

1<sup>st</sup> Department of Obstetrics and Gynecology Medical School Aristotle University of Thessaloniki

#### Menstrual disturbances From symptom to diagnosis and management

#### **Dimitrios G. Goulis**

Professor of Reproductive Endocrinology Aristotle University of Thessaloniki



STRAID . ANYON

 Introduction to diagnostic and therapeutic approach of menstrual disturbances

Implementation of the theory into clinical practice

### Structure

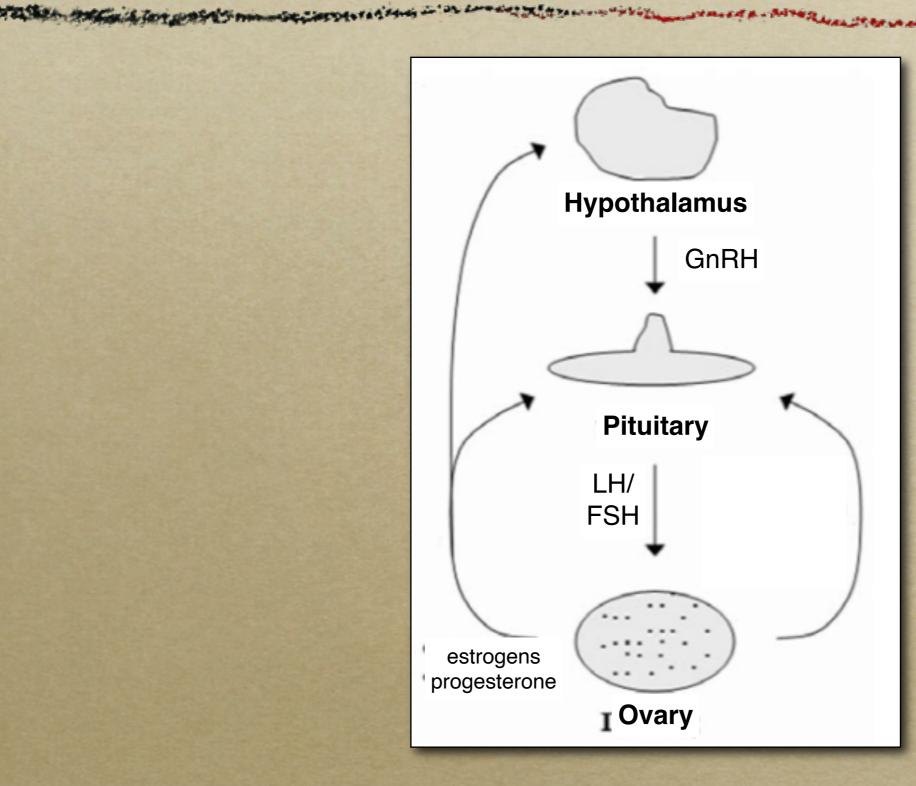
Physiology of menstrual cycle

- 。 Girl 16-year-old with primary amenorrhea
- Athlete 20-year-old with secondary amenorrhea
- . Woman 32-year-old with oligomenorrhea and galactorrhea
- . Woman 25-year-old with oligomenorrhea and hirsutism

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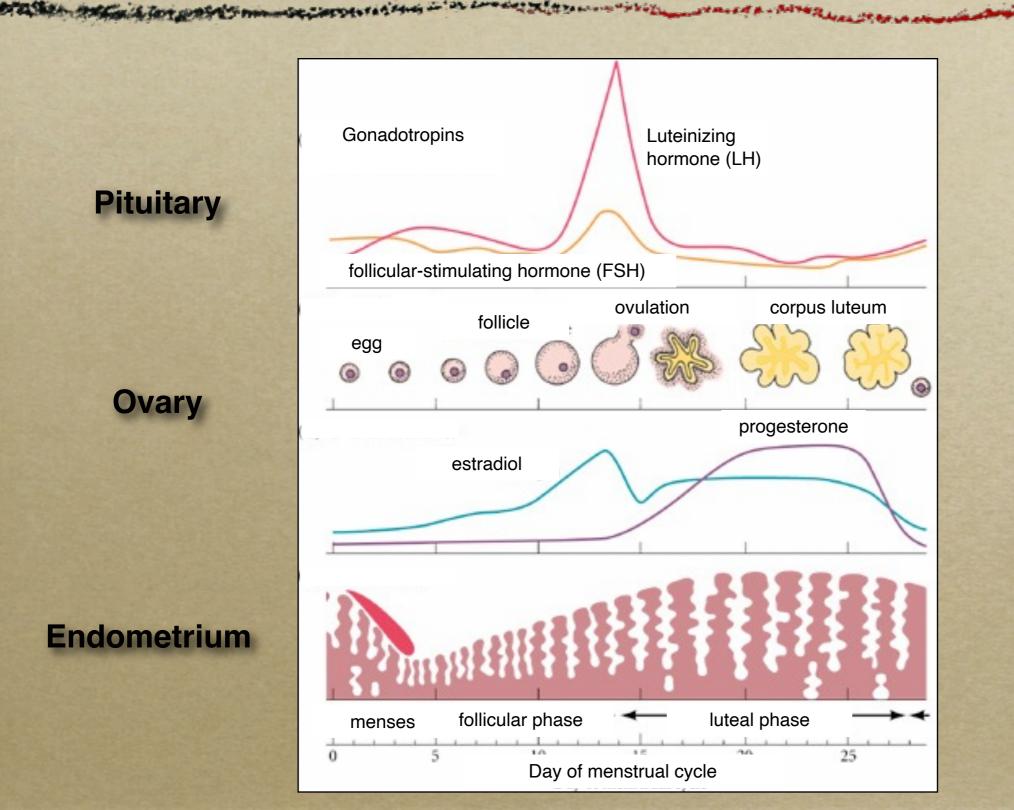
### Hypothalamus-pituitary-ovary axis



## Physiology of menstrual cycle

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## Definitions

Amenorrhea

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- primary
- secondary
- Oligomenorrhea
- Polymenorrhea
- Hypomenorrhea
- Hypermenorrhea
- Menometrorrhagia
- 。 Dysmenorrhea

> 6 months > 35 days< 21 dayslow quantity high quantity irregular bleeding pain

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in the second second second

• Primary amenorrhea

Were a statistic for ward of me we construction in the Low day of the second with the second as a survey as a

。 Low stature

## **Clinical picture**

and the second of the second of the

• Delayed puberty

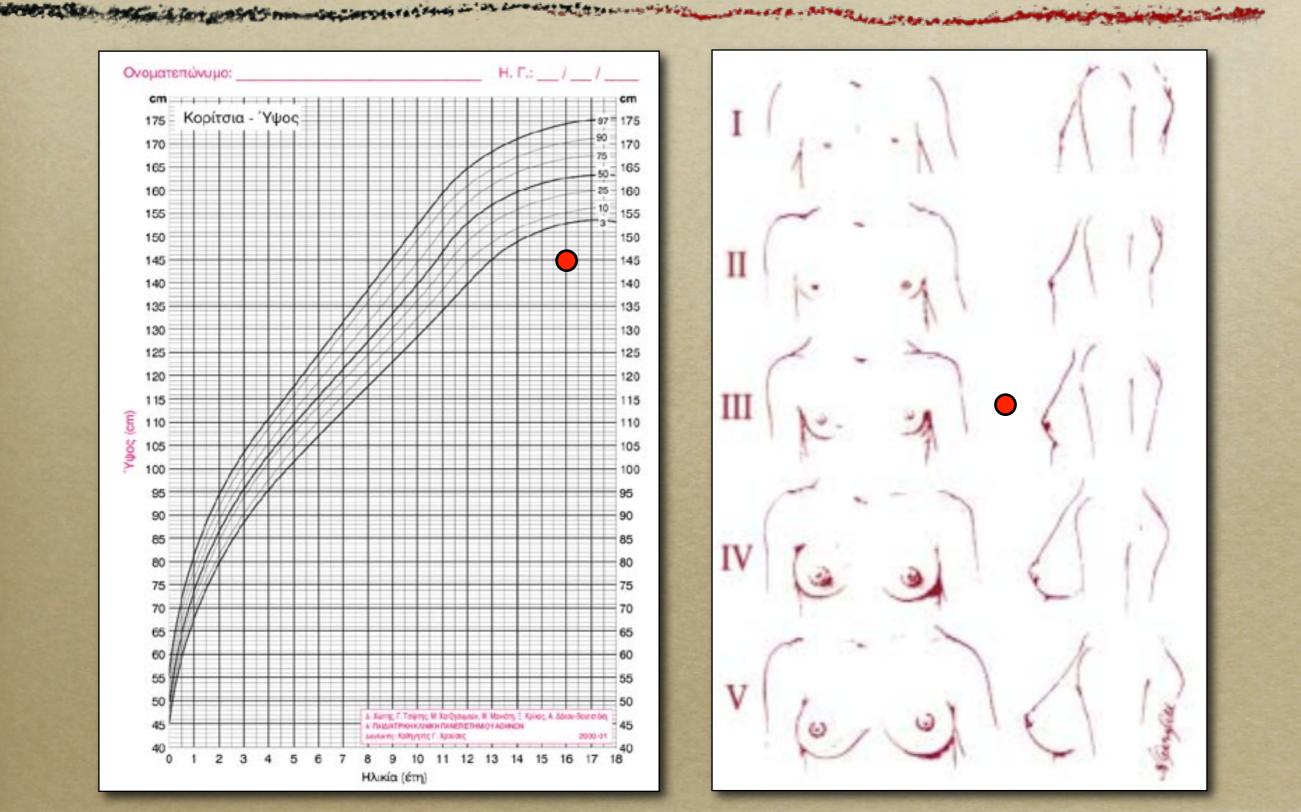
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• Height: 1,45 m

# **Clinical picture**



### **Clinical picture**



## Laboratory investigation

The second for work of men we competed the in the construction with the second and a survey and

