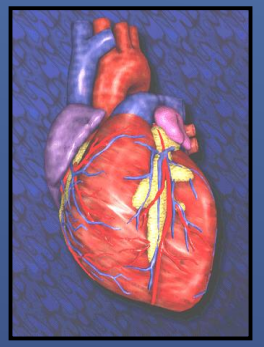
- Decreased ventricular contractility
- Increased diastolic blood pressure
- Decreased heart rate

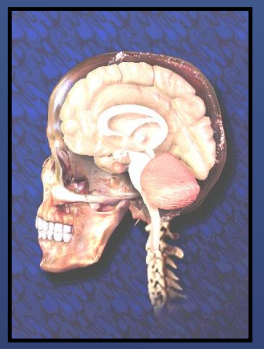
Central Nervous

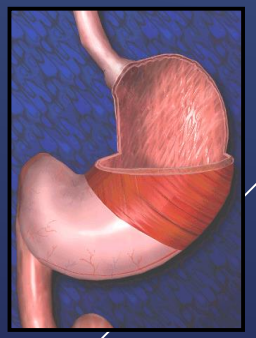
- Decreased concentration
- General lack of interest
- Depression

Gastro-intestinal

- Decreased GI motility
- Constipation



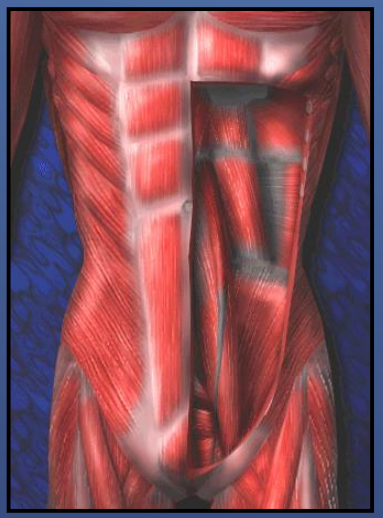




Thyroid Failure - Organ Systems

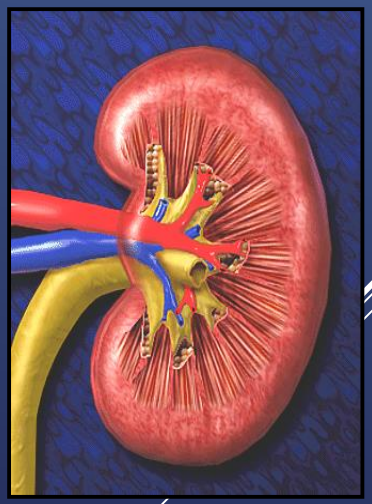
Musculoskeletal

- Muscle stiffness, cramps, pain, weakness, myalgia
- Slow muscle-stretch reflexes, muscle enlargement, atrophy



Renal

- Fluid retention and oedema
- Decreased glomerular filtration



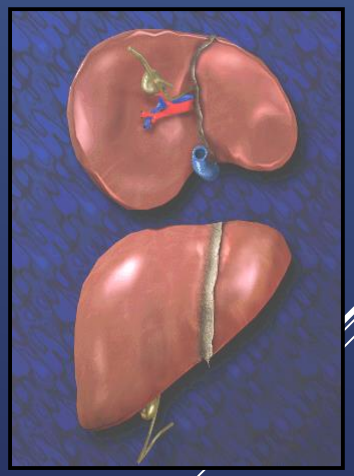
Thyroid Failure - Organ Systems

Reproductive

- Arrest of pubertal development
- Reduced growth velocity
- Menorrhagia, Amenorrhea
- Anovulation, Infertility

Hepatic

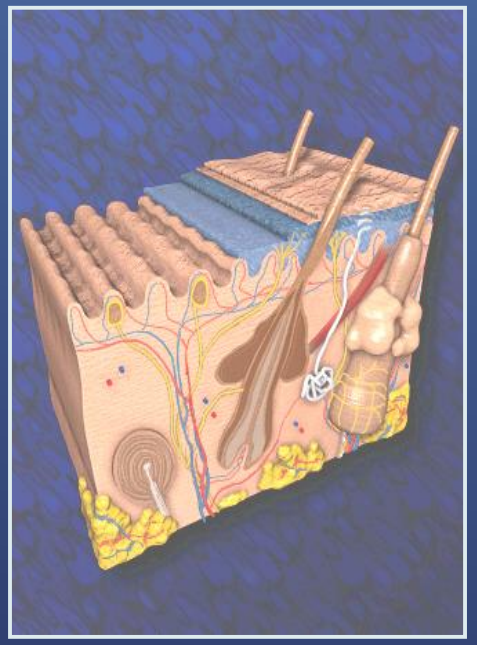
- Increased LDL / TC
- Elevated LDL + triglycerides



Thyroid Failure - Organ Systems

Skin and Hair

- Thickening and dryness of skin
- Dry, coarse hair, Alopecia
- Loss of scalp hair and / or lateral eyebrow hair



Edema of eyelids

Edema of face
Before and after treatment

Hypothyroidism: Hair loss

Hypothyroidism: Pretibial myxedema

Before treatment

After treatment

Hypothyroidism

A 65-year-old woman who had not received medical care for 30 years.

presented with progressively worsening fatigue and confusion.

