

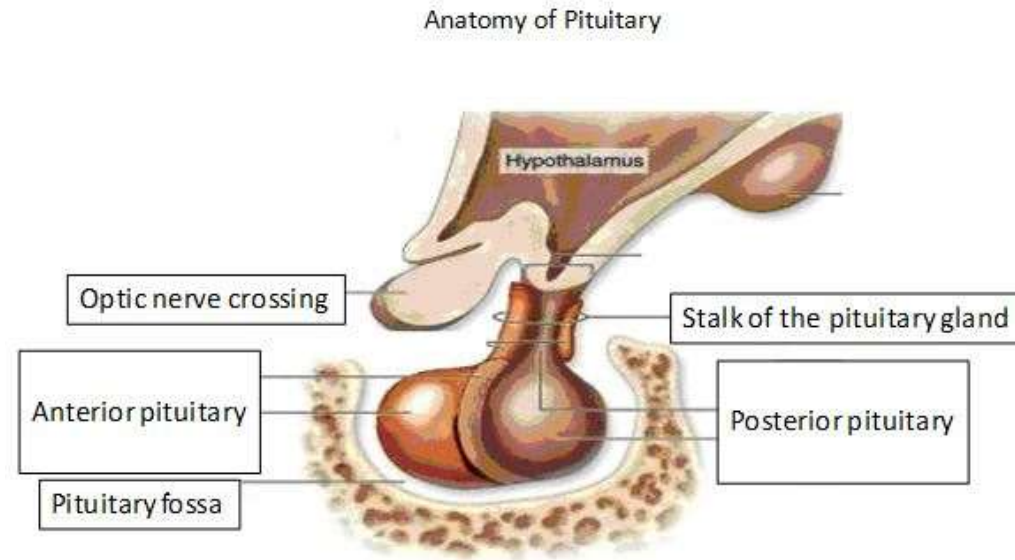
Cushing's Syndrome

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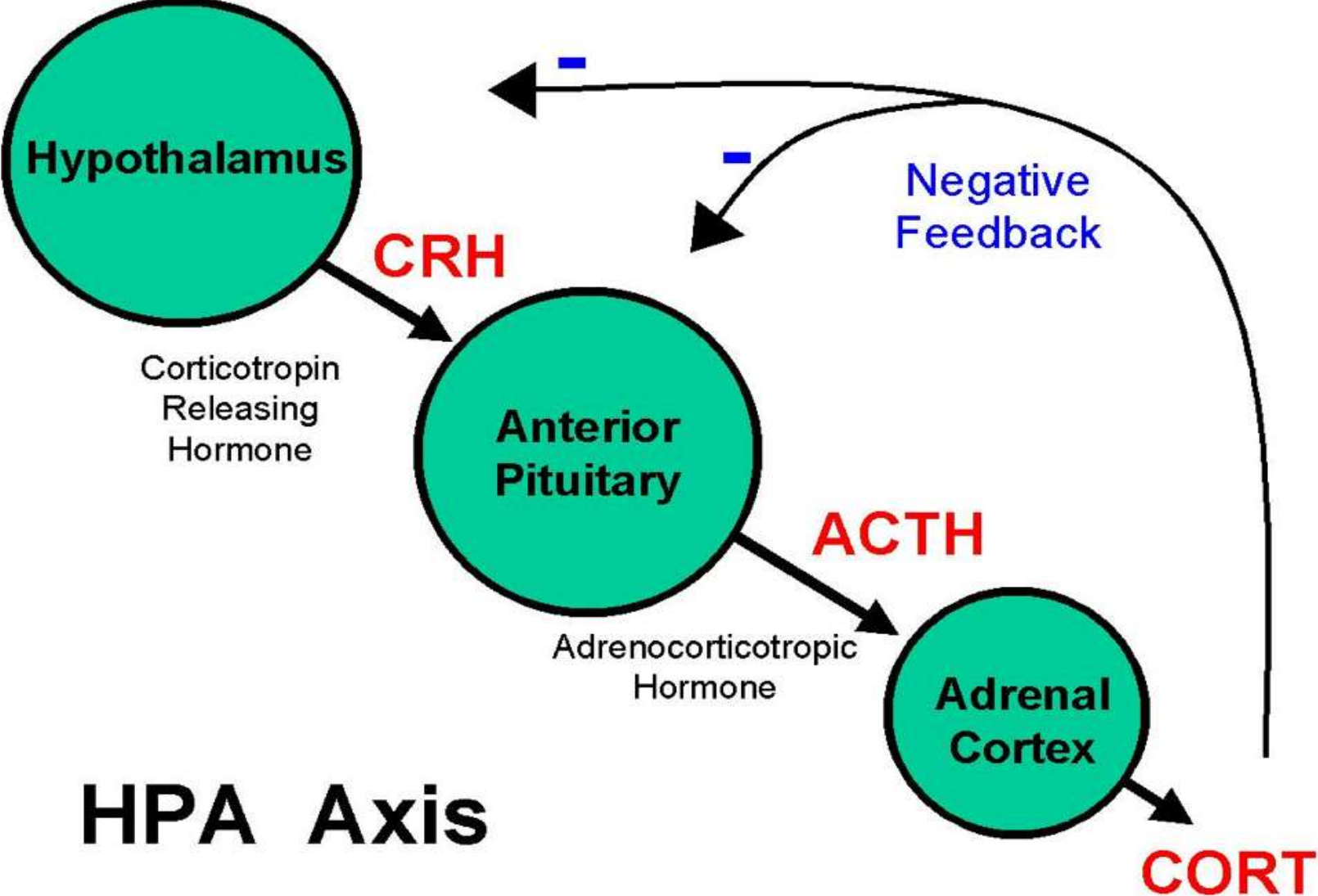
FKUMM