#### • FSH

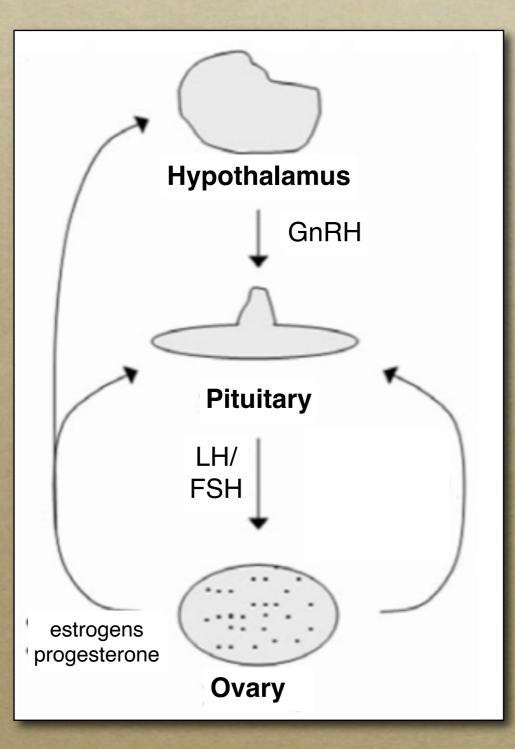
- 。LH
- 。 Estradiol
- 。 Prolactin
- Testosterone

47 IU/L 57 IU/L 10 pg/mL 6 ng/mL 12 ng/dL - ----



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an the second the



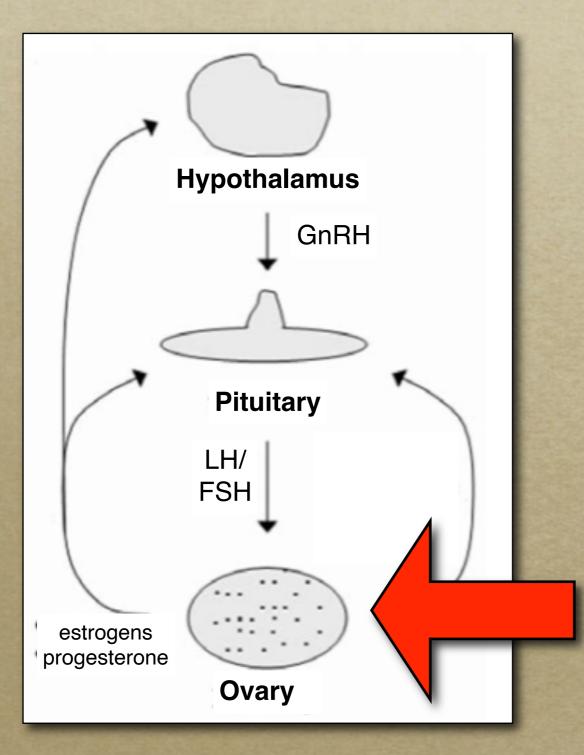
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 Hypogonadism, hypergonadotropic



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an transfer to the

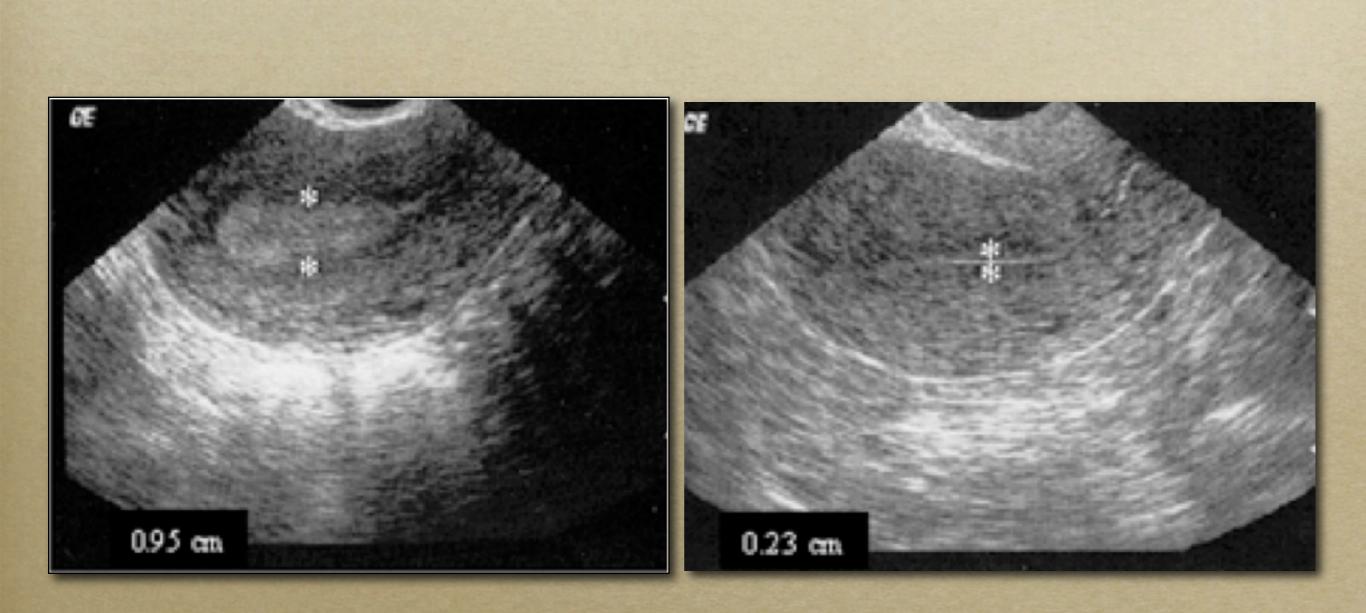


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 Hypogonadism, hypergonadotropic

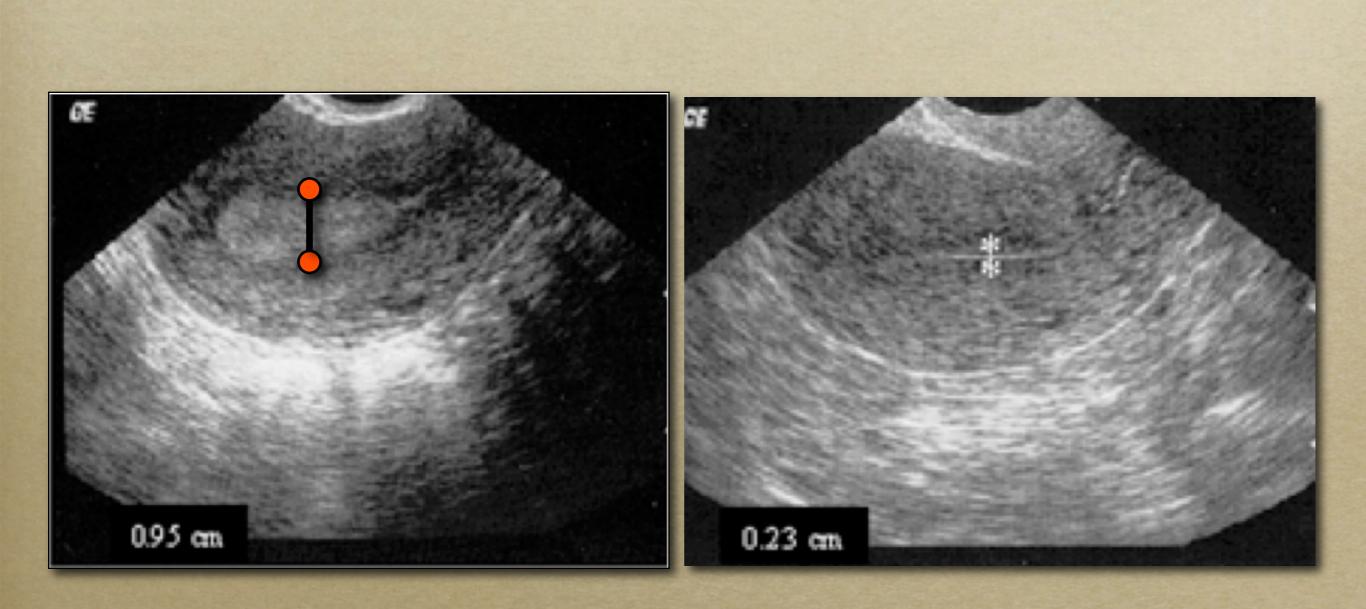
### **Uterine ultrasound**

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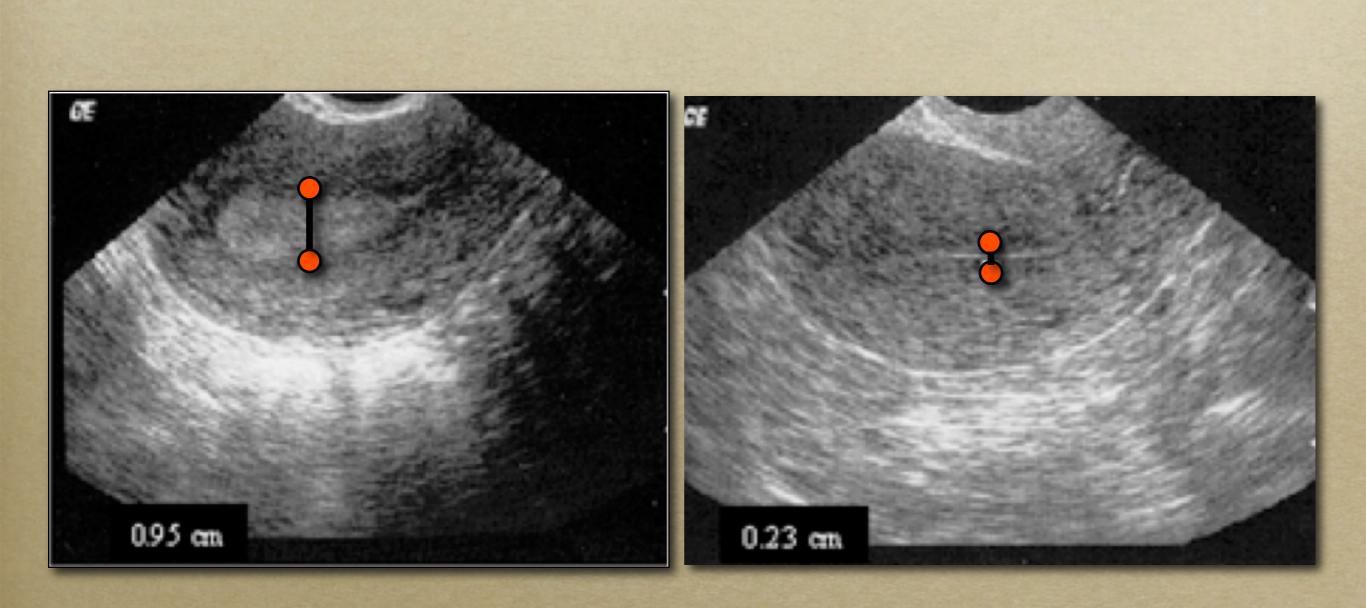
### **Uterine ultrasound**

the is the work to me the second the is at the second with the second with the second of the second