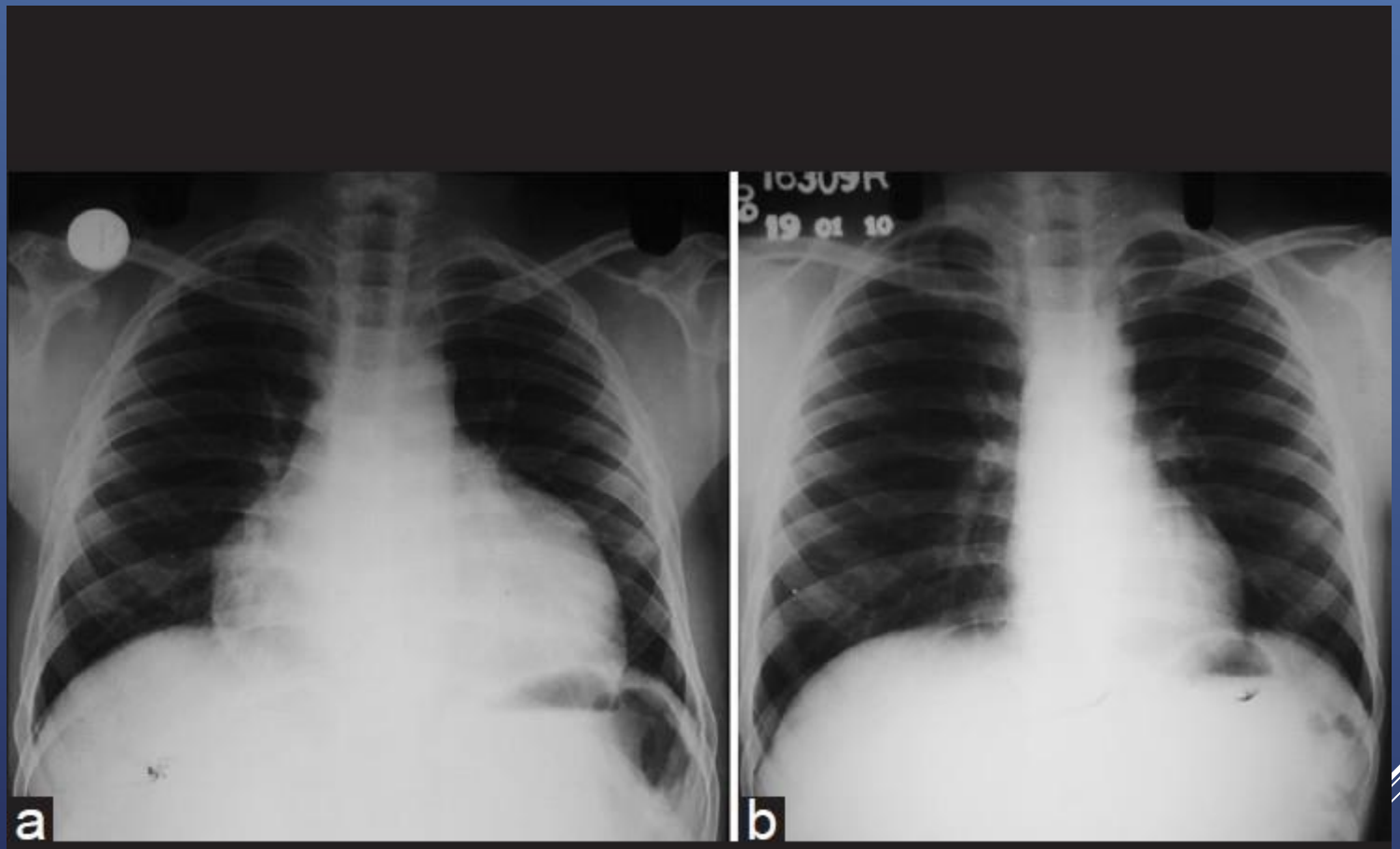
She had edema of the face, coarse skin, thin hair, brittle nails, and non pitting edema of the lower extremities.

Hypothyroidism: Ptosis

Ptosis in patient with hypothyroidism before treatment

Complete recovery on day 7 after treatment with LT4

Hypothyroidism



Pericardial effusion: Before and 8 months after treatment

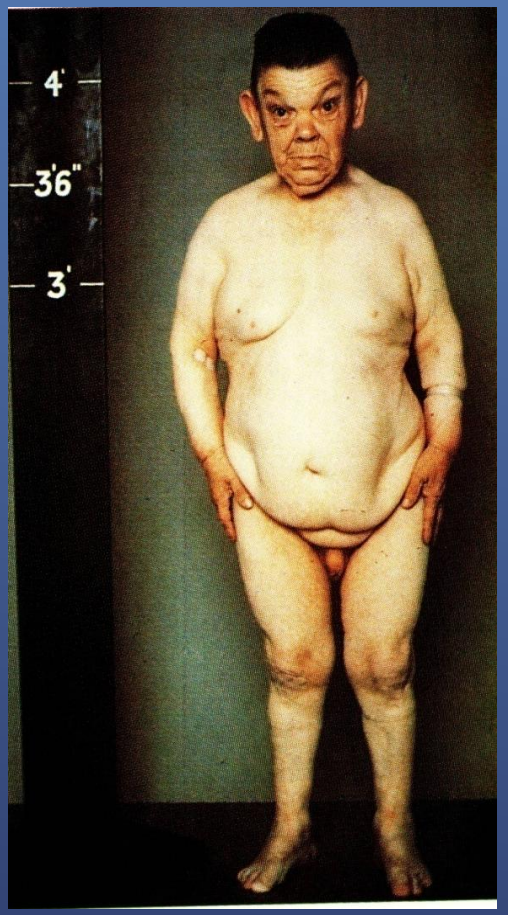
Xanthomata

Tuberous Xanthoma

Xanthelasma

Hypothyroidism

Cretinism



Clinical presentation

Newborn infants:

