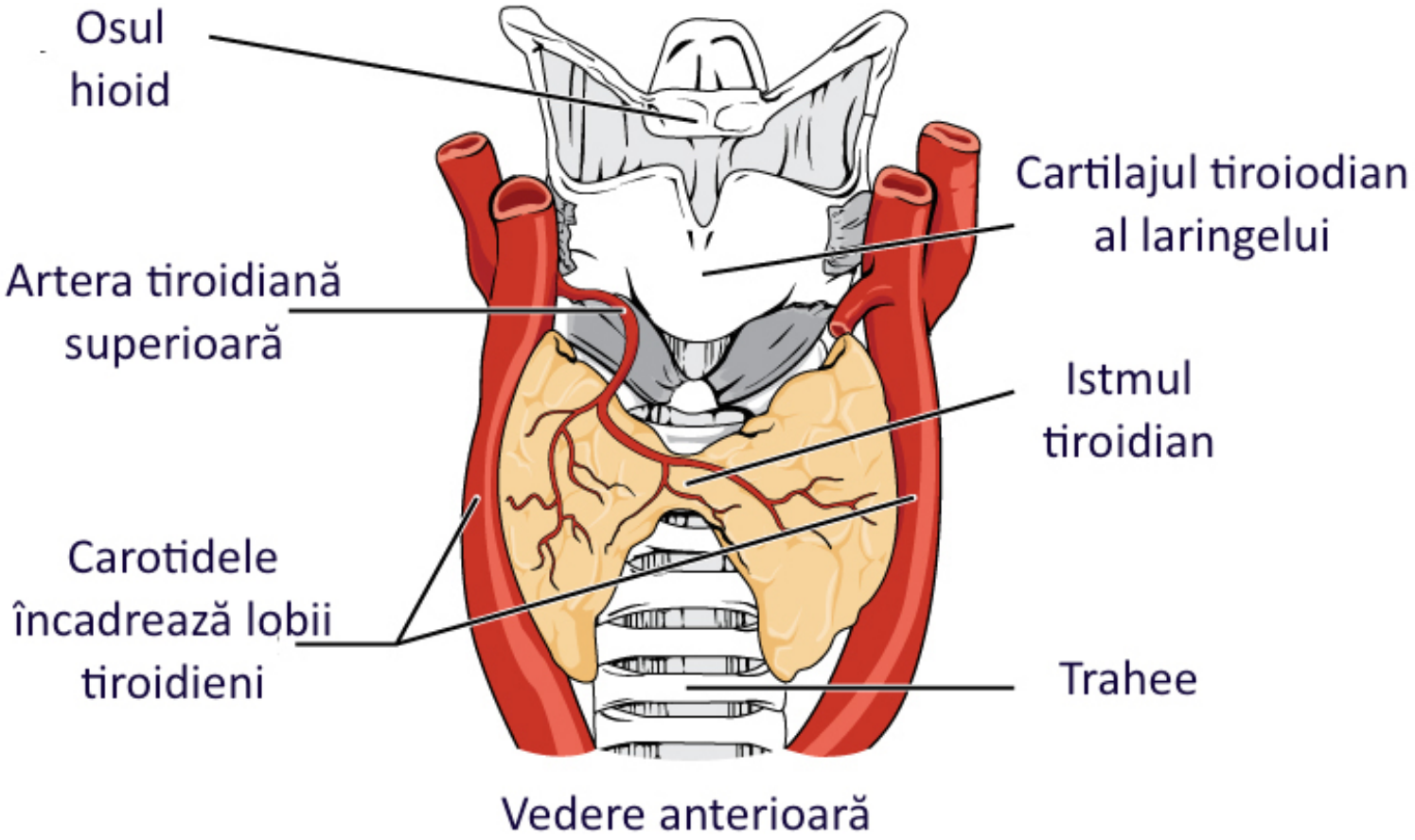
Glanda tiroida - Generalitati

Hipertiroidia

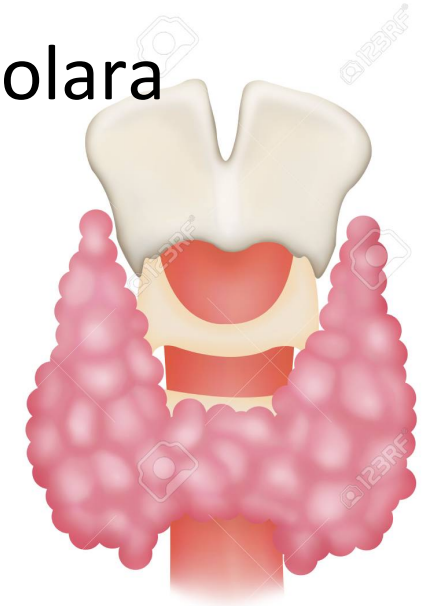
Hipotiroidia

Glanda Tiroida

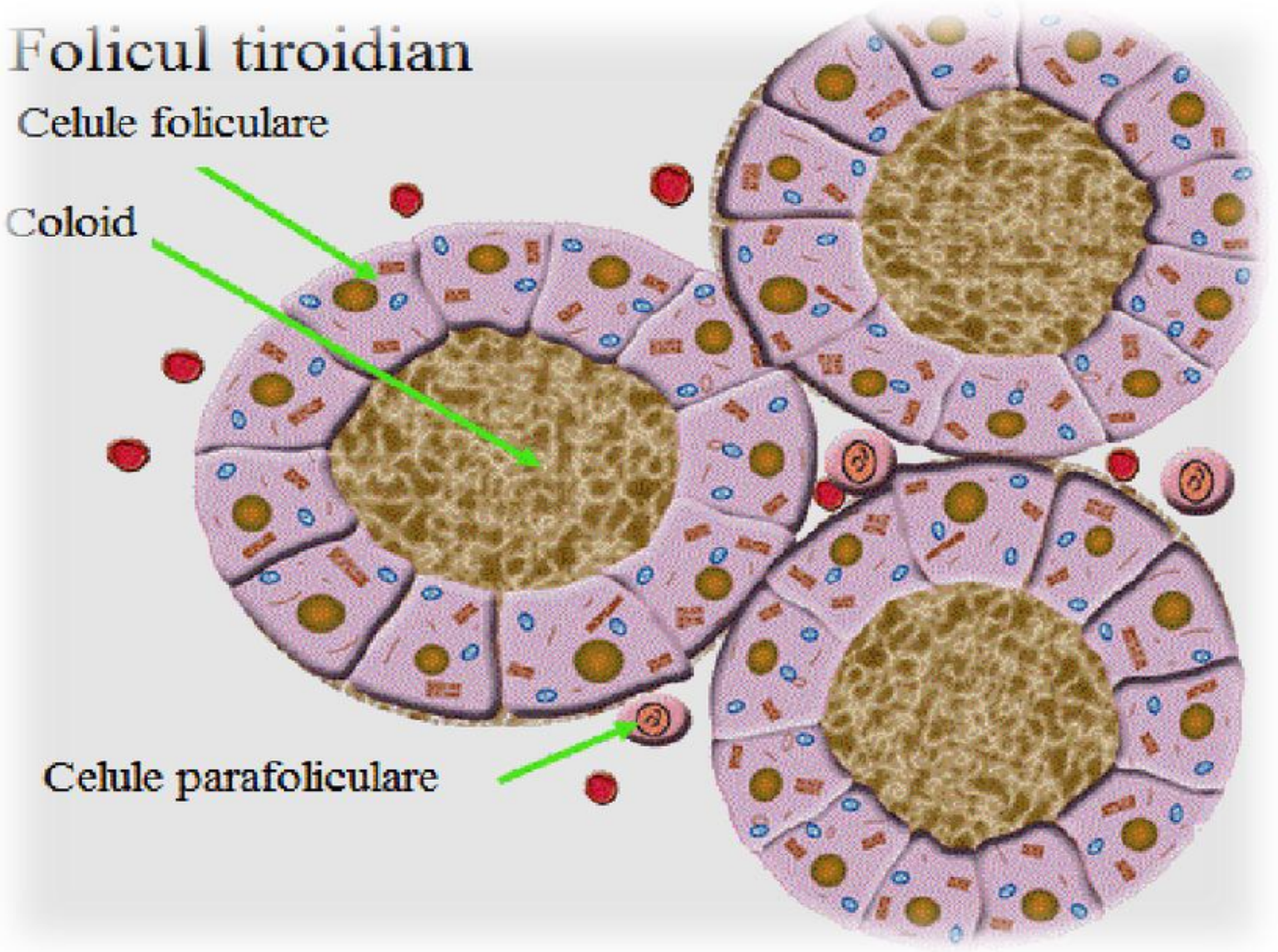


Glanda Tiroida

- Regiune cervicala anterioara – loja tiroidiana
- Glanda acinara – structura alveolara
- Gr: 10-25 g
- Forma de fluture
- **2 lobi** (dr si stg) uniti prin **istm**