### **Uterine ultrasound**

the is the water man the constant their in the Low day to the water with the second and a party of



### **Progesterone challenge test**

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#### Use of progesterone

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- induction of menstrual cycle
  - indication of estrogen production
- on non-induction of menstrual cycle:
  - indication of estrogen absence

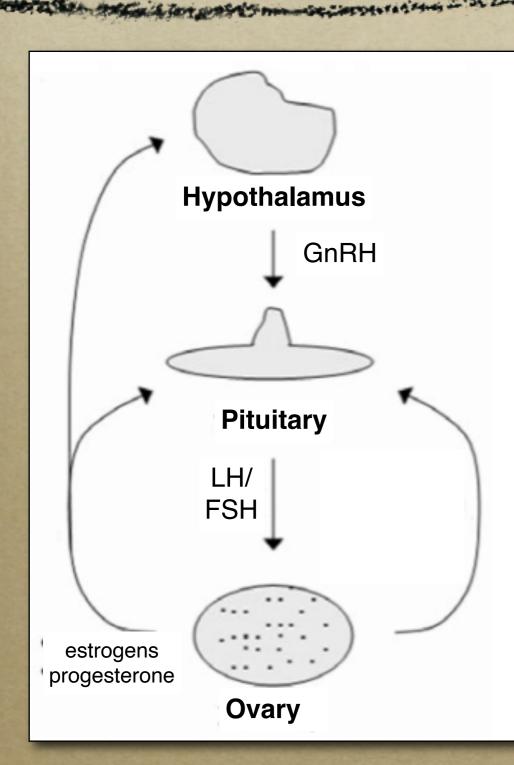


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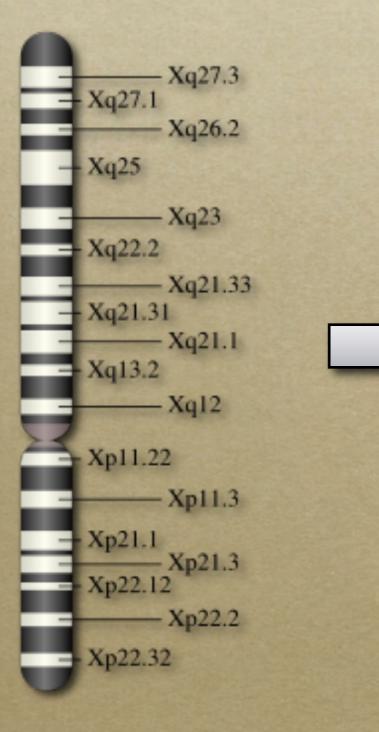
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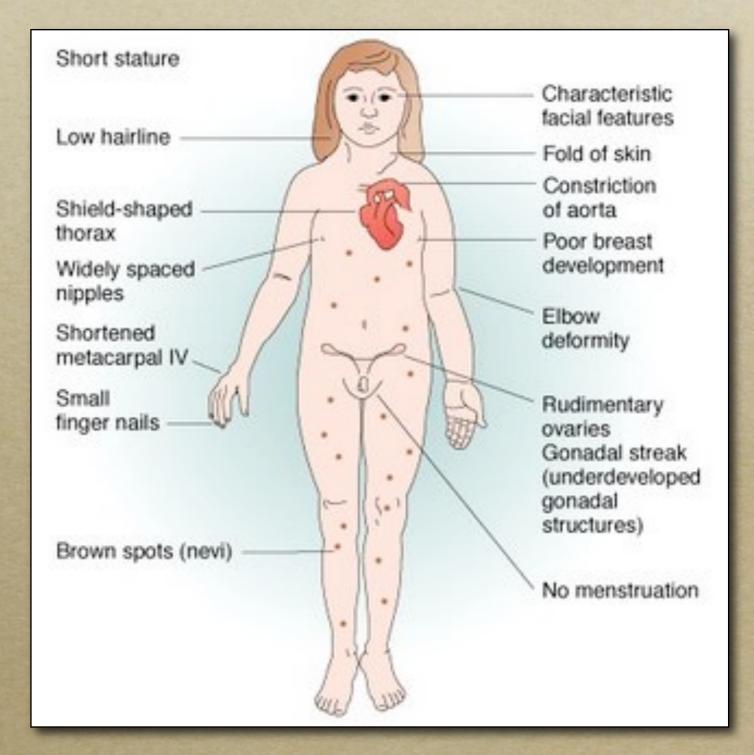


Turner syndrome Radiotherapy / Chemotherapy Premature ovarian failure

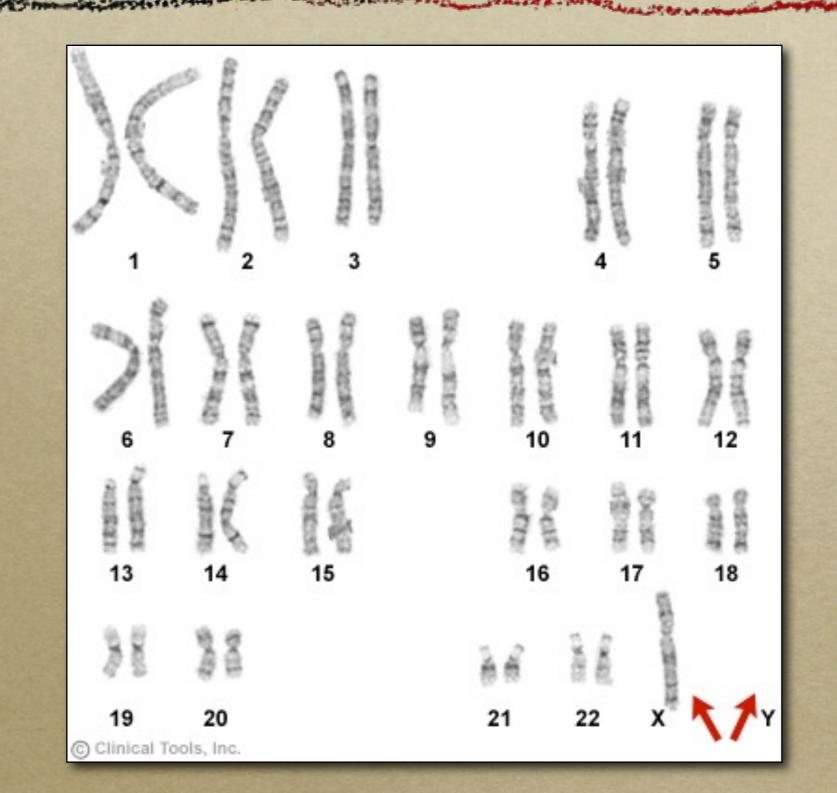
### **Turner syndrome**

Water a the state of the state









### Management

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Hormone replacement therapy (HRT)

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- Growth hormone (GH)
- 。 Egg donor

THE ALL TOT DUSS'S ME DE CORDENTAL MAN

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#### 。 Gymnast

Secondary amenorrhea

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#### 。 FSH

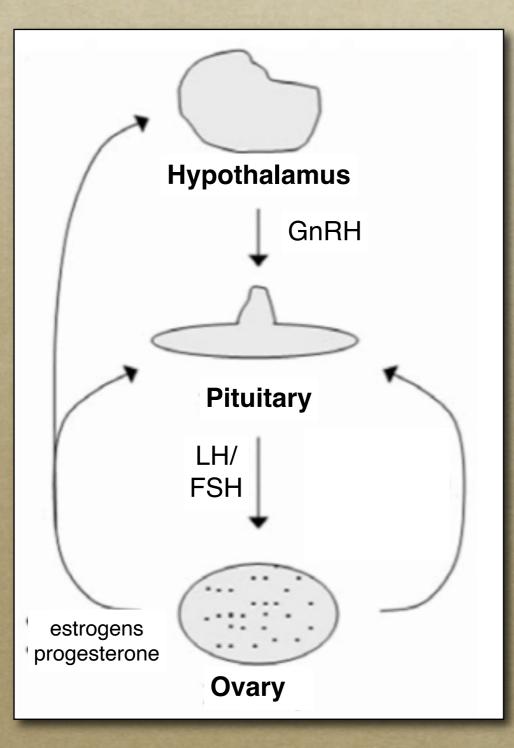
- 。 LH
- 。 Estradiol
- 。 Prolactin
- Testosterone