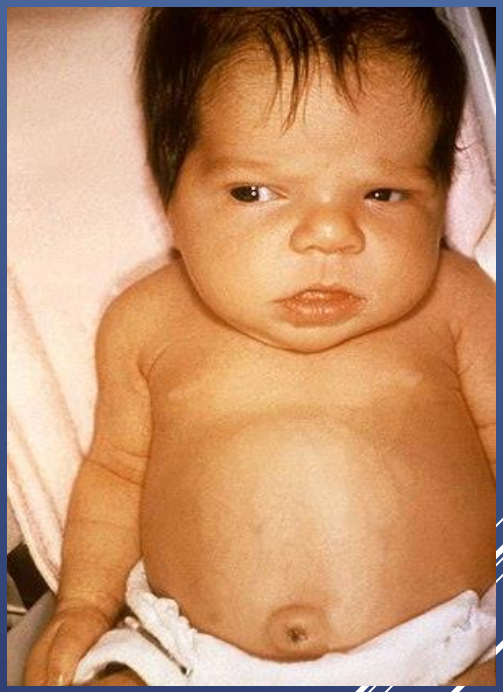
(Congenital hypothyroidism = 1 /3500 – 4000 neonates)

- Respiratory difficulty
- Cyanosis
- Jaundice
- Poor feeding
- Hoarse cry
- Umbilical hernia
- Marked retardation of bone maturation

Children:

- Growth retardation
- Mental retardation

Congenital Hypothyroidism

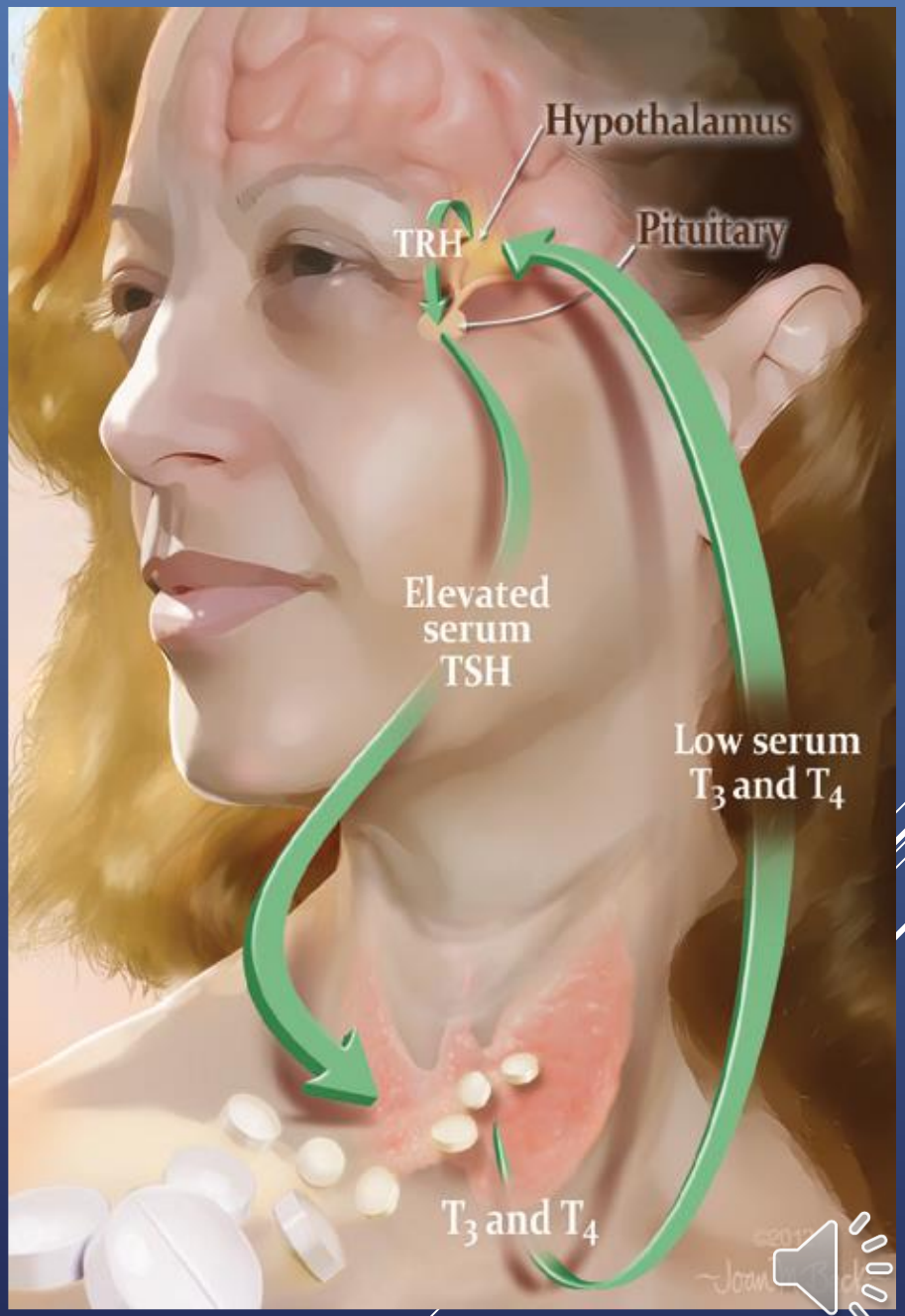


3 month old child with undetected congenital hypothyroidism

- Apathic facies
- Dry and coarse skin
- Puffy eyelids
- Depressed nasal bridge

Absence of distal femoral epiphysis in untreated congenital hypothyroidism

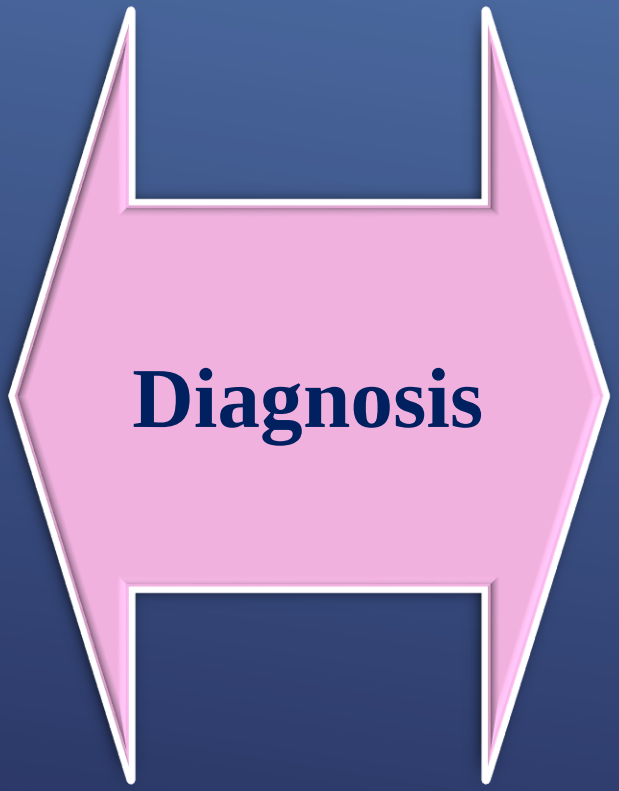
Diagnosis of Hypothyroidism



Confirmation of hypothyroidism

Free T4

TSH

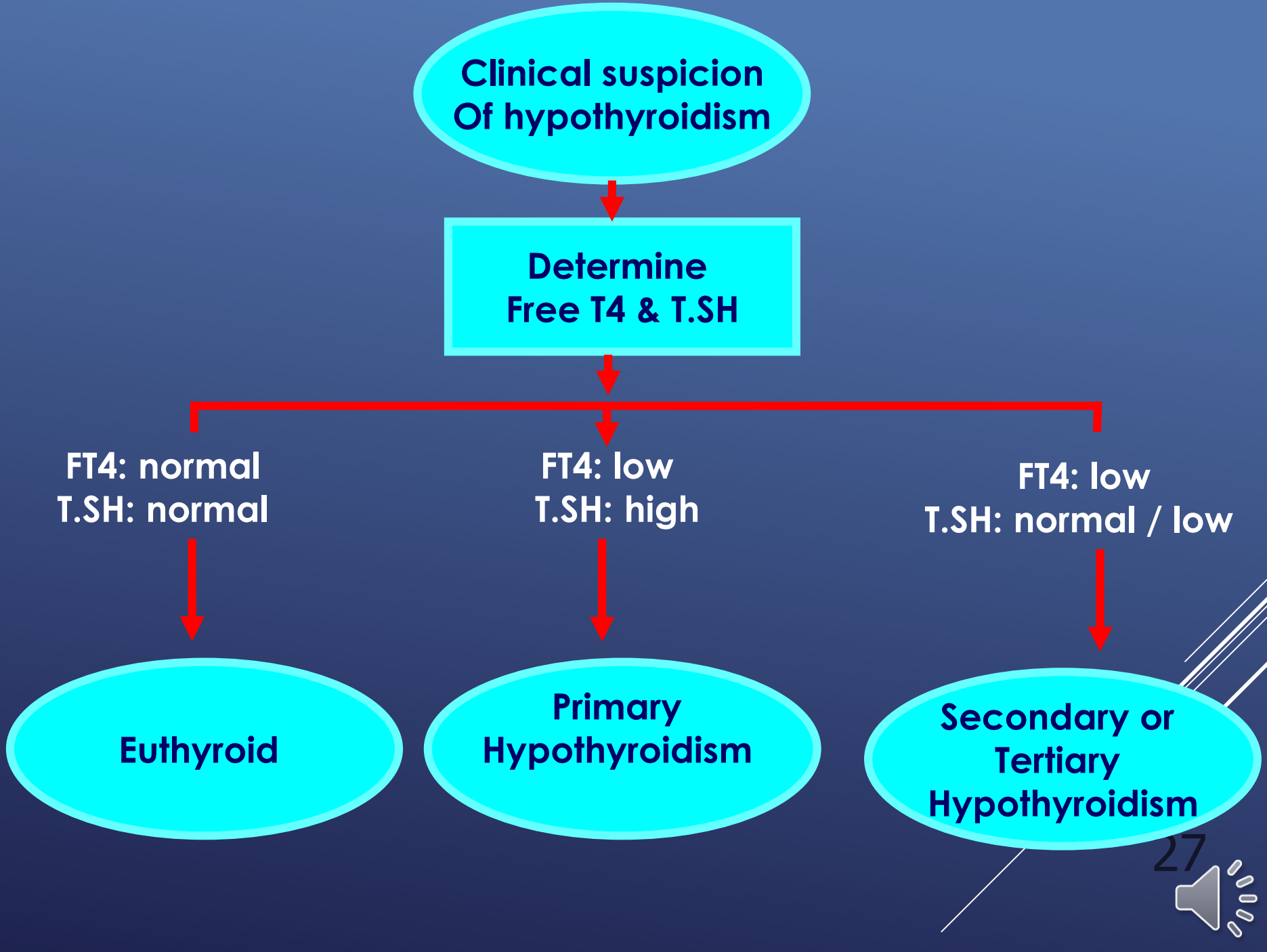


Definition of etiology

TPO-Ab

Thyroid US

Thyroid scan


Clinical suspicion
Of hypothyroidism
Determine
Free T4 & T.SH
FT4: normal
T.SH: normal
FT4: low
T.SH: high
FT4: low
T.SH: normal / low
Euthyroid
Primary
Hypothyroidism
Secondary or
Tertiary
Hypothyroidism

When to treat hypothyroidism?

- Patients with TSH levels >10 mIU/L should be treated
- Which patients with TSH levels of 4.5-10 mIU/L will benefit is less certain
- Replacement therapy: **1.6 µg/kg** of L-thyroxine daily.
- Dose adjustments are guided by serum TSH determinations 4-8 weeks following initiation of therapy,
- Once an adequate replacement dosage has been determined, periodic follow-up evaluations with repeat TSH testing at 6-month and then 12-month intervals are appropriate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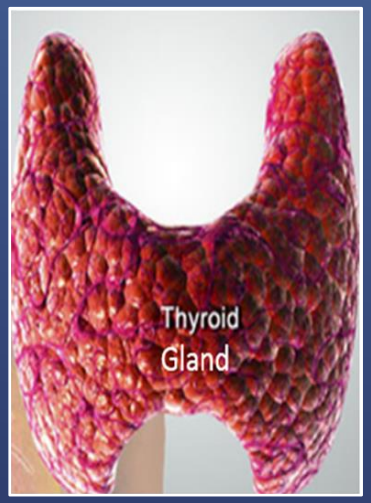


Subclinical Hypothyroidism

Definition: Subclinical hypothyroidism

- Also known as *compensated hypothyroidism* or *mild hypothyroidism*, is a condition associated with a raised TSH but a normal FT4 .

- It is common, affecting about **10%** of women above the age of **55** years.

- The prevalence increases with advancing age, over **20%** of women aged **75** years have **TSH** levels above the laboratory reference range.

Overview of subclinical hypothyroidism (SCH)

- 90% of SCH have TSH levels between 4 and 10 mIU/L.
- TSH levels may increase with age, a slight increase of TSH may be normal for older people.
- About 62% of TSH levels between 4 and 10 mIU/L normalise without intervention within ***5*** years.
- Biological variation in TSH values, means that one abnormal TSH level should be followed by a repeat blood test to confirm the diagnosis.

- It affects 4-20% of the adult population.

Overview of subclinical hypothyroidism (SCH)

- 1 in 3 patients with SCH is asymptomatic.

- Fatigue, muscle cramps, cold sensitivity, dry skin, voice changes, constipation, poor memory, slowed thinking, weak muscles, puffy eyes, anxiety, and depression. Many of these symptoms are not specific to hypothyroidism.

- Around 20-25% of people with normal TSH levels report one or two of these symptoms