- +- Lobul piramidal (~30%) = rest duct tireoglos



Foliculul tiroidian = unitatea morfo-functionala



Produsi de secretie

- Cel foliculare:

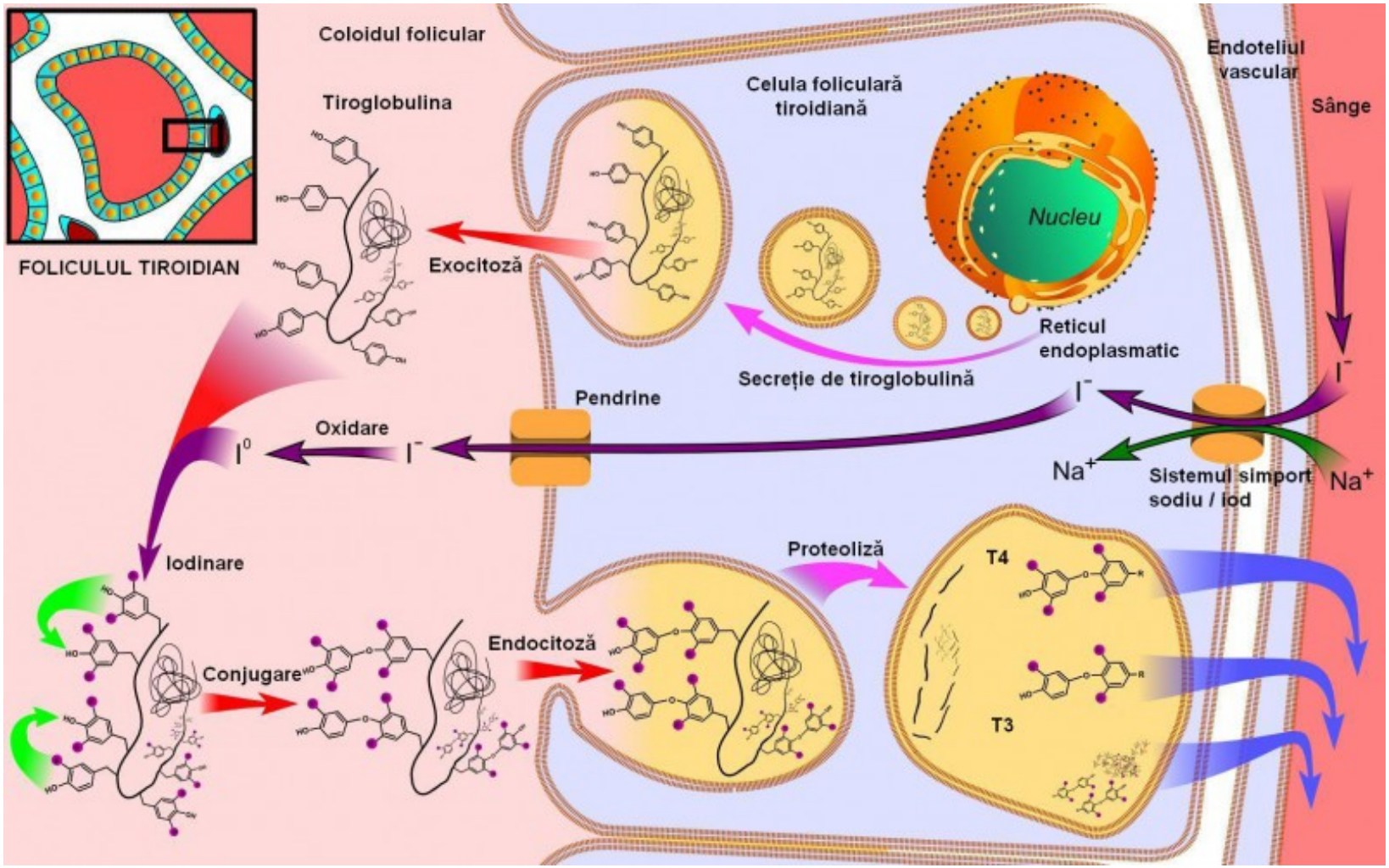
  Hormoni tiroidieni: T3 si T4

- Cel parafoliculare:

  Calcitonina

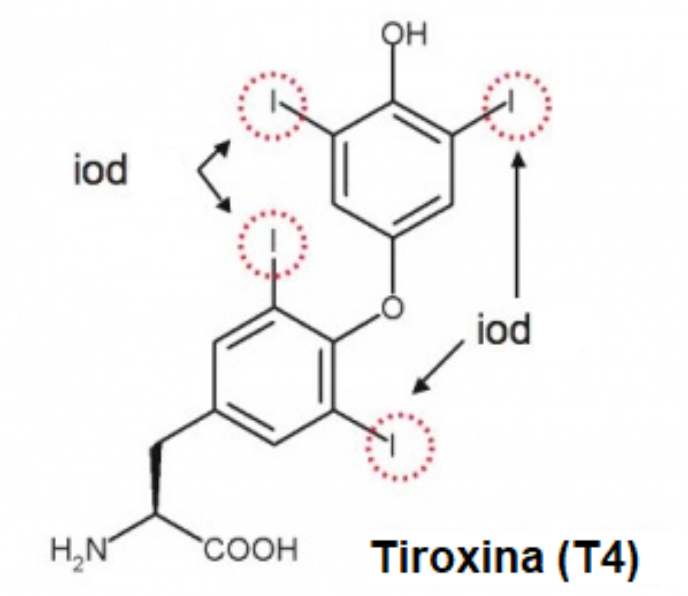
  - implicata in metabolismul fosfo-calcic
  - contrareglare PTH

