CUSHING SYNDROME

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STRUCTURE

General Information

Cause

Physiology

Symptoms & Signs

Diagnosis

Treatment

GENERAL INFORMATION

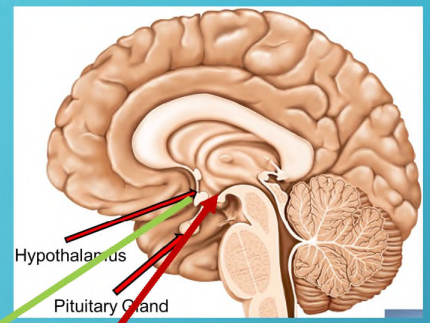
= Disorder, production of excessive cortisol (=stress hormone) over long period

- **Two types of Cushing syndrome:** Exo- & Endogenous
- Affects adults, aged 30 – 50
- Affects 3x more women than men
- 10-15 per million people affected p.a.

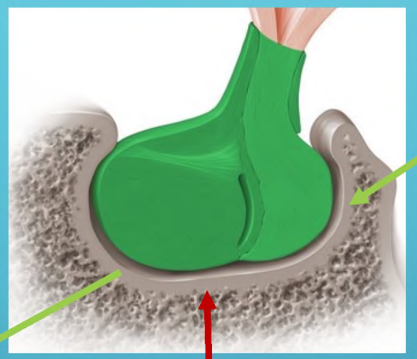
CAUSE

1. Iatrogenic (long-term treatment with steroids)
2. Over-secretion by adrenal glands (adrenal adenoma/carcinoma)
3. Over-stimulation of the adrenal glands (pituitary tumor)
4. Over-stimulation of the adrenal glands by an ectopic ACTH producing tumor

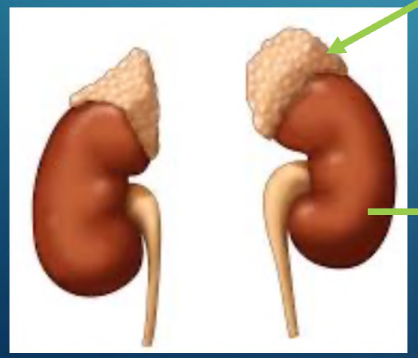
PHYSIOLOGY



CRH



ACTH



Glucocorticoids: Cortisol

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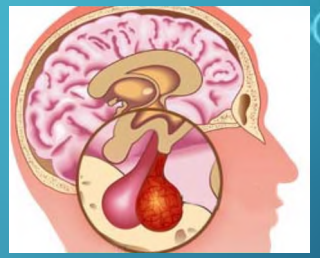
TWO TYPES

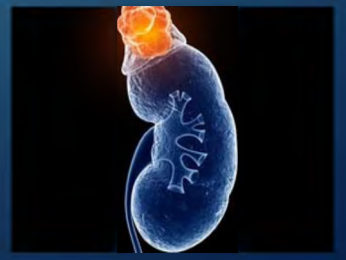


EXOGENOUS =OUTSIDE OF BODY

- **Most common cause:** Taking cortisol-like medications
- **Cortisol-like medications:** For treating inflammatory diseases; Suppressing immune system after organ transplantation
- Goes away after discontinuing the medication → **Temporary Disease**

ENDOGENOUS =INSIDE THE BODY

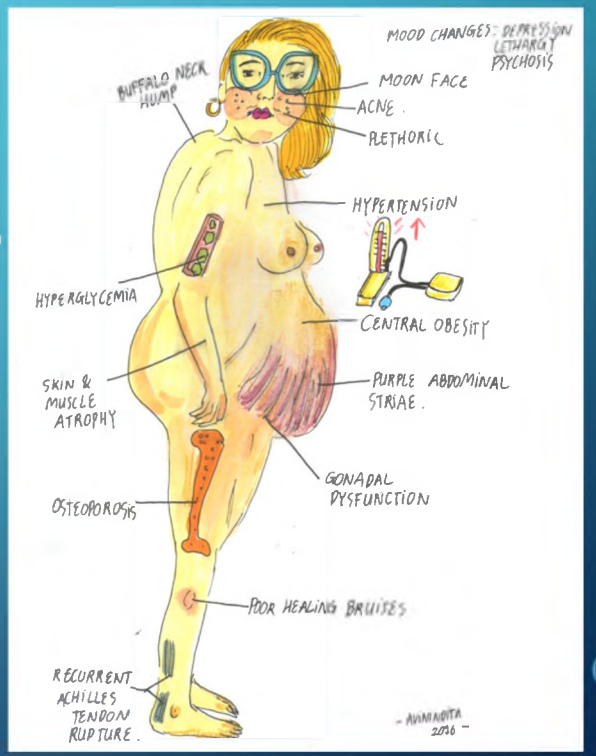
- **Uncommon cause:** Adrenal glands overproduction of cortisol
- **Caused by hormone-secreted tumors:** In adrenal glands or pituitary tumors. Tumors produce excessive ACTH
- Pituitary adenomas responsible for >70% of cases
- Does not go away if not treated



