

# Hypophysis

## Anatomo – Functional Correlations

- Neuro-hypophysis
  - Antidiuretic Hormone
  - Oxytocin
- Adeno-hypophysis
  - GH
  - Prolactin
  - ACTH
  - TSH
  - LH / FSH / ICSH
  - MSH
- Pars intermedia

**Tabella 21.2** - Ormoni dell'asse ipotalamo-ipofisi-ghiandola bersaglio

<b>Ipotalamo</b>	<b>Ipofisi</b>	<b>Ghiandola bersaglio</b>	<b>Ormone inibitore periferico</b>
CRH	ACTH	Surrenali	Corticosteroidi
TRH	TSH	Tiroide	T <sub>3</sub> , T <sub>4</sub>
GHRH	Ormone della crescita	Varie	IGF-I
Somatostatina	Ormone della crescita	Varie	IGF-I
LHRH	LH	Gonadi	Estradiolo, testosterone
	FSH	Gonadi	Inibina, estradiolo, testosterone
Dopamina	Prolattina	Mammella	Sconosciuto

*CRH*, ormone di rilascio della corticotropina (ACTH); *GHRH*, ormone di rilascio dell'ormone della crescita; *IGF-I*, fattore di crescita insulino-simile I; *LHRH*, ormone di rilascio dell'ormone luteinizzante (LH); *TRH*, ormone di rilascio dell'ormone tireotropo.

# Hypophysis

## Neoplasms

- Adenomas
  - ⇒ 10-15% neoplasms inside the skull
  - ⇒ 20-25% of general population
  - ⇒ Asymptomatic (often microadenomas)
  - ⇒ Sometimes in Verner-Morrison syndrome (MEN 1)

# Hypophysis

## Neoplasms

- Adenomas
  - ⇒ Grade 1 = microadenomas (< 1 cm.)
  - ⇒ Grade 2 = intra-sellar > 1 cm.
  - ⇒ Grade 3 = sella turcica erosion
  - ⇒ Grade 4 = extra-sellar

# Hypophysis

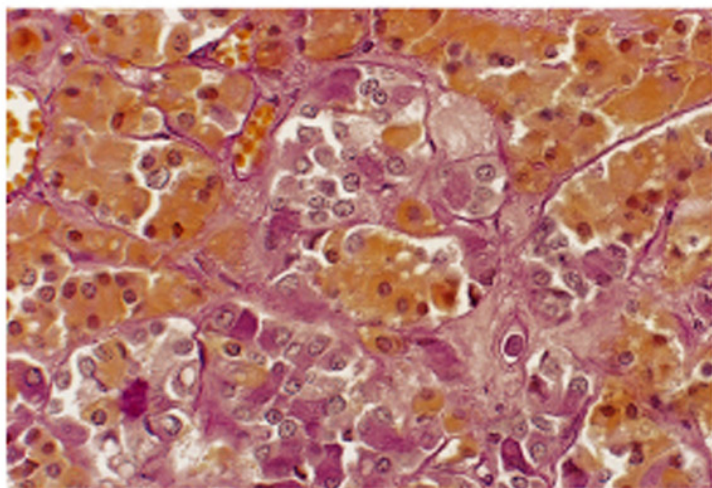
## Neoplasms

- Adenomas

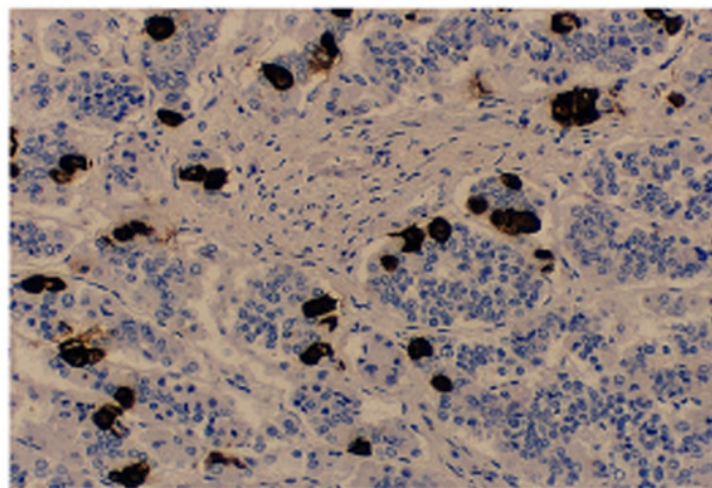
- ⇒ With acidophilic/chromophobe cells (PRL, GH)
- ⇒ With basophilic cells (TSH, FSH/LH)
- ⇒ With amphophilic cells (ACTH, MSH)



A



B



**Tabella 21.1** - Frequenza degli adenomi della ipofisi anteriore

<b>Tipo di cellule</b>	<b>Ormone</b>	<b>Frequenza (%)</b>
Lattotrope	Prolattina	26
Cellule nulle	Nessuno	17
Corticotrope	ACTH (corticotropina)	15
Somatotrope	Ormone della crescita	14
Pluriormonali	Diversi	13
Gonadotrope	FSH, LH	8
Oncocitoma	Nessuno	6
Tirotrope	TSH	1