Sinteza/secretia hormonilor tiroidieni



Iodul

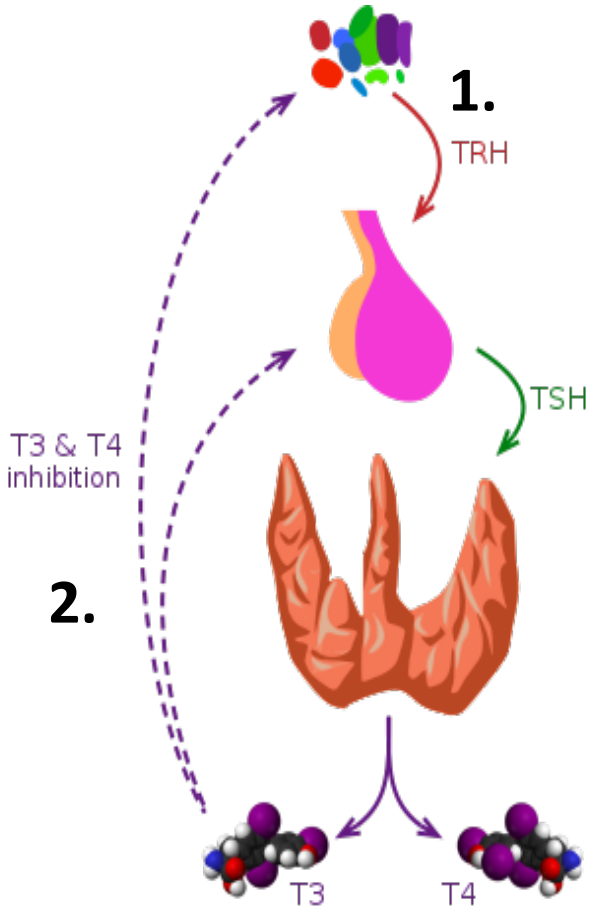
- Indispensabil pentru sinteza h. tiroidieni



Tiroxina (T4)

- Surse principale: alimentar, apa potabila

Reglarea secretiei



3. Autoreglare:

- Dependenta de aport iod
- Exces iod => ↓efectul TSH pe recpetori
- *Efect Wolff-Chaikoff*:

- Doze ↑ iod => blocare organificare & cuplare tirozine
  => blocare eliberare h. tiroidieni
- Utilitate: * Pre-operator
  * Terapia crizei tireotoxice
  * Preventie – efectele norilor radioactivi imediat dupa accidente nucleare

Glanda tiroida - Generalitati

Hipertiroidia

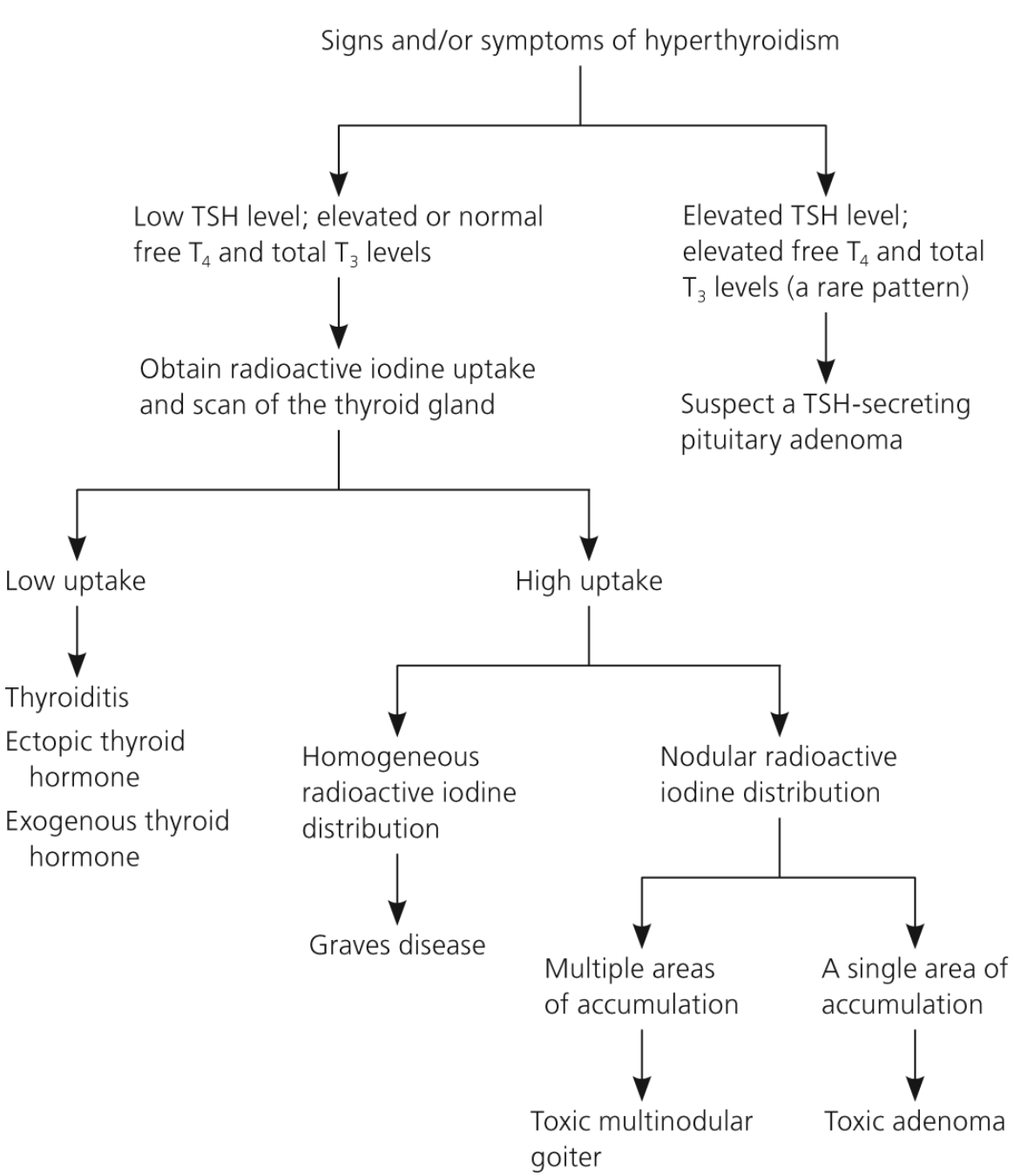
Hipotiroidia

Patologia tiroidiana

I. Hipertiroidism = sinteza si secretie ↑h. tiroidieni

– ***Tireotoxicoza*** = sd. determinat de excesul h. tiroidieni

- Hiperactivitatea gl. tiroide:
  - Boala Graves Basedow
  - Gusa polinodulara hipertiroidizata
  - Adenom autonom
- Blocarea fct. Tiroidiene:
  - Tiroidita subacuta - RIC ↓↓
  - Iatrogena (factitia)
- Productie ectopica:
  - Metastaze carcinom tiroidian
  - Struma ovarii


Signs and/or symptoms of hyperthyroidism
Low TSH level; elevated or normal free T_4 and total T_3 levels
Elevated TSH level; elevated free T_4 and total T_3 levels (a rare pattern)
Obtain radioactive iodine uptake and scan of the thyroid gland
Suspect a TSH-secreting pituitary adenoma
Low uptake
High uptake
Thyroiditis
Ectopic thyroid hormone
Exogenous thyroid hormone
Homogeneous radioactive iodine distribution
Nodular radioactive iodine distribution
Graves disease
Multiple areas of accumulation
A single area of accumulation
Toxic multinodular goiter
Toxic adenoma