2 IU/L 3 IU/L 10 pg/mL 6 ng/mL 12 ng/dL - ----



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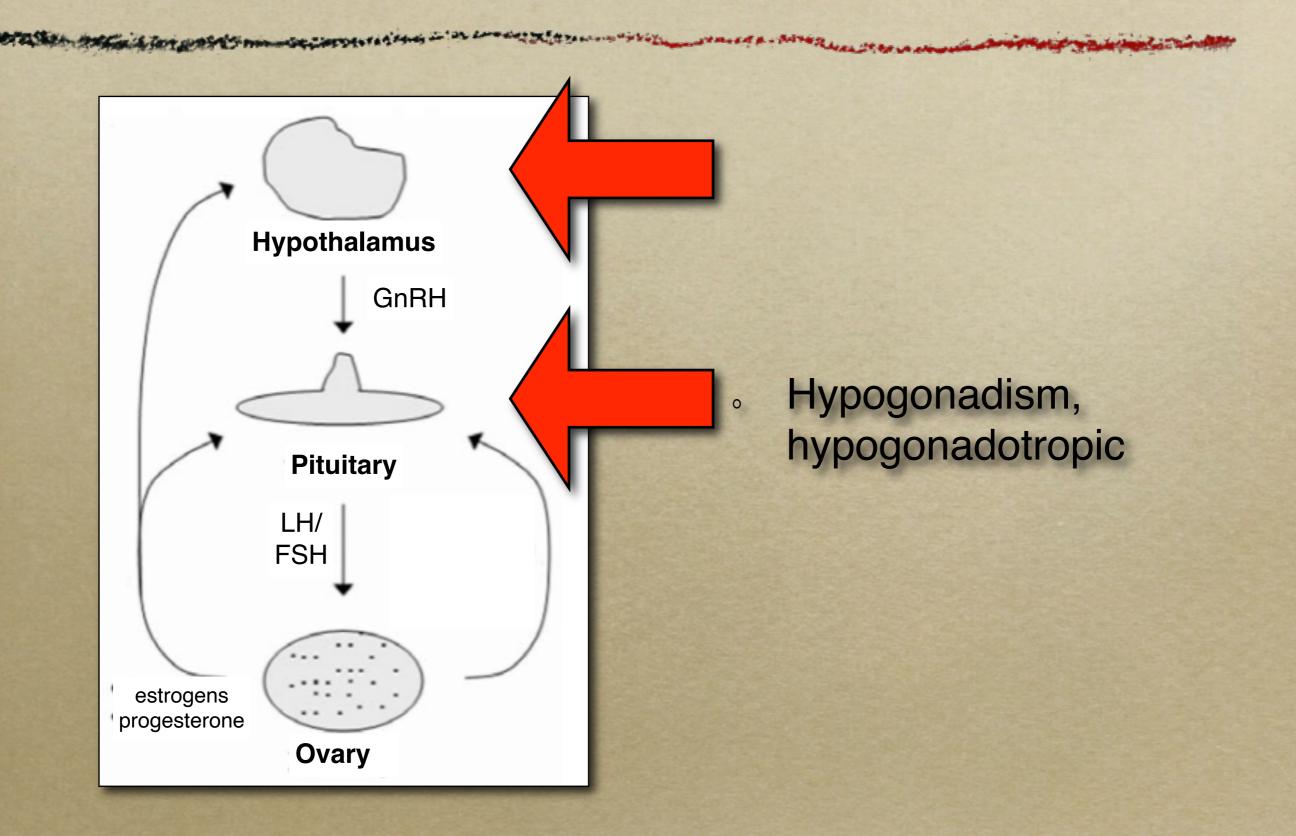
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 Hypogonadism, hypogonadotropic

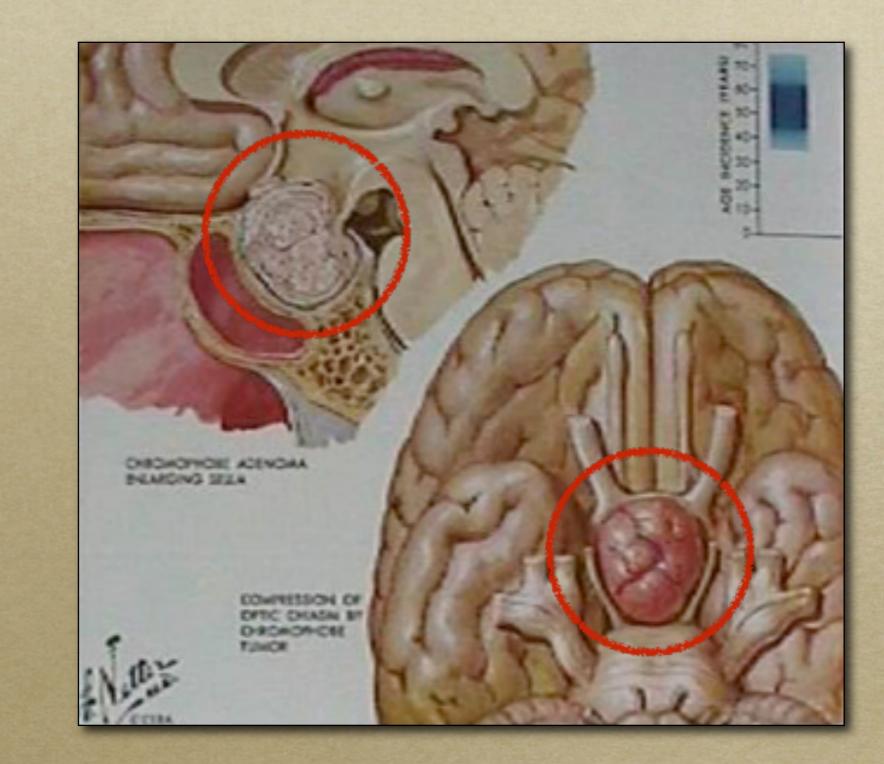




#### **Pituitary adenoma**

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Water a the state of the state



## **Additional investigations**

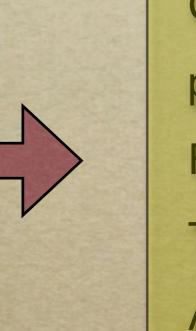
#### 。 GnRH test

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Anterior lobe evaluation

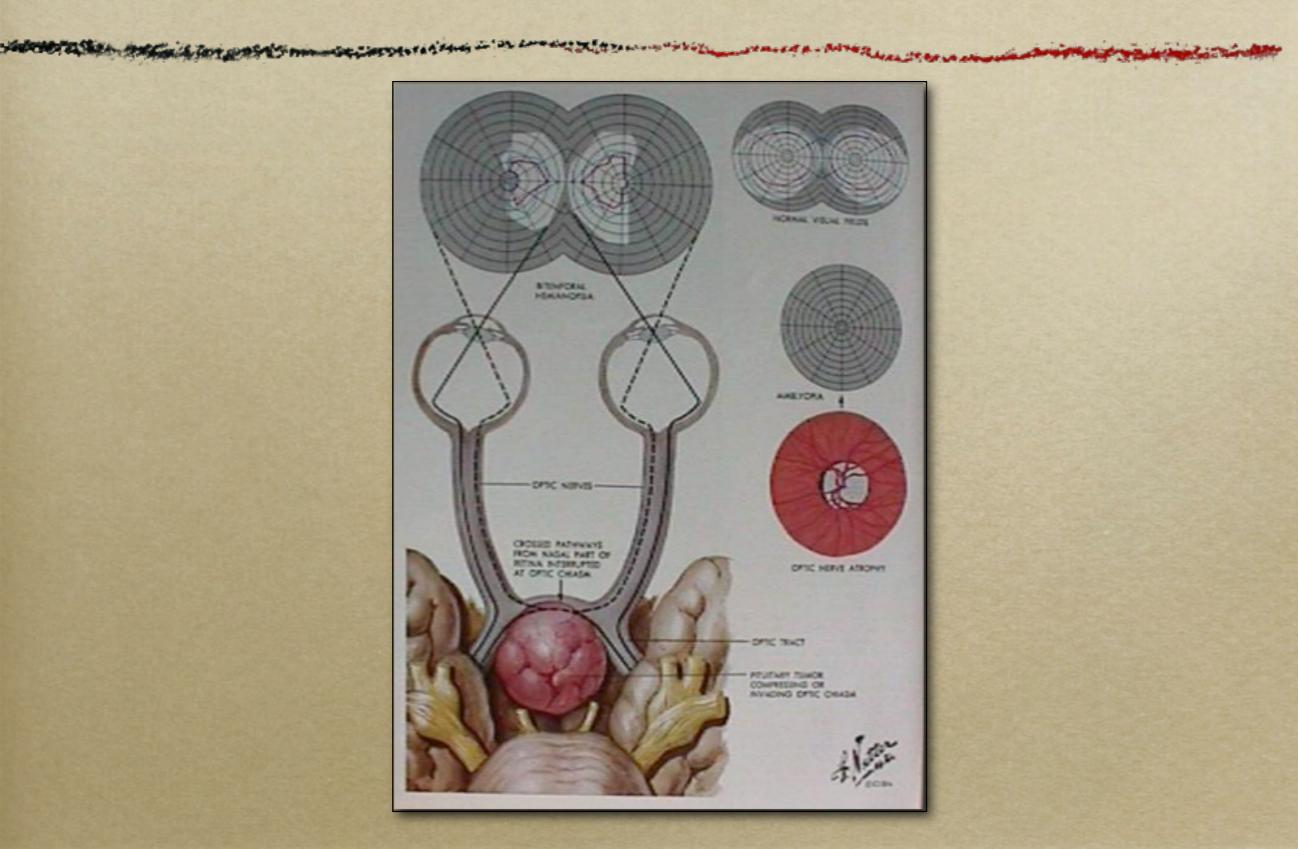
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• Pituitary MRI