Pituitary gland

- Anterior and Posterior
- Anterior hormones (FLAT-GP):
 - F – FSH
 - L – LH
 - A – ACTH
 - T – TSH
 - G – GH
 - P – Prolactin
- Posterior hormones (OA) :
 - O – Oxytocin
 - A – ADH



Normal HPA Physiology



Disease vs. Syndrome

- Cushing's Disease is the result of a pituitary tumour secreting inappropriate ACTH
- Cushing's Syndrome causes the same symptoms, but is caused by overproduction of adrenal hormones. It encompasses all other forms of Cushing's

- Basically:
- Disease = increased cortisol from pituitary
- Syndrome = all other sources

etiology

Harvey Cushing in 1932

Endogenous Causes:

65% = pituitary

= Females 5:1 ratio and ages 25-40

25% = adrenals

10% = ectopic source (small cell lung ca), non-pituitary ACTH producing tumour

Exogenous Causes:

Iatrogenic Steroids (Asthma, RA, palliative)

Sign&Symptom

SWEDISH

S – Spinal tenderness

W – Weight gain

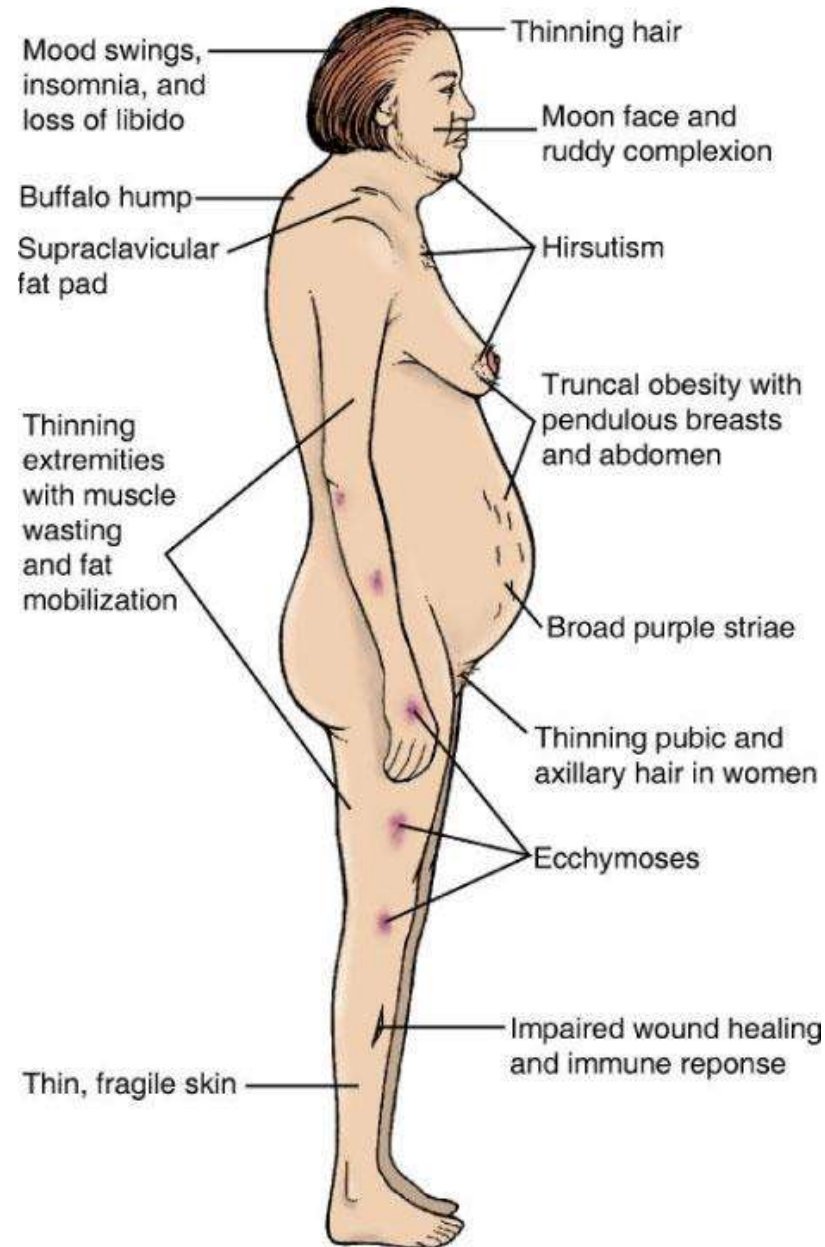
E – Easily bruise

D – Diabetes

I – Intercapsular fat pad

S – Striae

H – HTN



Step 1: Diagnosing Hypercortisolism

3 first line tests

1. Low Dose Dexamethasone Suppression Test
2. Late Night Salivary Cortisol
3. Urinary Cortisol

Dexamethasone Suppression Test

- Overnight Low dose = Baseline reading, Dex 1mg given at 11pm, measure cortisol at 8am
- If cortisol low ($<50\text{nmol/L}$) = normal
- If cortisol high ($>50\text{nmol/L}$) = investigate further – Cushings syndrome

Step 2: Isolate Source

ACTH level

- < 5 = ACTH Independent
- >20 = ACTH Dependent

Therapy

Adrenal Enzyme Inhibitors

Ketoconazole – first line

Aminoglutethimide

Metyrapone

Etomidate

Medical therapy is used to:

- stabilize patients pre-op / reduce perioperative complications.
- primary therapy when patient's refuse surgery
- surgery is not an option (metastatic malignancies)

Surgical Treatment

- Pituitary tumours:
 - trans-sphenoidal microsurgery. Radiation therapy may be used as an adjunct for patients who are not cured. Bilateral adrenalectomy may be necessary to control toxic cortisol levels.
- Adrenocortical tumours:
 - require surgical removal – can develop Nelsons Syndrome
- Removal of neoplastic tissue is indicated for ectopic ACTH production. Metastatic spread makes a surgical cure unlikely or impossible. Bilateral adrenalectomy is indicated if necessary to control toxic cortisol levels.