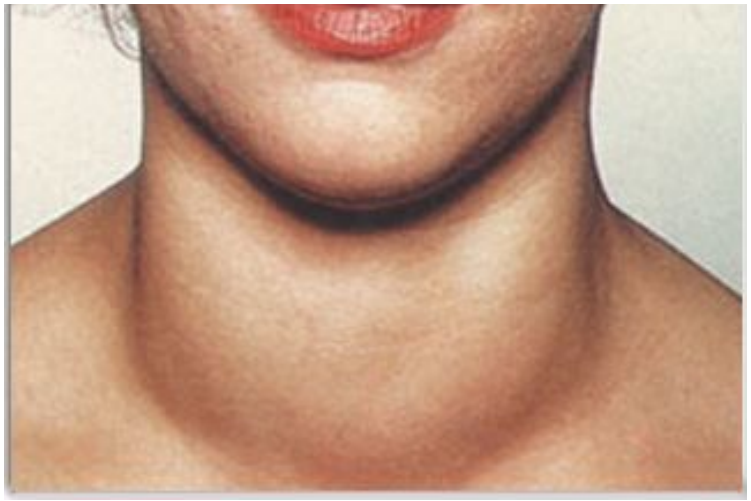
Caz 1. Daniela, 36 ani

- **Acuze:**
  - Scadere ponderala (~ 8 kg in 3 luni) - cu apetit pastrat
  - Intoleranta la caldura
  - Insomnii
  - Labilitate psiho-afectiva
  - Astenie
  - Scaderea capacitatii de concentrare (performanta scazuta)
  - Lacrimare excesiva

- **CVM:**
  - corespunzatoare;
  - fumatoare (10 pachete–an)

- **AHC, APP:**
  - nesemnificative

- **Clinic:**
  - Tremor fin al extremitatilor
  - Tegumente calde, umede
  - Privire fixa, stralucitoare
  - Protruzia globilor oculari (exoftalmie bilaterala asimetrica OS>OD)
  - Retractia palpebrala superioara, asinergie oculo-palpebrala
  - Tahicarie
  - TA: 145/90 mmHg
  - FC=103 b/min
  - Gusa: difuza, freamat la palpare, suflu sistolo-diastolic la auscultatie



Suspiciune Boala Basedow

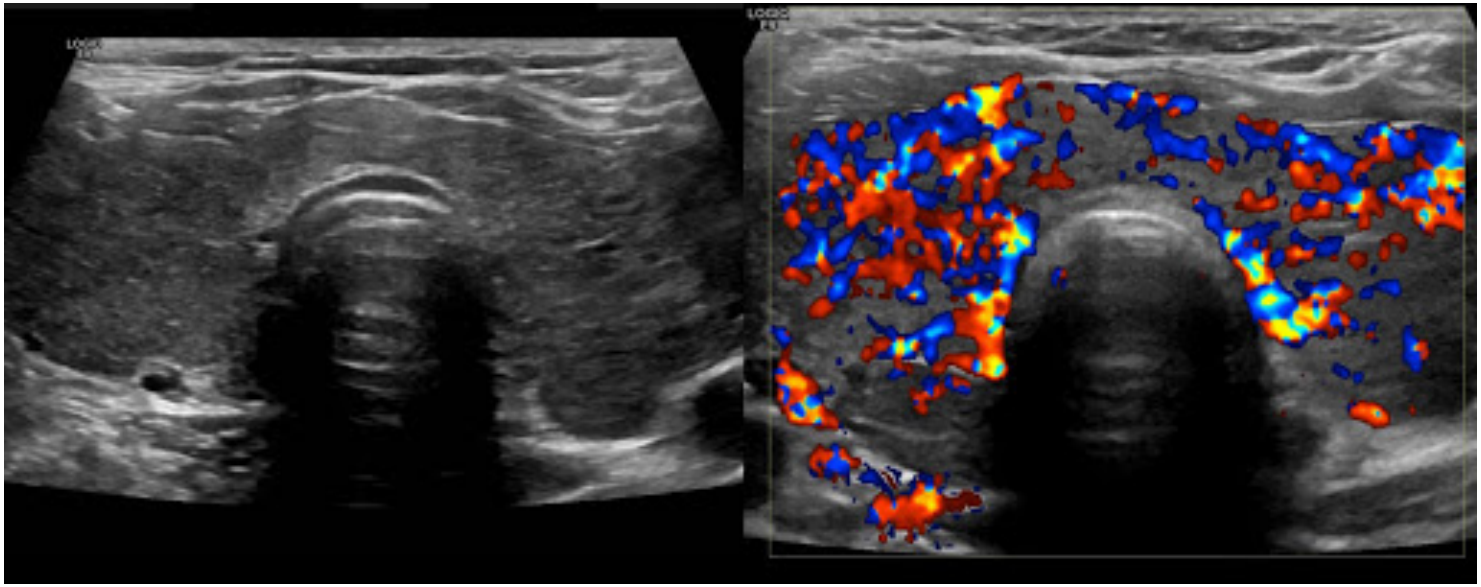
Teste functionale tiroidiene si imunologice

Determinare	Valoare	Interval referinta
TSH	0.001 mIU/L ↓	0.55-4.78 mIU/L
FT4	64.8 pmol/L ↑	11.50-22.70 pmol/L
FT3	19.18 pmol/L ↑	3.54-6.47 pmol/L
TRAb	**16.40** ↑	**<1.75 UI/L**
Anti TPO	**>1300 U/mL** ↑	**0-60 U/mL**
Anti Tg	**25.3 U/mL**	**0-60 U/mL**

Confirmarea bolii Basedow

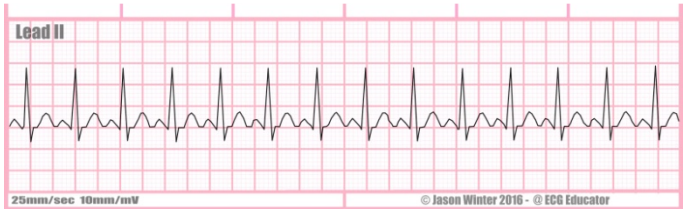
Ecografia tiroidiana

- Tiroida de volum crescut (29 ml)
- Parenchim de aspect hipoecogen, neomogen
- Vascularizatie accentuata difuz

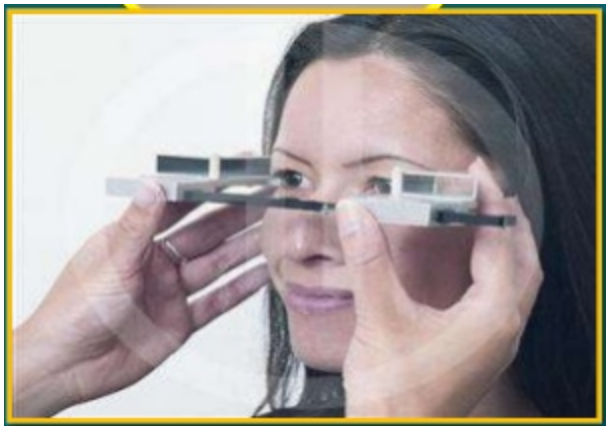


Paraclinic

- ECG: tahicardie sinusala



- Osteodensitometrie DXA:
  - Daca hipertiroidia – lunga durata
- Examen oftalmologic:
  - Acuitate vizuala — in limite normale
  - Miscarile globilor oculari
  - Exoftalmometrie
    - Indici Hertel: OS = 23 mm
      OD = 24 mm



Evaluarea acvitatii orbitopatiei

- Durere spontana
- Durere la miscare
- Edem pleoape
- Eritem pleoape
- Eritem conjunctival
- Chemozis
- Inflamatie caruncula