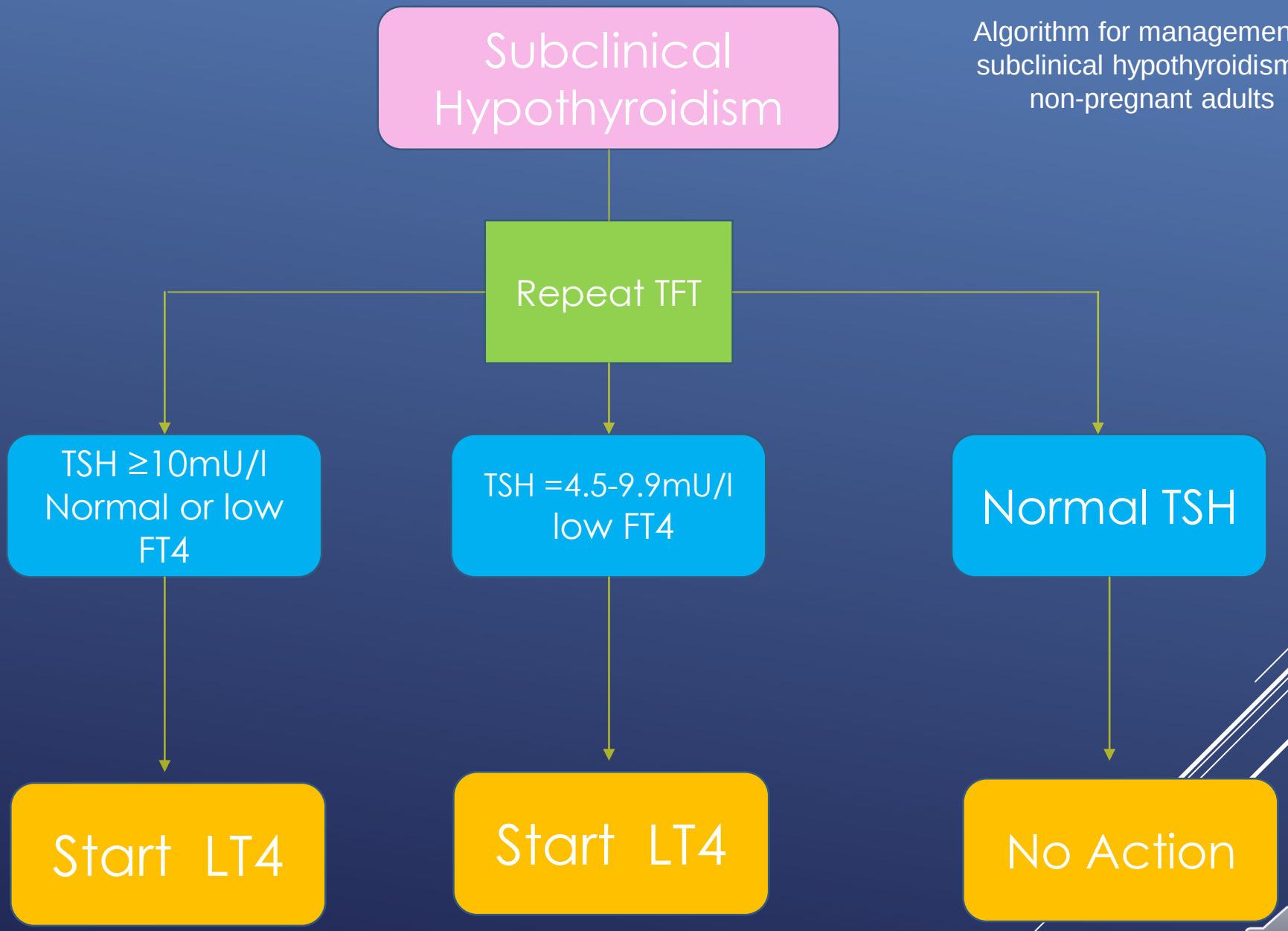
Etiology: Subclinical hypothyroidism

- Autoimmune thyroiditis (Hashimoto's thyroiditis)
- Previous treatment with radioiodine
- Sub-total thyroidectomy
- Postpartum or subacute thyroiditis
- Drugs (such as amiodarone, lithium and interferon)
- Loss-of-function mutations in the TSH receptor gene.

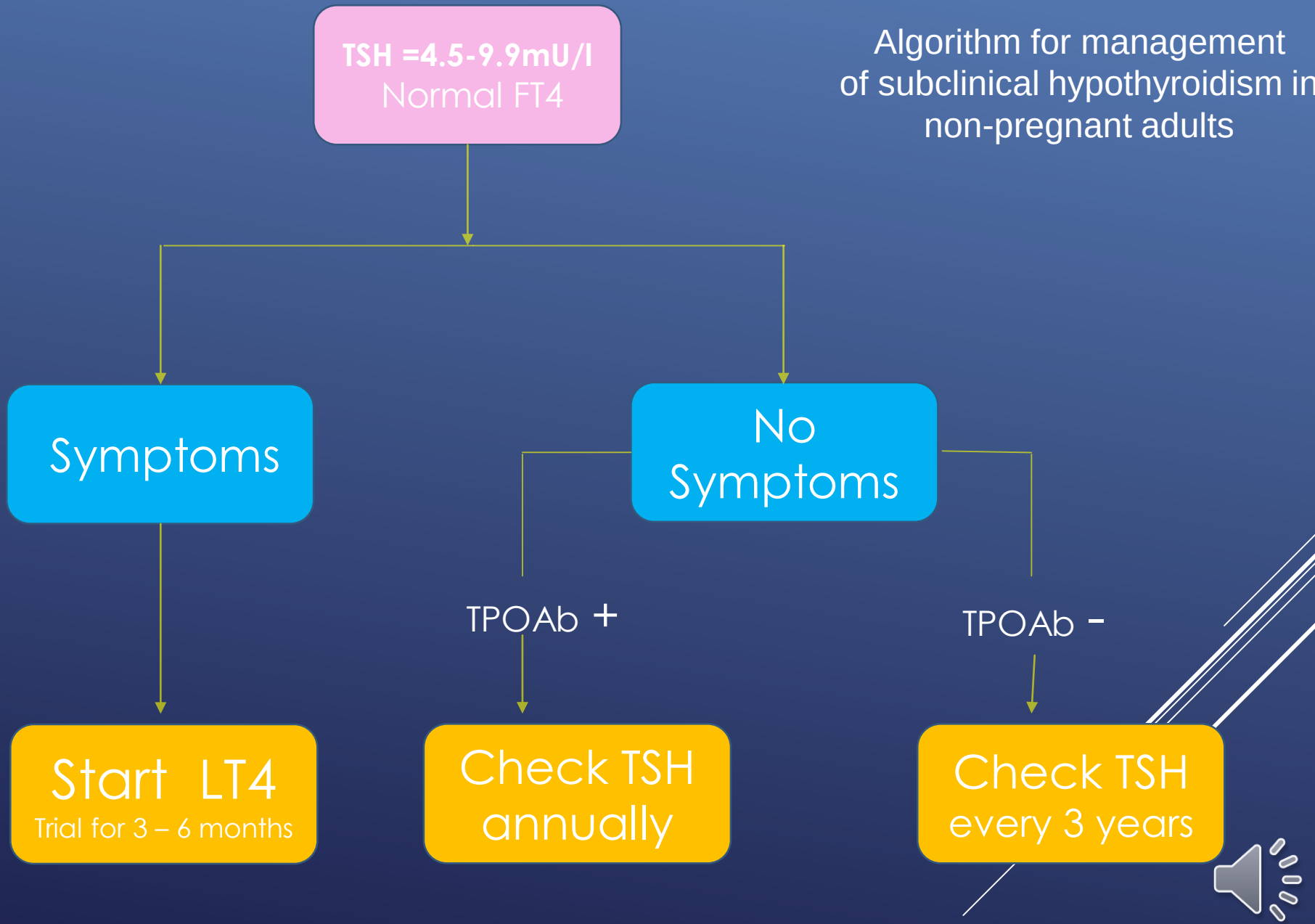
Subclinical hypothyroidism

Diagnosis	Serum TSH > the normal laboratory reference range alongside a FT4 within the reference range .
Severity	Mild subclinical hypothyroidism: TSH<10 mu/L Severe subclinical hypothyroidism: TSH >10 mu/L