GH, IGF-I prolactin FSH / LH TSH / fT<sub>4</sub> ACTH, F

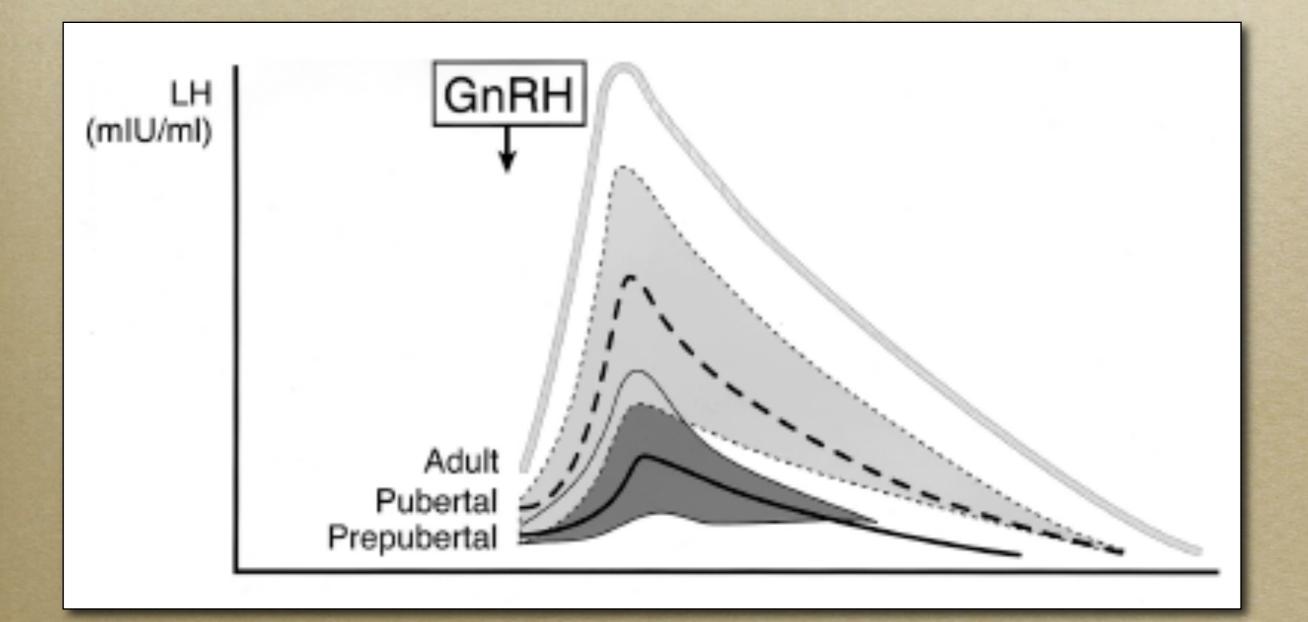
### **Pituitary anatomy**



### **Dynamic stimulation test**

- as Low dies the transmither without a fullying

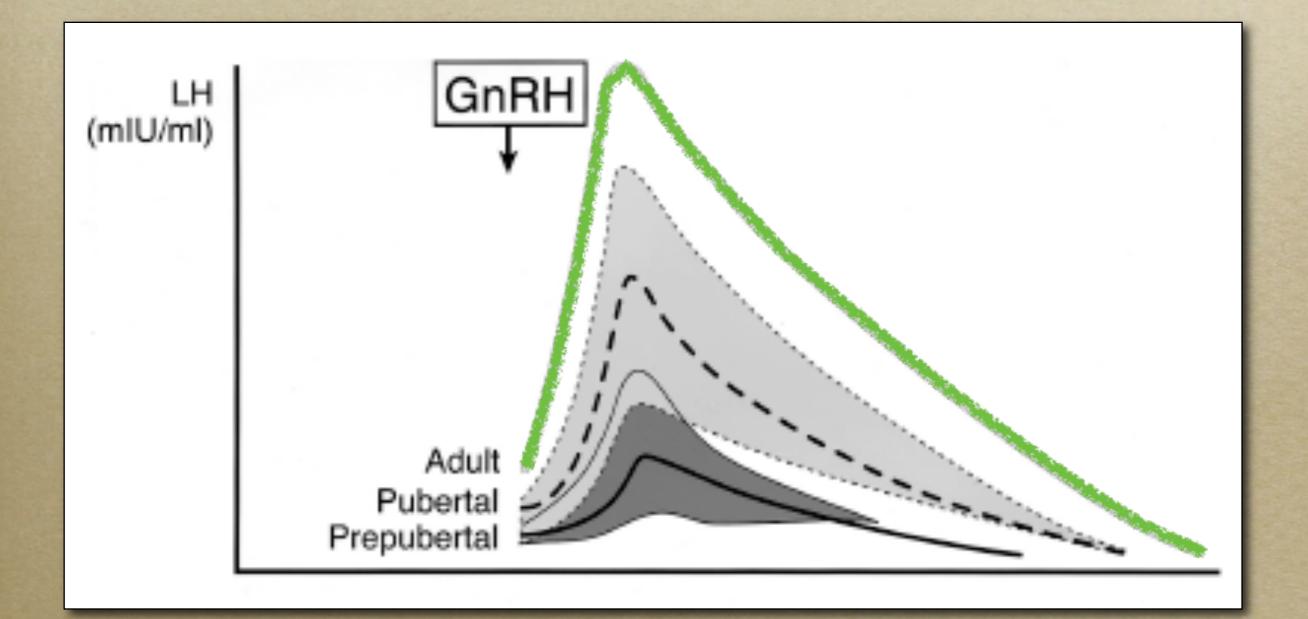
The tot was start in manufactor to 144



### **Dynamic stimulation test**

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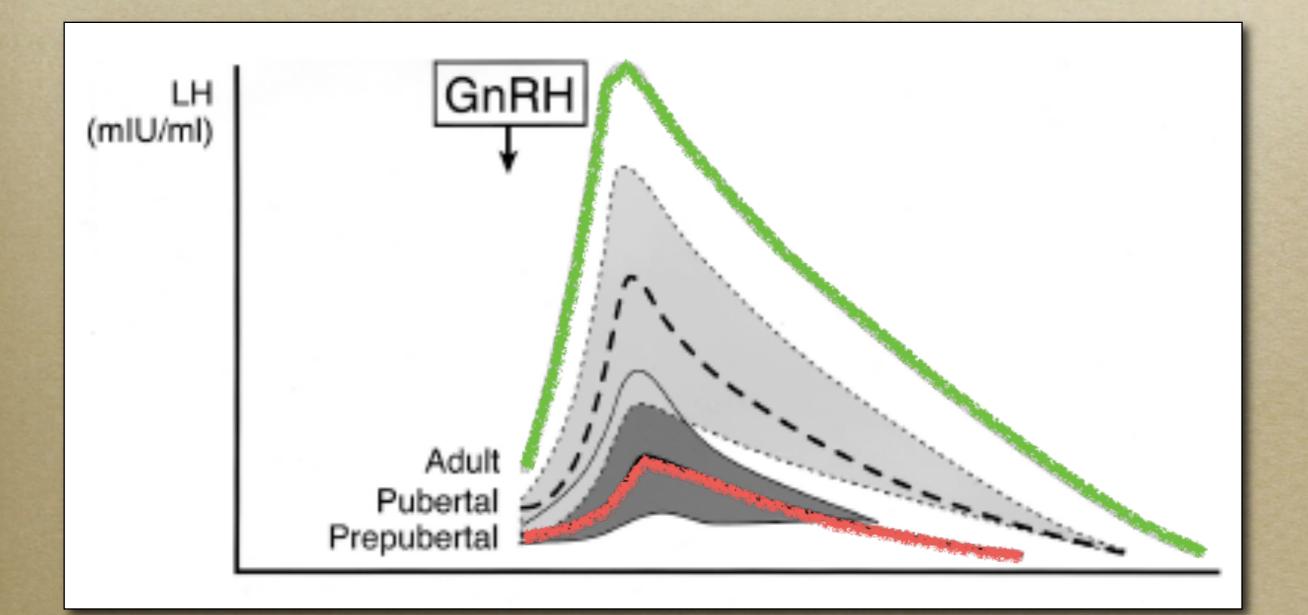
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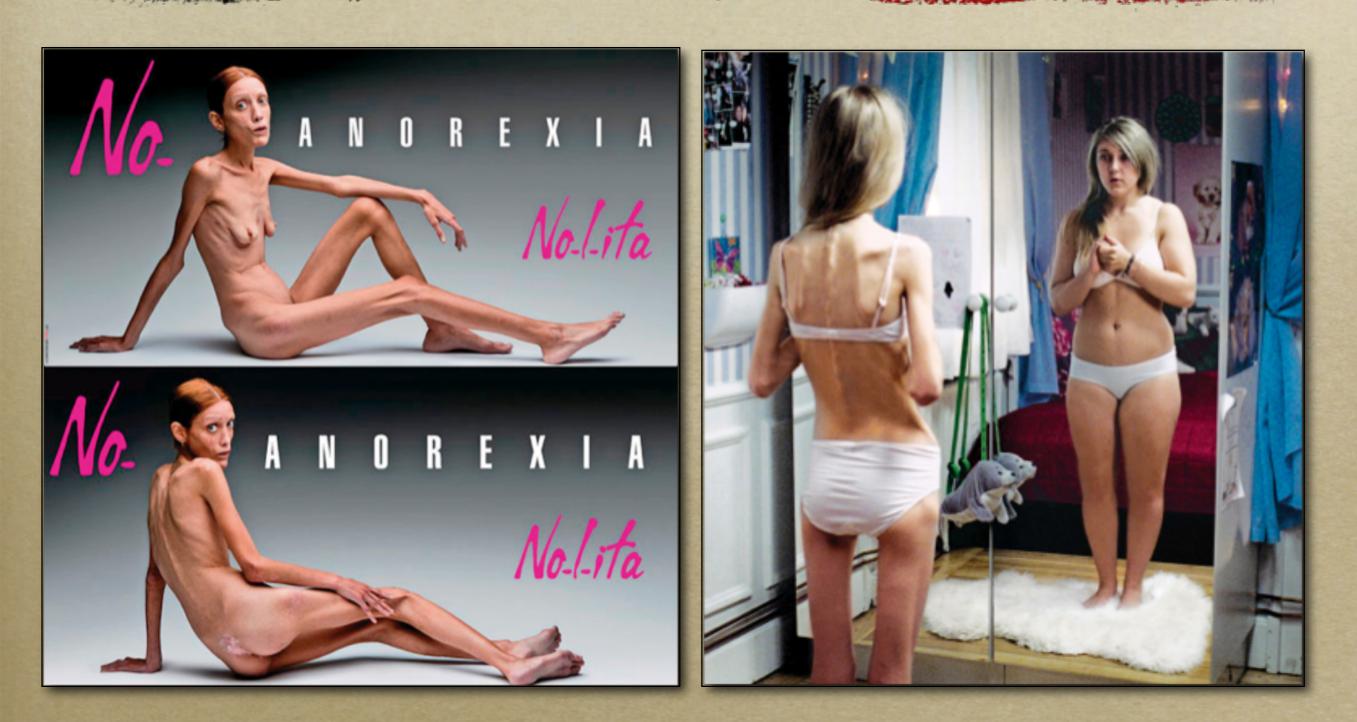
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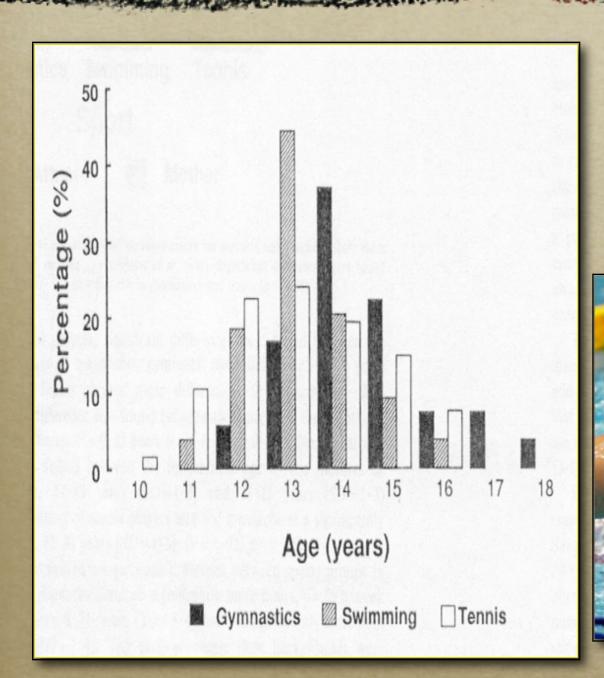
The Low dies the transmithe with a stand a - Adver