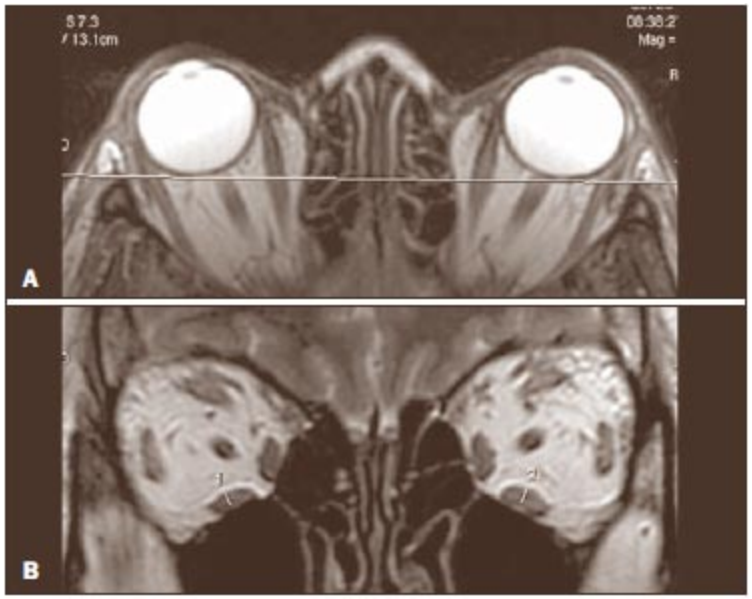
minim 3 = activa

EUGOGO
EUropean Group On Graves' Orbitopathy

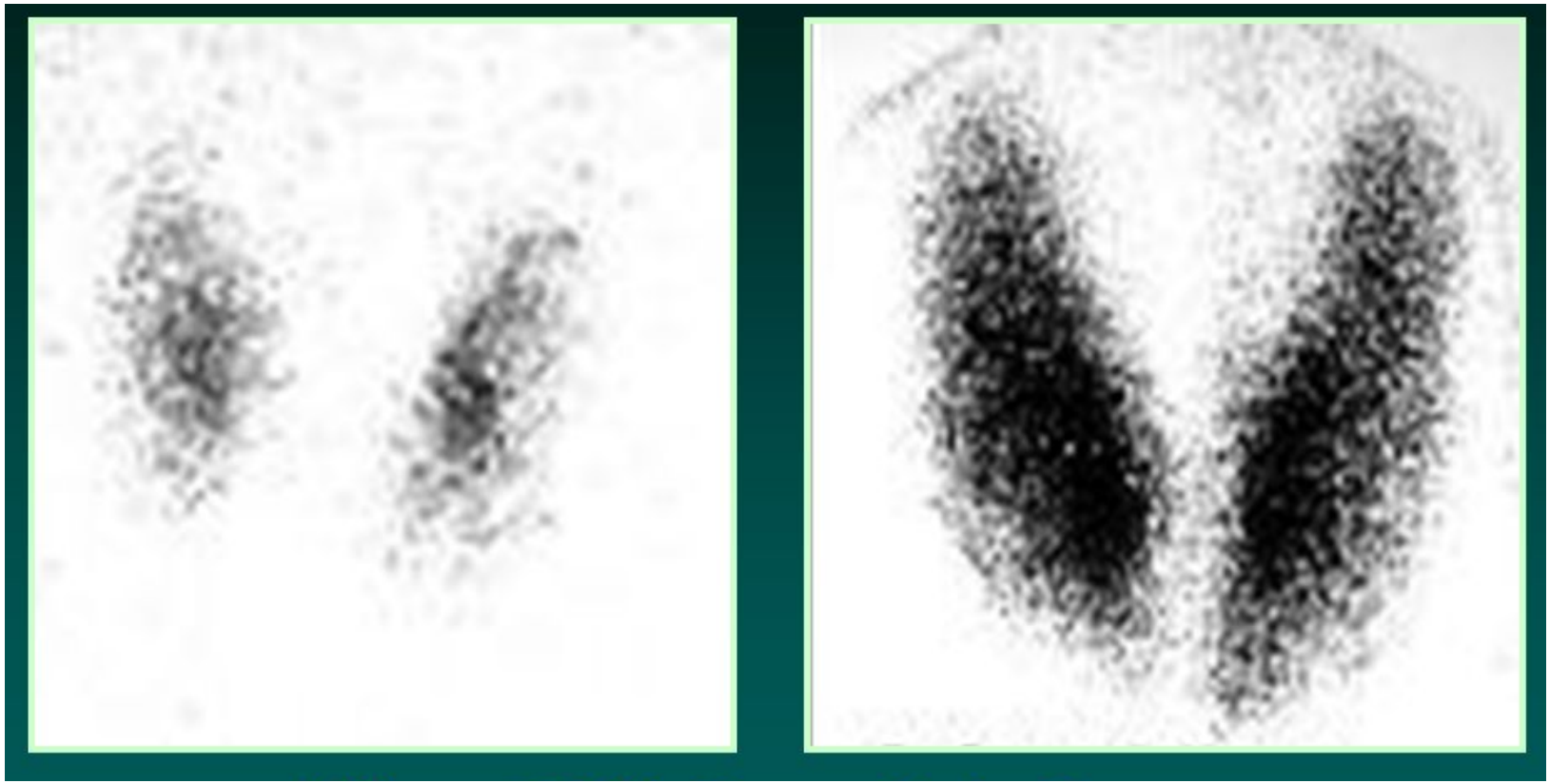
CAS	For initial assessment, only score items 1–7
1	Spontaneous orbital pain
2	Gaze evoked orbital pain
3	Eyelid swelling; considered due to active TED
4	Eyelid erythema
5	Conjunctival redness; considered due to active TED
6	Chemosis
7	Inflammation of caruncle or plica
	Follow-up assessment at 1–3 months can be scored out of 10
8	Increase of >2mm in proptosis
9	Decrease in uniocular excursion in any one direction of >8 degrees
10	Decreased acuity equivalent to 1 Snellen line

RMN orbite:

- edem, proliferarea grasimii extraoculare =>proptoza
- musculatura extraoculara usor hipertrofiata



Scintigrafic



Normal vs. Boala Basedow

B. Graves Basedow

= hiperfunctie tiroidiana difuza <– cauza autoimuna

- **TSI** = Thyroid stimmulating Ig (TRAb stimulatori)

  => stimularea ↑↑ tiroidei

Posibile complicatii:

- cardiotireoza: FiA, glutter, IC
- Oculare: orbtitopatia severa
- Osteoporoza: mai severa post-menopauza
- Criza acuta tireotoxica

Recomandari tratament:

- Propranolol 20 mg x 2/zi
- Tiamazol 10 mg 2-1-1
  - 3 saptamani, ulterior cu scaderea progresiva a dozelor
- Evitarea preparatelor ce contin iod, a investigatiilor cu SDC iodata !
- Evitarea unui efort fizic intens

Tratamentul in Boala Basedow

1. Igieno-dietetic:

- evitarea produselor pe bază de iod
- evitarea eforturilor fizice şi psihice

2. *Tratament medicamentos*

Antitiroidiene de sinteza (ATS) = DE ELECTIE!