Algorithm for management of subclinical hypothyroidism in non-pregnant adults



Algorithm for management of subclinical hypothyroidism in non-pregnant adults



TRUST Study

Thyroid hormone **R**eplacement for **U**ntreated older adults with Subclinical hypothyroidism **T**rial

ORIGINAL ARTICLE

Thyroid Hormone Therapy for Older Adults with Subclinical Hypothyroidism

David J. Stott, M.B., Ch.B., M.D., Nicolas Rodondi, M.D., Patricia M. Kearney, M.D., Ph.D., Ian Ford, Ph.D., Rudi G.J. Westendorp, M.D., Ph.D., Simon P. Mooijaart, M.D., Ph.D., Naveed Sattar, F.Med.Sci., Carole E. Aubert, M.D., Drahomir Aujesky, M.D., Douglas C. Bauer, M.D., Christine Baumgartner, M.D., Manuel R. Blum, M.D., et al., for the TRUST Study Group*

June 29, 2017
N Engl J Med 2017; 376:2534-2544

Methods

- A double-blind, randomized, placebo-controlled, parallel-group trial involving 737 adults who were at least 65 years of age and who had persisting subclinical hypothyroidism (TSH:4.6 to 19.9 mIu/L; FT4= within the reference range).

- 368 patients were assigned to receive LT4
- 369 patients were assigned to receive placebo

- The two primary outcomes were the change in the Hypothyroid Symptoms score and Tiredness score on a thyroid-related quality-of-life questionnaire at 1 year

Results

The mean age: 74.4 years, and 396 patients were women. The mean (±SD) TSH was 6.40±2.01 mIU /L at baseline; at 1 year, this level had decreased to 5.48 mIU /Lin the placebo group, as compared with 3.63 mIU /L in the levothyroxine group (P<0.001).

We found no differences in the mean change at 1 year in the Hypothyroid Symptoms score (0.2±15.3 in the placebo group and 0.2±14.4 in the levothyroxine group; or the Tiredness score (3.2±17.7 and 3.8±18.4, respectively;

Conclusions

Levothyroxine provided no apparent benefits in older persons with subclinical hypothyroidism.

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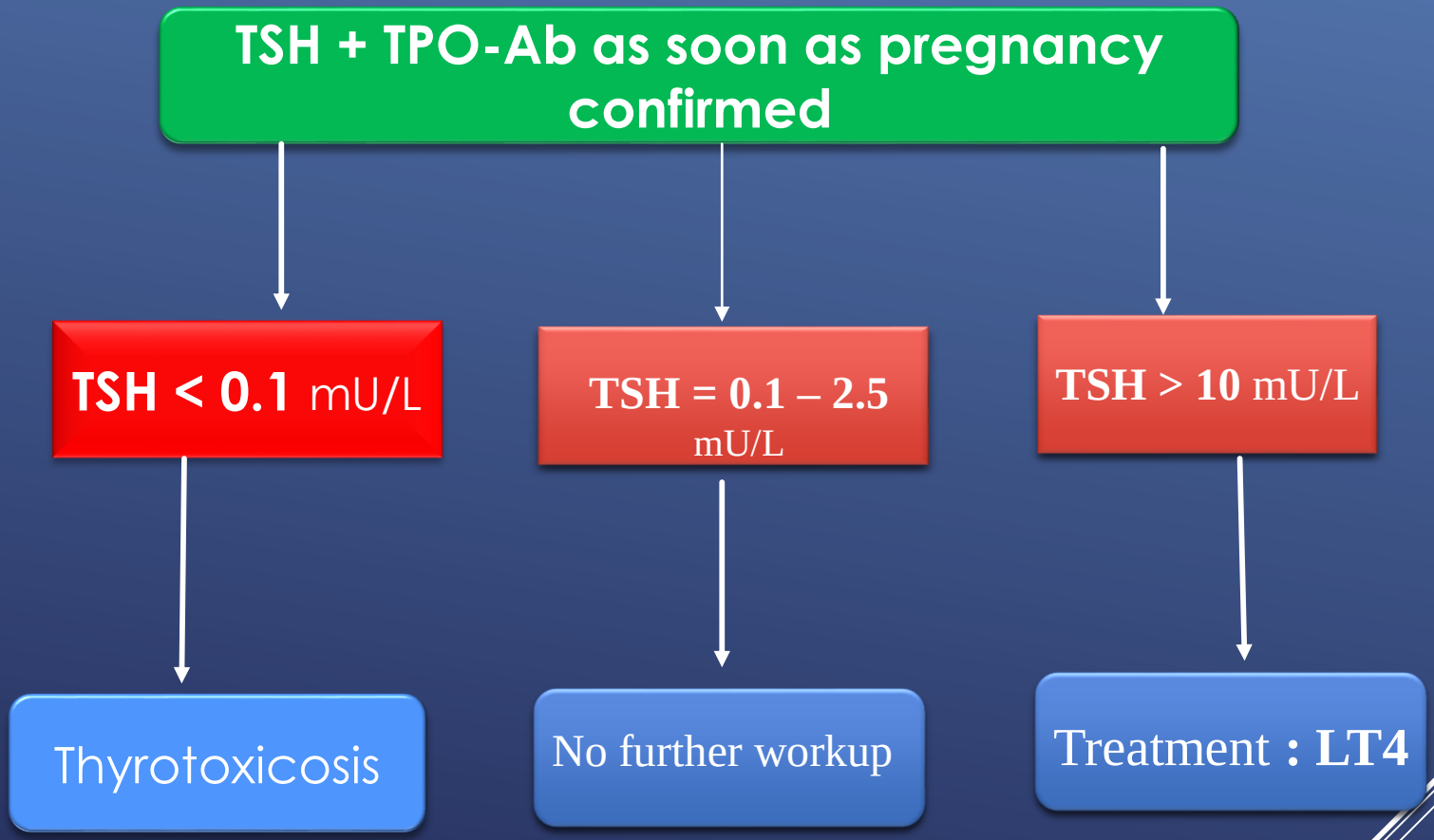
همه هست...