# Hypophysis

## Adenomas

- **Mechanical signs due to compression**
  - **On hypophysis**
    - Deficit of FSH-LH, hypogonadism
    - Deficit of TSH, hypothyroidism
    - Deficit of ACTH, hyposurrealism
    - Deficit of GH, hypophyseal dwarfism
  - **On optic tracts**
    - Decreased perception of red
    - Bitemporal hemianopsia
    - Scotomas
  - **On cavernous sinuses**
    - Ophthalmoplegia
    - Ptosis of eyelid
  - **On hypothalamus**
    - Obesity
    - Diabetes insipidus
    - Sleep, thermoregulation, thirst/hunger disorders
  - **Hypertension inside the skull** (headache, mydriasis, papilledema)

# Hypophysis

## Adenomas

- **Hyperfunction syndromes**

- ⇒ **Prolactinoma (25%)**

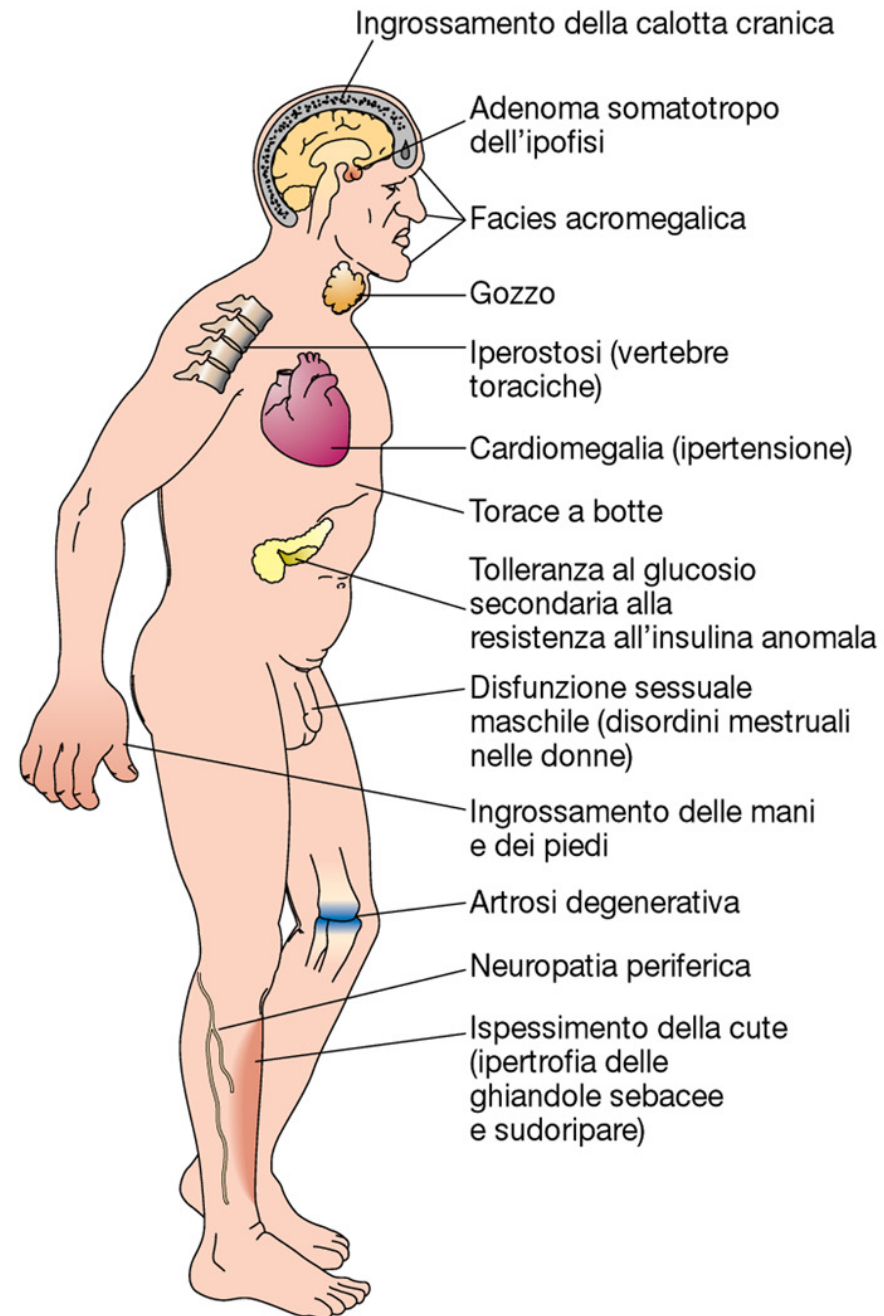
- **Amenorrhea-Galactorrhea Syndrome**
    - **Hypogonadism, impotence, sterility**

- ⇒ **ACTH (10%)**

- **Hypersurrealism (Cushing's disease)**
      - » **Hypertension, obesity, melanoderma**
      - » **Hypernatremia, hypokalemia**

- ⇒ **GH (10%)**

- **Hypophyseal gigantism**
      - » **Visceral and skeletal harmonic expansion**
    - **Acromegaly**
      - » **Appositional Hyperostosis** (splanchnocranium, vertebrae, hands and feet)
      - » **Splanchnomegaly** (macroglossia, cardiomegaly)



# Hypophysis

## Adenomas

- **Hyperfunction syndromes**

- ⇒ FSH/LH (10%)

- **Silent**

- **Hypogonadism, impotence, sterility**

- ⇒ TSH (1%)

- **Hyperthyroidism**

- » **Hypertension, tachycardia, insomnia**

- » **Excitability, slimming**

- ⇒ **Mixed and not-secreting (15%)**

- **Mass effect**

- » **Endocranic hypertension**

- **Poliendocrine syndromes**