- Efecte secundare: reacții cutanate alergice, leucopenie, agralunocitoză (f rar)
- Durata tratamentului: **1-2 ani**
- Doza **atac**: 10-40 mg Tiamazol/zi
- Se scad treptat -> Doza **întreținere**: 2.5-10 mg/zi

3. *Simptomatic*: f

- sedative f
- beta-blocante neselctive

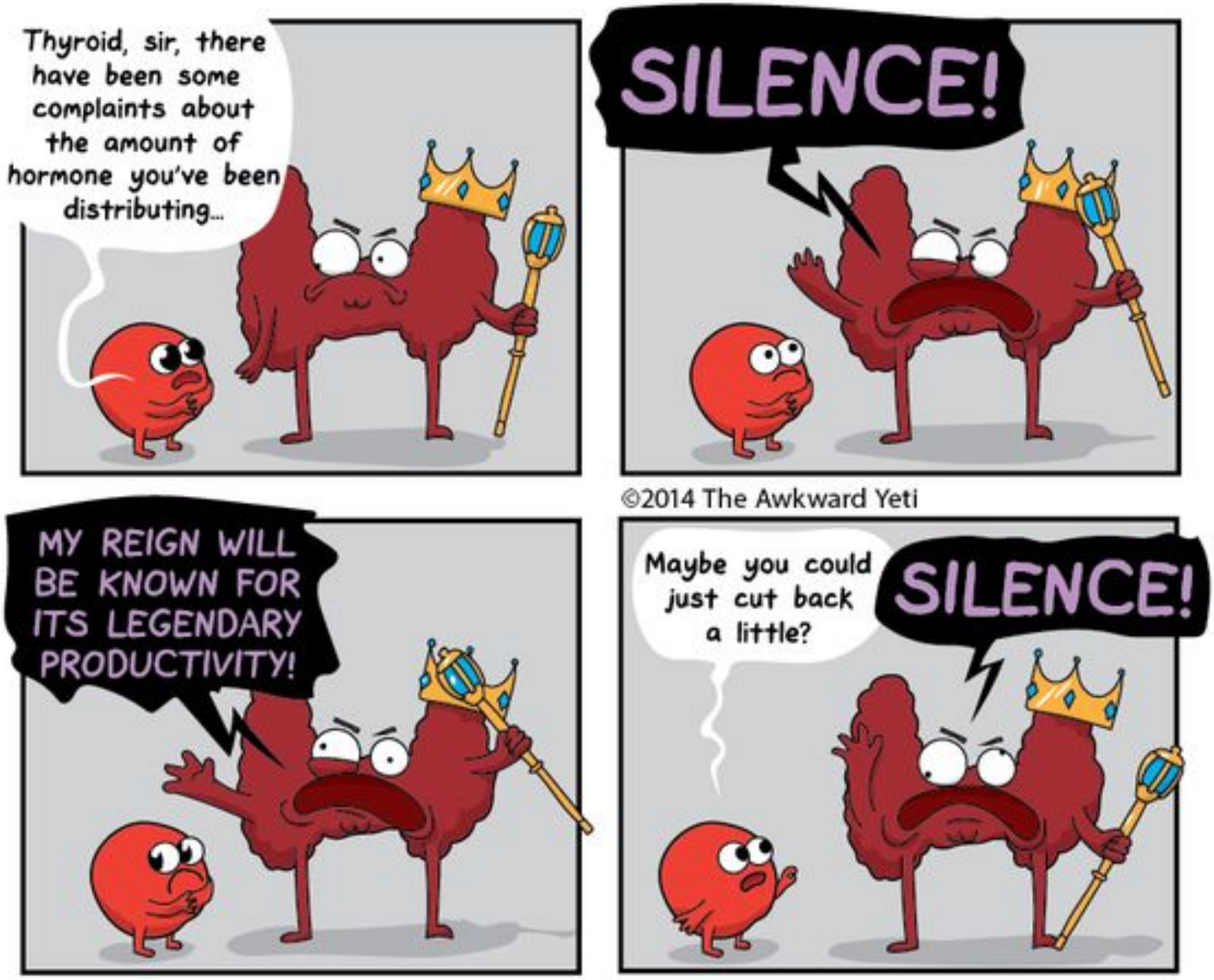
4. *Chirurgical*: tiroidectomie totală

- guşi voluminoase și nodulare
- suspiciune malignitate
- Necomplianta la tratament ATS.

!!! Preoperator: obținerea eutiroidiei, iar cu 10-14 zile

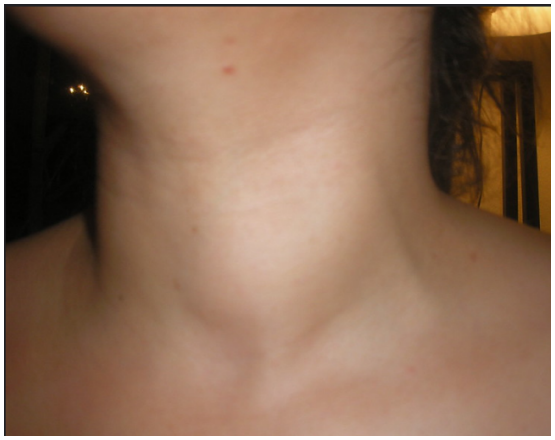
5. *Iod radioactiv (I131)*

- efecte secundare severe/necomplianta la ATS
- Contraindicații chirurgie
- recidive postoperator
- Efectele terapeutice - tardiv (6-12 luni)


Thyroid, sir, there have been some complaints about the amount of hormone you've been distributing...
SILENCE!
©2014 The Awkward Yeti
MY REIGN WILL BE KNOWN FOR ITS LEGENDARY PRODUCTIVITY!
Maybe you could just cut back a little?
SILENCE!
theAwkwardYeti.com

Caz 2. Cristina, 22 ani

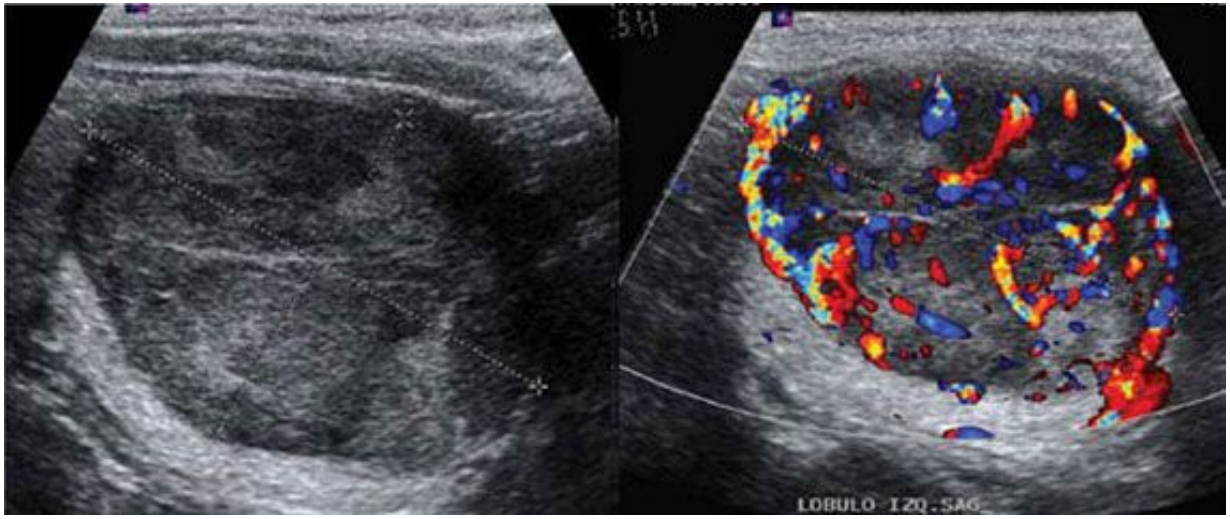
- **Anamnestic**:
  - Aparitia unei formatiuni nodulare LTD, de ~1 an
  - In ultima luna: crestere accelerata in volum
  - Disfonie
  - Senzatia de “nod in gat”