The A Ton substition we correct to the



## Anorexia nervosa







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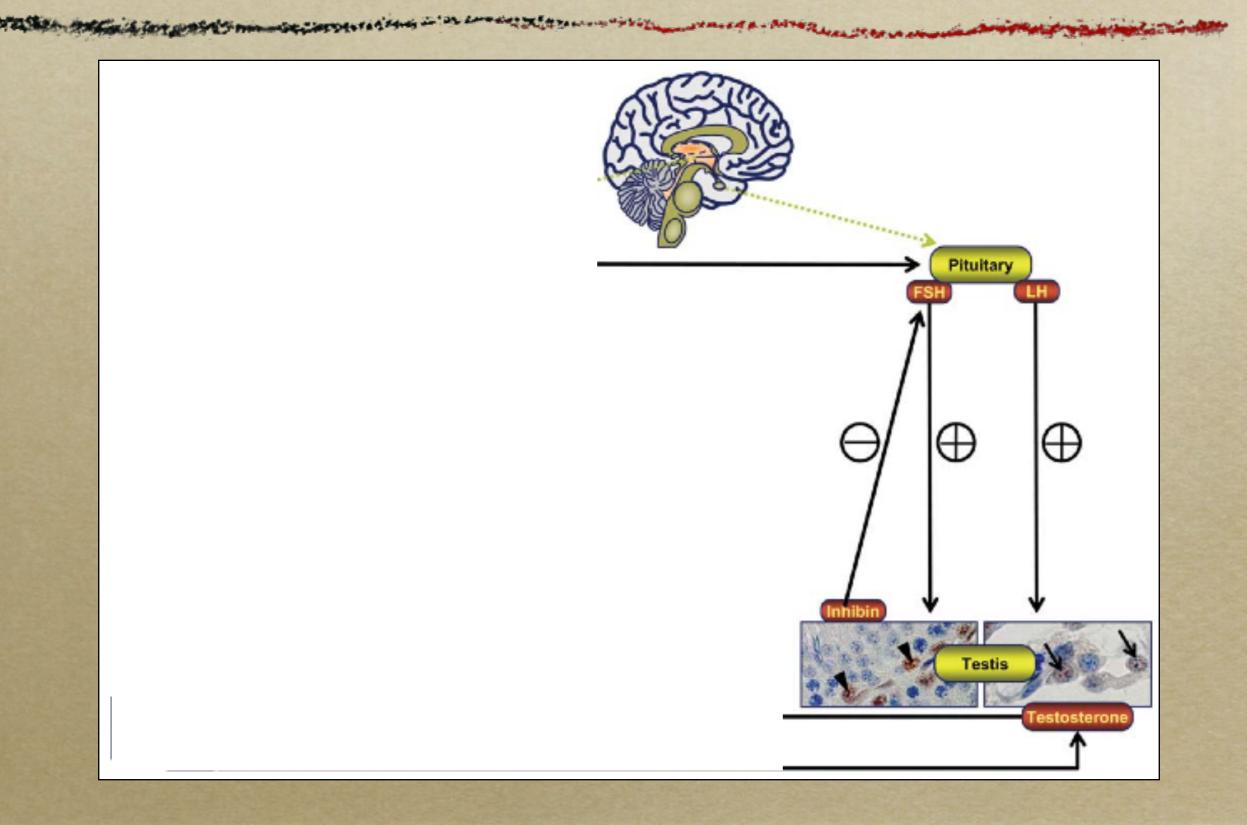
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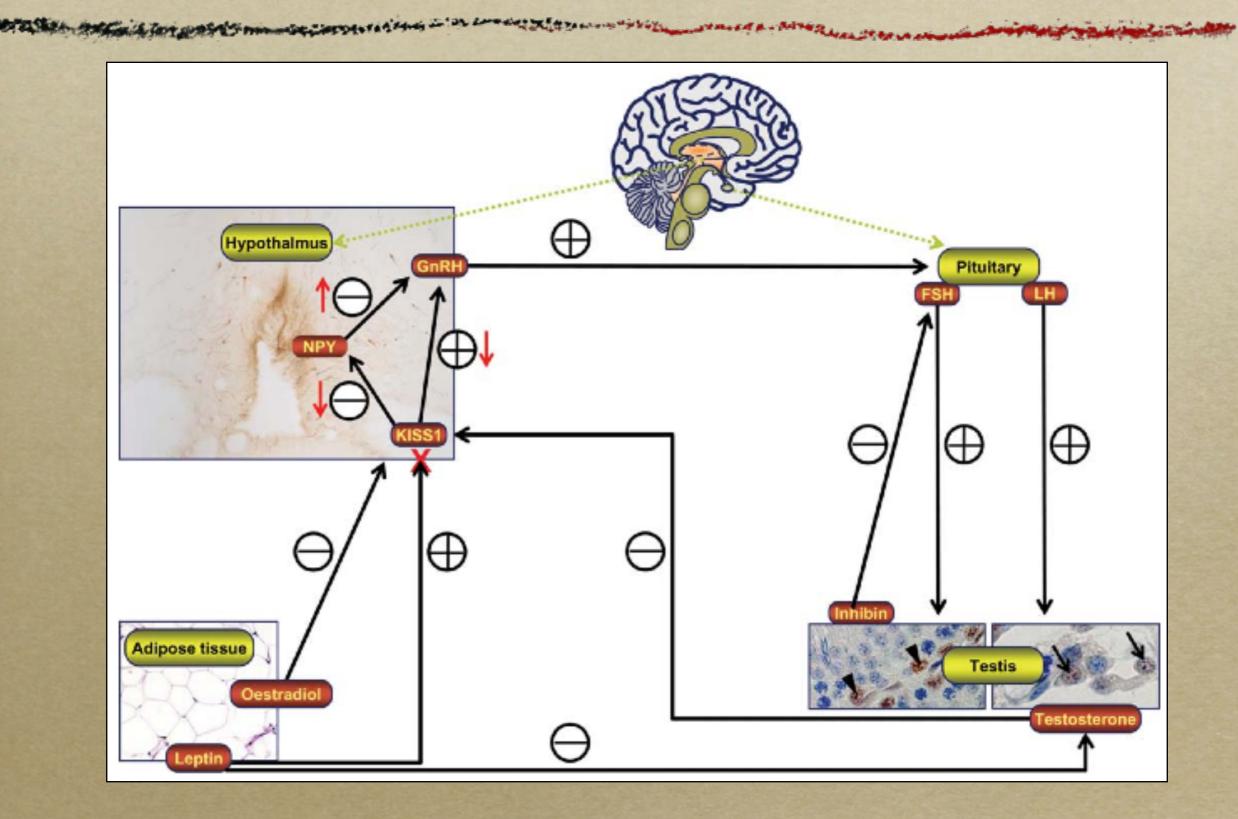
### "Athlete's triad"

Food intake disturbances

The set of the set

- Secondary amenorrhea
- Osteoporosis

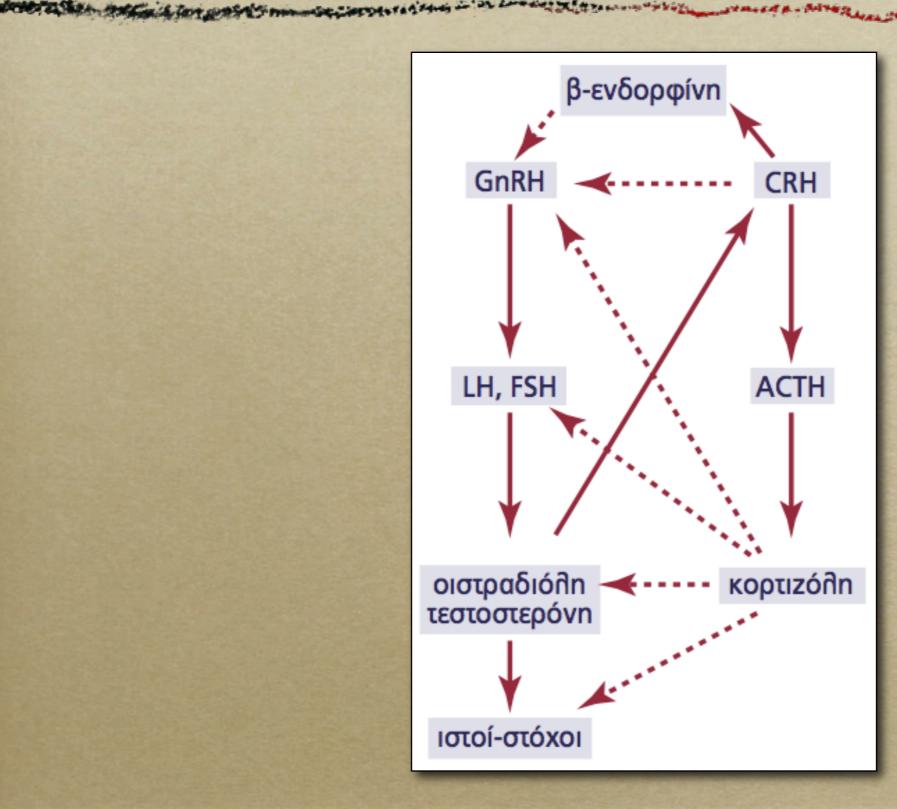




## **Stress and gonadal axis**

The state of the second

an Lore day by the



## Management

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Contraction of the local division of the

in the state of the

Puberty induction

The A los was the mounter the

- Hormone replacement
- Ovulation induction

- Lifestyle modifications
- Psychiatric support

## Structure

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- ----

Secondary amenorrhea

the second to a second to an a second to the second to the second to be the second to be the second to the second