Testing For Thyroid Dysfunction In Pregnancy (ATA 2017)



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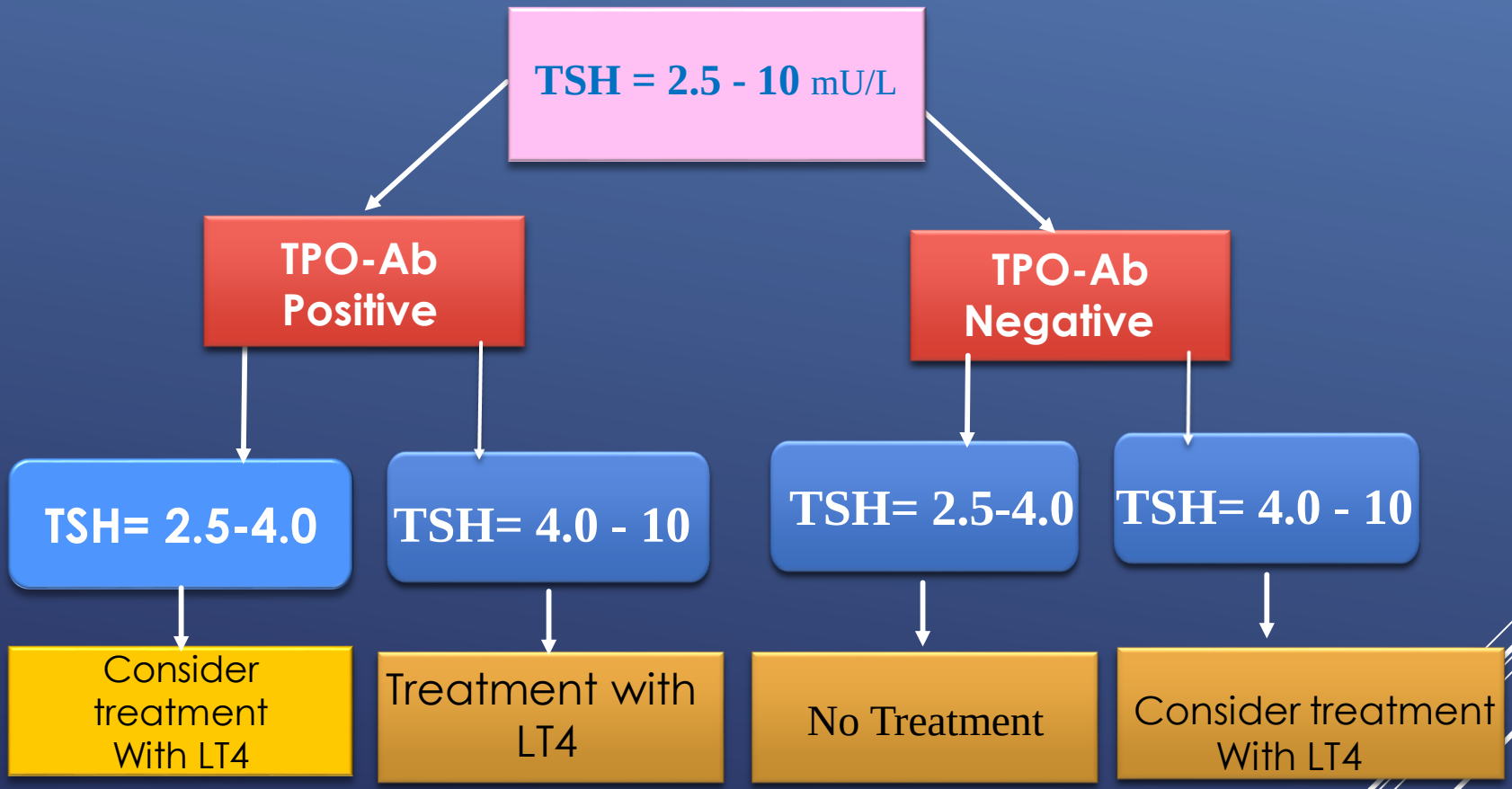

-Recurrent abortion
-IVF

-Recurrent abortion
-IVF


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در پناه حق باشید