- **Clinic**:
  - Cervical drept: se palpeaza o formatiune nodulara ~3cm, ferma, mobila cu deglutitia, neaderenta la planurile profunde, fara adenopatii latero-cervicale

Ecografie tiroidiana

- LTD: formatiune nodulara solida care ocupa aproape in intregime lobul (3.2/4.1/3 cm),bine elimitata, cu halou fin, hipoecogena, neomogena; cu vascularizatie accentuata in interior
- In rest, parenchim izoecogen, vascularizatie normala, VT=26,85ml



Teste functionale tiroidiene

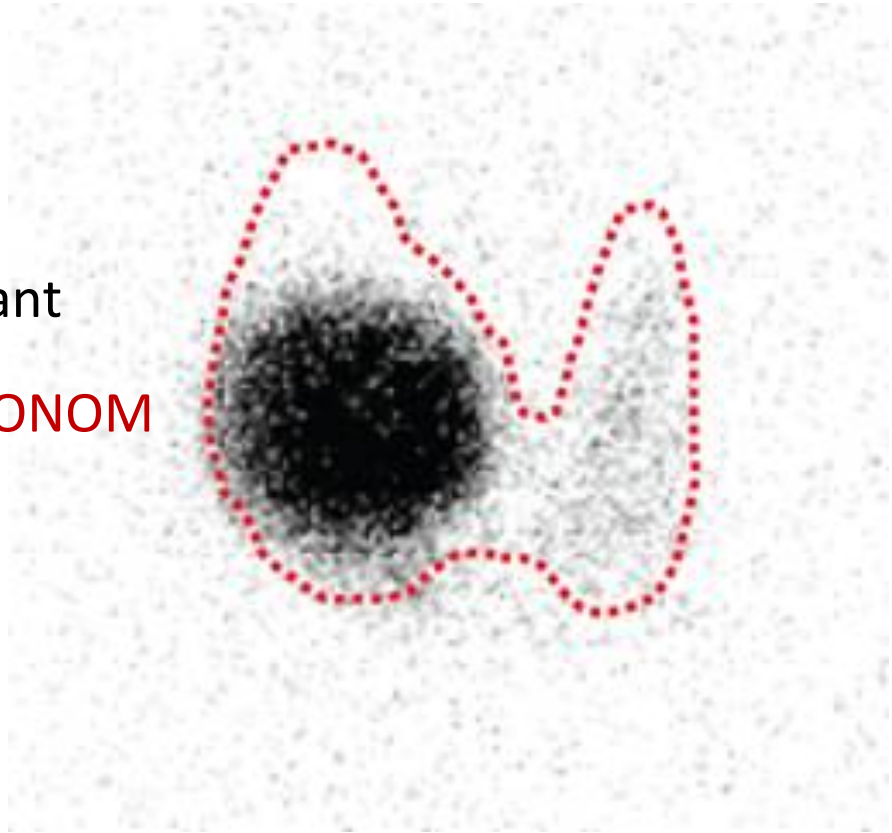
Determinare	Valoare	Interval referinta
TSH	0.091 mIU/L ↓	0.55-4.78 mIU/L
FT4	20.78 pmol/L	11.50-22.70 pmol/L
FT3	5.98 pmol/L	3.54-6.47 pmol/L

=> hipertiroidie subclinica

Scintigrafie tiroidiana Tc99

- macronodulul “fierbinte” LTD
- restul parenchimului hipocaptant

=> Confirmare dg. ADENOM AUTONOM



Tratament - definitiv

Pre-tratament: EUTIROIDIZARE ! (ATS 2-3 luni) ± betablocant

1. **Radioterapia**:
    - Noduli de dimensiuni mici
    - Pacienti > 45 ani
    - Fara sarcina programata
2. **Chirurgical**: LOBECTOMIE -> fara hipotiroidism iatrogen
    - Noduli de dimensiuni mai mari
    - Pacienti < 45 ani
3. **Inj. etanol percutan**

Caz. Tratament

- Interventie chirurgicala: **Lobectomie dreapta**
- Pre-op:
  - Nu necesita ATS – hipertiroidie SUBclinica
  - Nu necesita betablocant
- Post-op:
  - Se urmareste TSH, FT4
  - Se asteapta restabilirea fct tiroidiene normale

Caz 3. Petru, 69 ani

- **Acuze**:
  - Dispnee (de ~ 6 saptamani)
  - Scadere ponderala neintentionata
  - Tranzit intestinal accelerat
  - Letargie
- **APP**:
  - In urma cu 2 luni: dg **FiA paroxistica – se initiaza tratament cu amiodarona** (AMD) si acenocumarol
  - Neaga istoric cunoscut de patologie tiroidiana (nu a fost evaluat)

- **Clinic**:
  - Tegumente calde, umede
  - Nu se palpeaza gusa
  - TA= 130/90 mmHg
  - FC= 91 b/min

Suspiciune disfunctie tiroidiana indusa de AMD

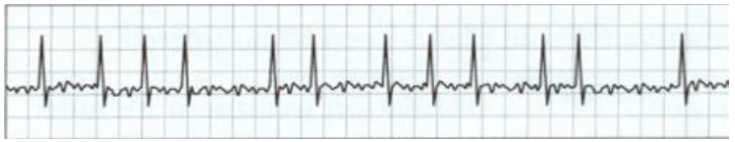
Teste functionale tiroidiene si imunologice

Determinare	Valoare	Interval referinta
TSH	0.06 mIU/L ↓	0.55-4.78 mIU/L
FT4	56.9 pmol/L ↑	11.50-22.70 pmol/L
FT3	8.30 pmol/L ↑	3.54-6.47 pmol/L
TRAb	**0.8 UI/L**	**<1.75 UI/L**
Anti TPO	**17 U/mL**	**0-60 U/mL**
Anti Tg	**25.3 U/mL**	**0-60 U/mL**