。 Galactorrhea

## **Clinical picture**

and the second of the second of the

。 Galactorrhea, induced, bilateral

The second for and the ment of the second to the second to

Normal visual fields

## Laboratory investigation

The second for watch the ment of the second the the second the the second the

- 。 FSH
- 。 LH
- 。 Estradiol
- 。 Prolactin
- Testosterone

2 IU/L 3 IU/L 10 pg/mL 70 ng/mL 12 ng/dL - ----

## Hyperprolactinemia

### Φυσιοπονικές καταστάσεις

Water a the state of the second of the secon

+ obioino inco nacaocaocio			
παραγωγική φάση	(12)		
εκκριτική φάση	(12)		
εμμηνόπαυση	(28)		
únvos	(10)		
πρώτο τρίμηνο εγκυμοσύνηs	(30)		
δεύτερο τρίμηνο εγκυμοσύνης		(60)	
τρίτο τρίμηνο εγκυμοσύνηs		(48)	

and the second of the second o

### Παθολογία υπόφυσης

κενό τουρκικό εφίππιο	(20)	
σύνδρομο ποιλυκυστικών ωοθηκών	(14)	
νευρογενής ανορεξία	(12)	
πρώιμη εμμηνόπαυση	(11)	
γοναδική δυσγενεσία	(4)	

### Λειτουργικές καταστάσεις

νεφρική ανεπάρκεια			(26)	
υποθυρεοειδισμός		(40)		

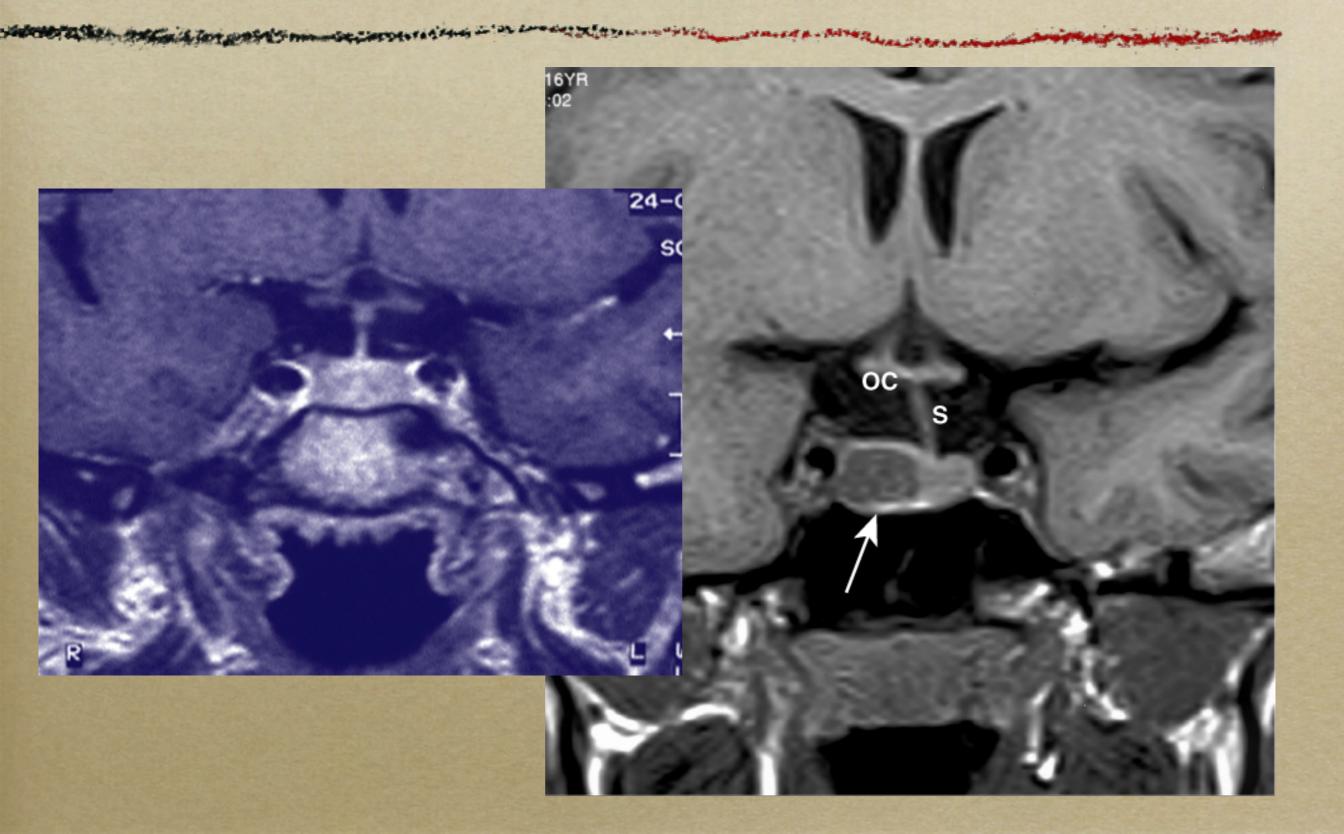
#### Φάρμακα

αποκλειστές υποδοχέων ντοπαμίνης		(16)	
αποκηειστές υποδοχέων ισταμίνης	(6)		

#### Όγκοι



# **Pituitary MRI**





winter stand & - Marine

The state of the second second

in the survey of the

Series of ovarian ultrasound

The and the work of the second stand the

。 Serum progesterone, during the midluteal phase

## **Ovarian ultrasound**

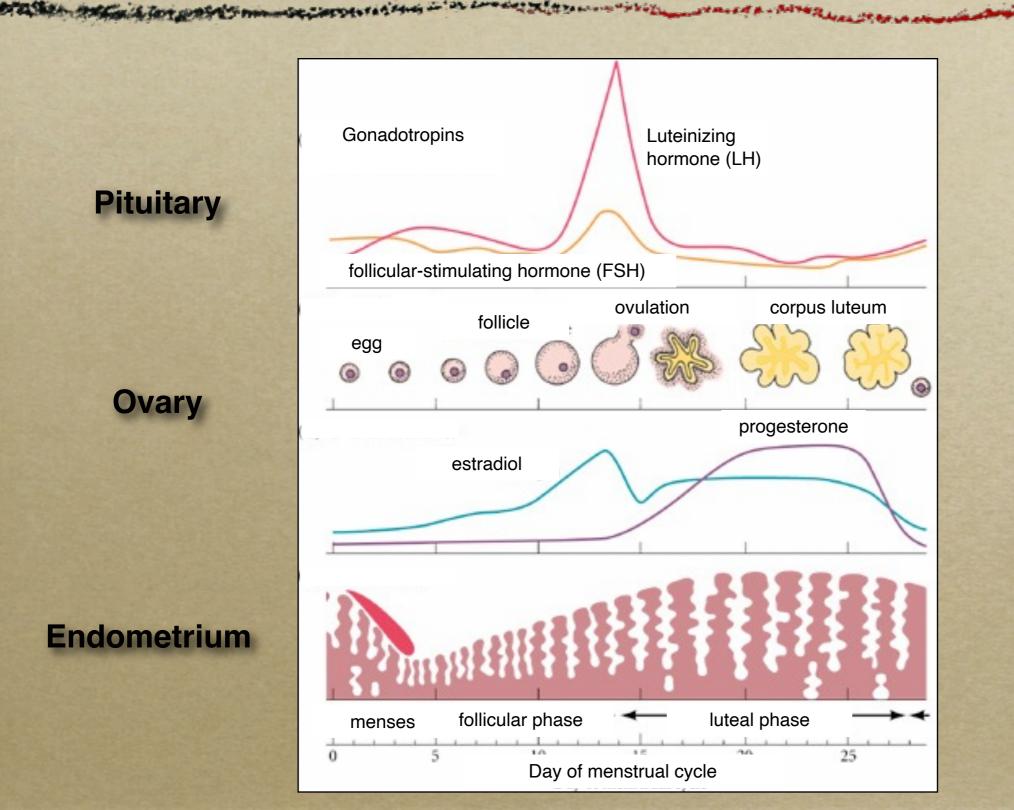
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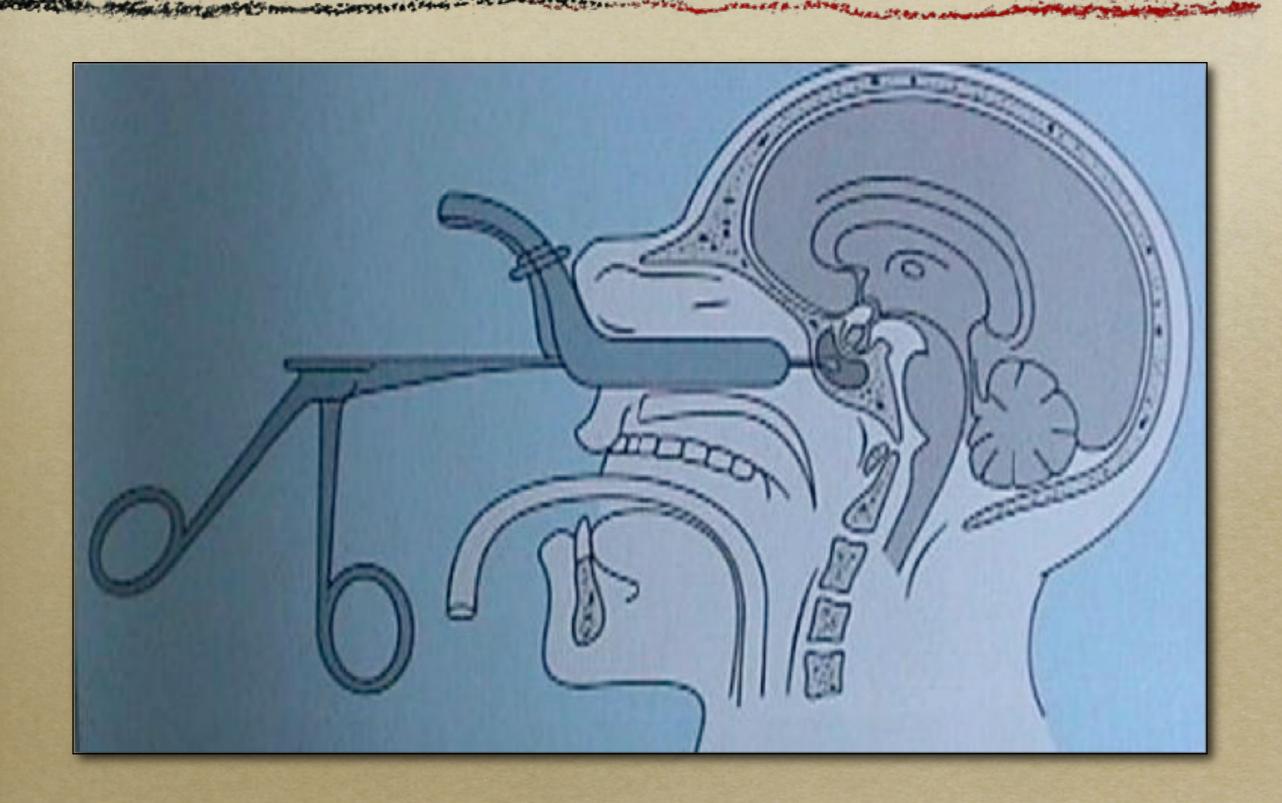
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## **Conservative management**

- Thyroxine replacement therapy, in case of hypothyroidism
- Drug discontinuation or dopamine agonist therapy, in case of drug-induced hyperprolactinemia
- Dopamine agonist therapy, in case of idiopathic hyperprolactinemia or prolactinoma

## Surgical management



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and the stand a diver

Contractor and and and

### 。 Oligomenorrhea

The last was a for an and the second and the second

- 5 to 6 menstrual episodes per year
- 。 Hirsutism, acne

## **Clinical picture**

Rocking + A Bank & Harris

in the Low dist of the year

。 Hirsutism

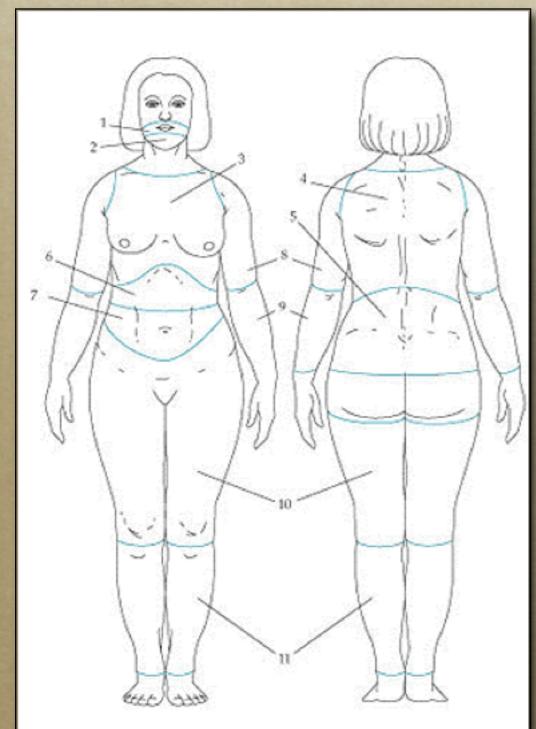
The store was 5 mm

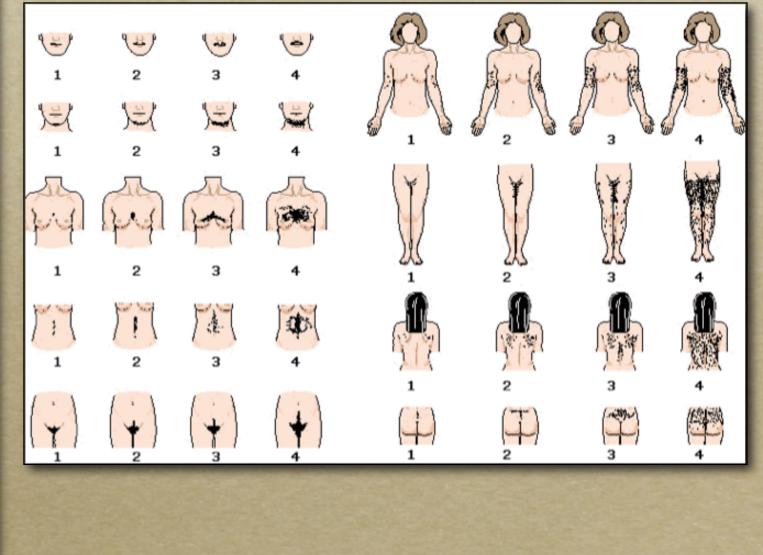
- 。 face, midline
- Obesity

0

- 。height: 1,64 m
- 。 weight: 85 kg
- body mass index: 31.6 kg/m<sup>2</sup>

## Ferriman – Gallwey index





## Laboratory investigation

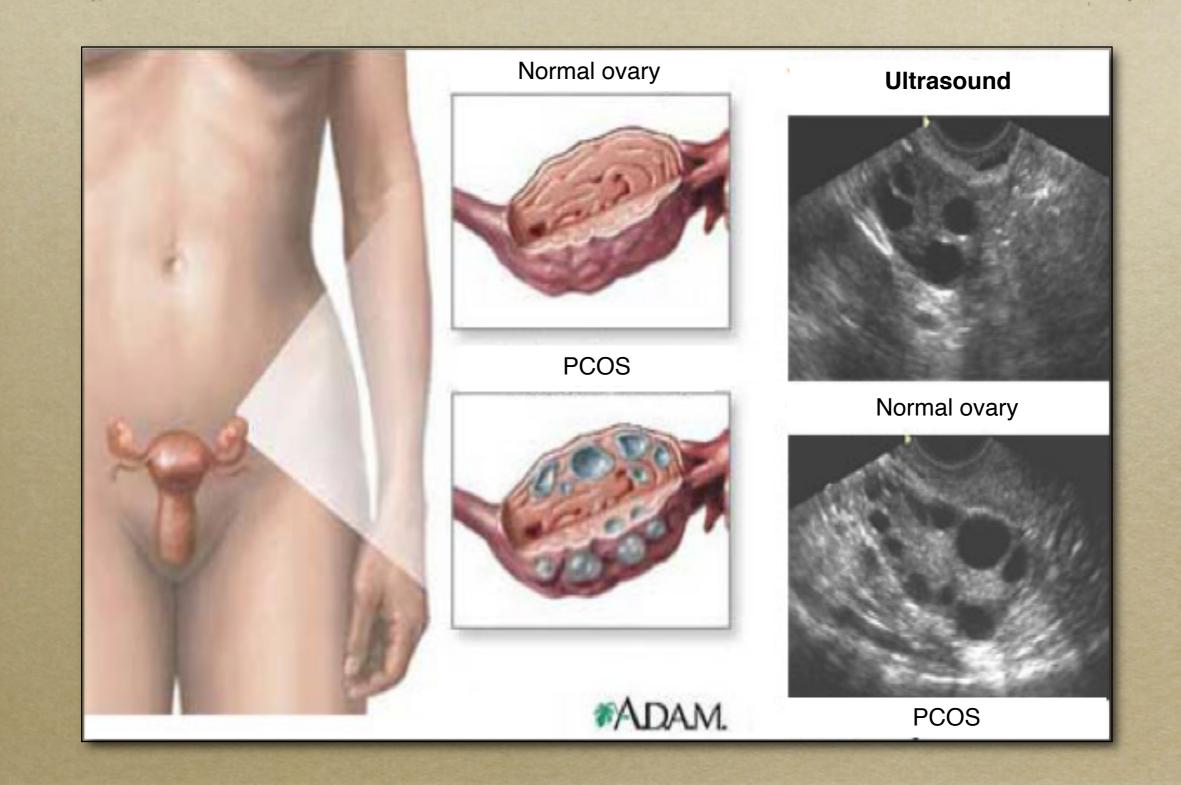
The second for which the second of the secon

- 。 FSH
- 。 LH
- 。 Estradiol
- 。 Prolactin
- Testosterone

3 IU/L 11 IU/L 80 pg/mL 25 ng/mL 90 ng/dL - ----

## Laboratory investigation

Caller and the tor work the men we construct the second the transmitter was a faired



## **Metabolic syndrome**

and the stand of the stand

Contraction of the second

- Diabetes mellitus
- Arterial hypertension
- 。 Dyslipidemia

The store was 5m

• Obesity, central type

Cardiovascular disease

## Management

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in the state of the

- Lifestyle modifications
- Progesterone
- Metformin

the store was some corper

- Oral contraceptives
- Anti-androgens

• Ovulation induction



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STRAID AND

- Menstrual disturbances are clinical pictures and not diagnoses
- A define diagnosis is always required
- The diagnostic approach must be focused but complete
- The therapeutic approach must be holistic

Α' Μαιευτική – Γυναικολογική Κλινική Αριστετέλειο Πανεπιστήμιο Θεσσαλονίκης Καθηγητής Γ.Φ. Γκριμπίζης

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- Π. Πουλάκος (ενδοκρινολόγος)
- Π. Ηλιάδου (ενδοκρινολόγος)
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- Ε. Κιντιράκη (ενδοκρινολόγος)
- Ι. Λίτσας (ενδοκρινολόγος)
- Γ. Κανάκης (ενδοκρινολόγος)
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- Ε. Τσίρου (ενδοκρινολόγος)
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- Δ. Σαββάκη (φυσική αγωγή)
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