Alte determinari serice

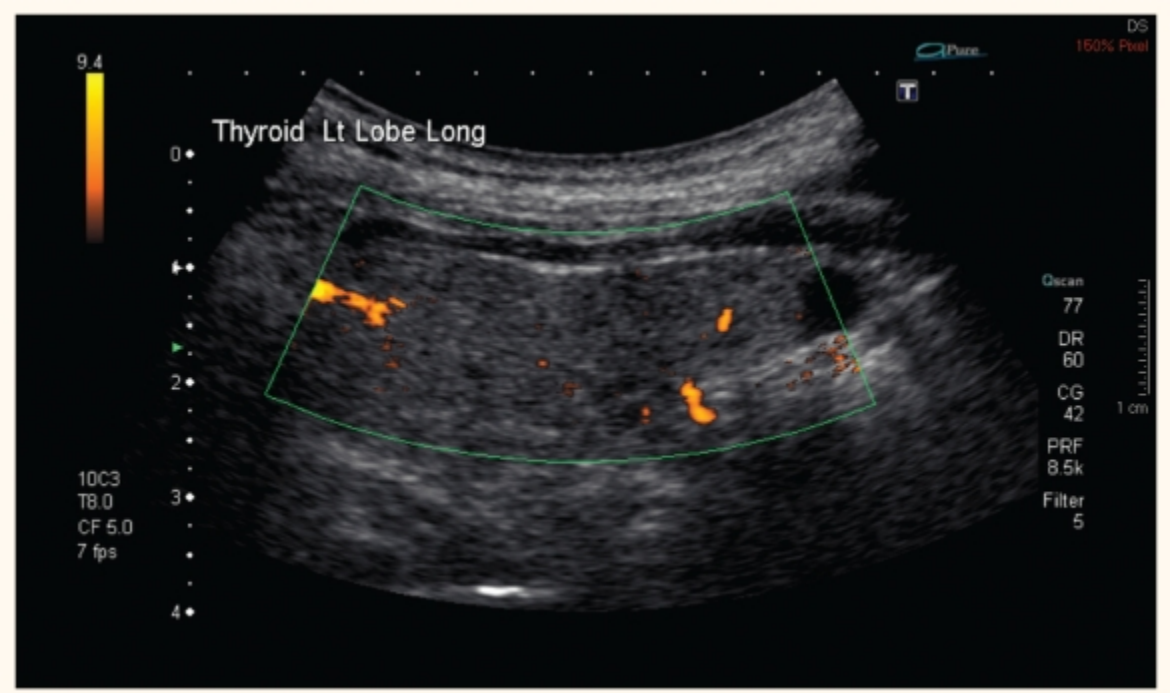
Determinare	Valoare	Interval referinta
Hb	13.7 mg/dl	13-15 mg/dl
PCR	3 mg/dL	< 0.5 mg/dL
VSH	40 mm/h	< 30 mm/h
Creatinina serica	0.9 mg/dl	0.55-1 mg/dl
Sodiu seric	140 mmol/L	136-144 mmol/L
Potasiu seric	3.7 mmol/L	3.5-5 mmol/L

- ECG: fibrilatie atriala

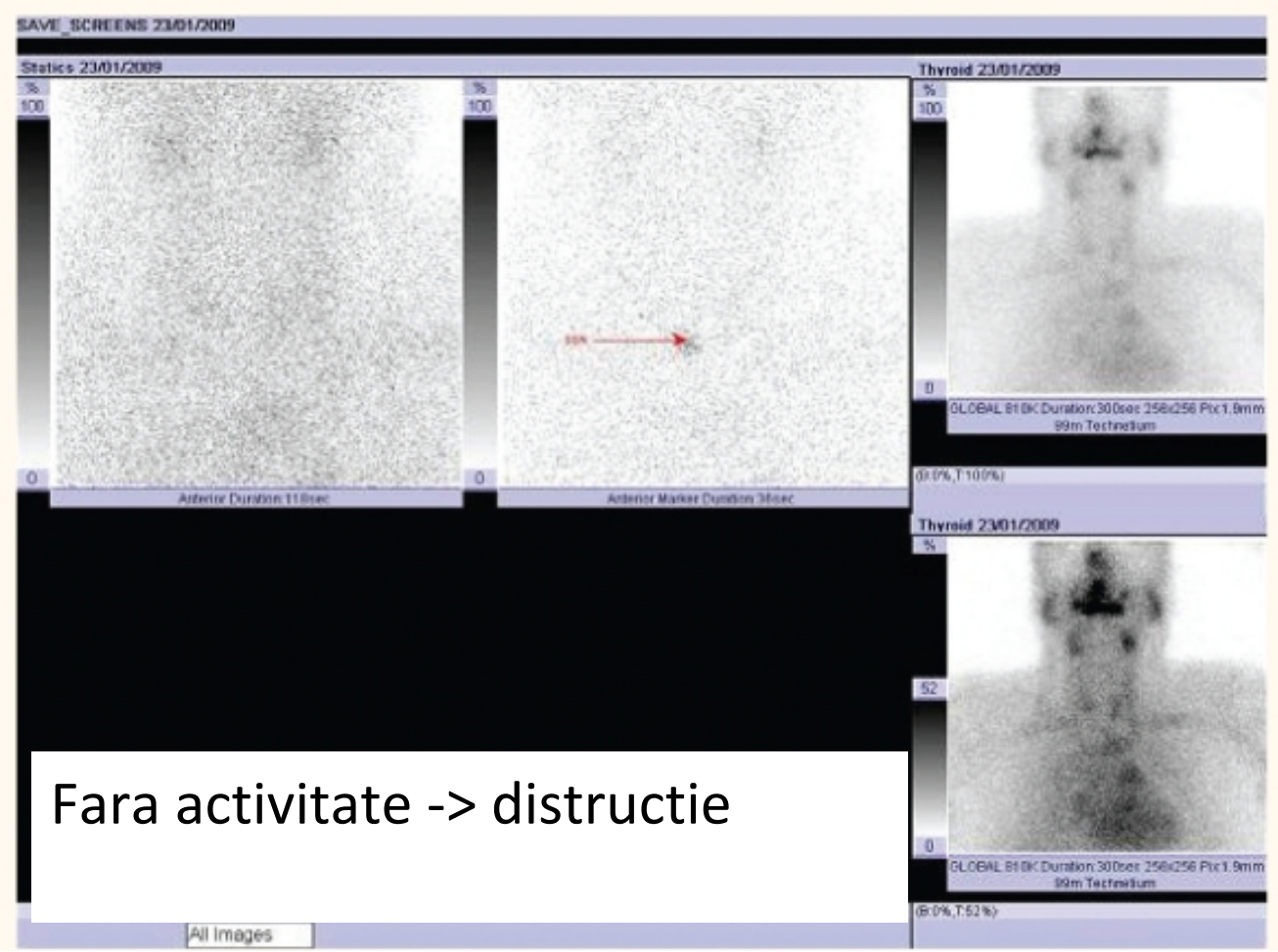


Ecografia tiroidiana

- Volum tiroidian normal
- Vascularizatie redusa
- Fara formatiuni nodulare



Scintigrafia tiroidiana



Fara activitate -> distructie

Amiodarona

- Folosit in tratamentul antiaritmic
- 1 cp Amiodarona contine 75 mg Iod

  (100 x necesar zilnic)
- Depozitat
  - Tesut adipos
  - Muschi
  - Ficat
  - Plamani
- T ½ = 50 zile
- ~18% din pacienti dezvolta disfunctie tiroidiana

Tireotoxicoza indusa de AMD

- **Tip 1**: afectiuni tiroidiene **preexistente**
  - *Gusa difuza / nodulara*
  - *B. Basedow latenta*

Exces iod => ↑ **sinteza + eliberare h. tir**

- **Tip 2**: Tiroida anterior **indemna**

Distructia tesutului glandular => **eliberare h. tir. preformati**

+

inflamatie <- toxicitatea AMD

- **Forme mixte**

Tratament

- **Tip 1**: afectiuni tiroidiene **preexistente**
  - **ATS** in doze mari
  - ± Perclorat de K -> blocheaza captarea iodului (tir.)
  - Beta-blocante
  - Tiroidectomie totala – cazuri care nu raspund la tratament
- **Tip 2: Tiroidita distructiva**
  - **Glucocorticoizi**
- **Forme Mixte :**
  - **Asociere ATS si glucocorticoizi**

- S-a initiat tratament cu:
  - 40 mg Prednisolon /zi
  - 20 mg Propranolol x2/zi
- Dupa 2 luni:
  - Clinic: semnele clinice s-au ameliorat
  - FC = 75 b/min
  - Probe inflamatorii : N

Determinare	Valoare	Interval referinta
TSH	1.24 mIU/L	0.55-4.78 mIU/L
FT4	18.78 pmol/L	11.50-22.70 pmol/L
FT3	5.67 pmol/L	3.54-6.47 pmol/L

  - > Scaderea treptata a dozei GC