SYMPTOMS & SIGNS

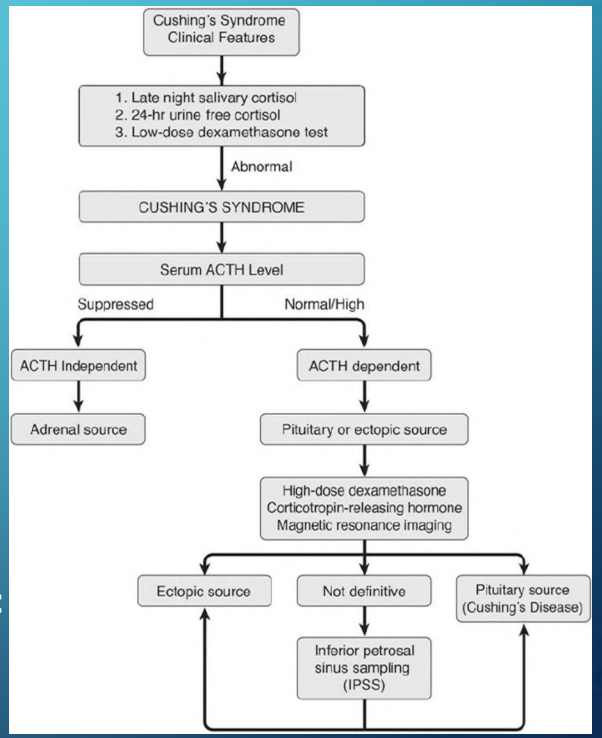
- **Symptoms vary depending on cortisol levels**
- Weight gain in face (Moon face) & between the shoulders (Buffalo hump)
- Stretch marks on the abdomen, thighs, breasts & arms
- Depression & anxiety
- Slow cut & insect bites healing

- **Signs in women:** Hirsutism; Irregular menstrual periods
- **Signs in men:** Decreased sex drive, Decreased fertility, Erectile dysfunction

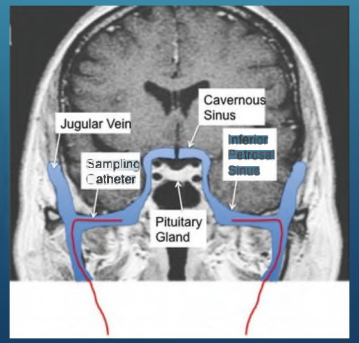


DIAGNOSIS

- Firstly, tests for **determination of excessive cortisol:**
- 24-hours urinary cortisol test; Levels >50-100µg
- Low dose of dexamethasone suppression test; High cortisol
- Late night salivary cortisol test; High cortisol → Positive

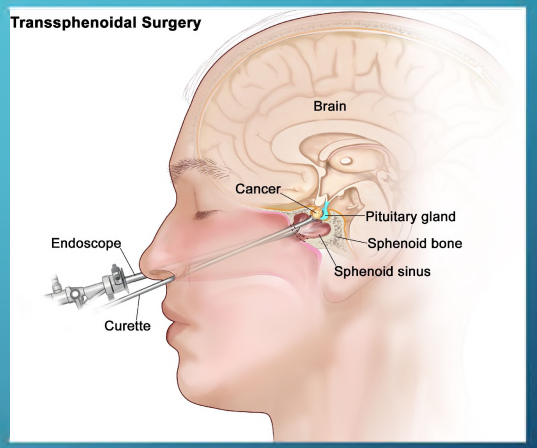


- Afterwards, tests for **determination of the source of excessive cortisol:**
- Magnetic resonance imaging (MRI); tumor 5mm
- Petrosal sinus sampling



TREATMENT

- Treatment depends on cause
- **Options:** surgery, radiation, chemotherapy, or cortisol-reducing medicines



- **Treatment for pituitary tumors:** Surgery; Success rate: 90%
- If surgery fails→ surgery can be repeated
- After removal of tumor, pituitary doesn't produce ACTH for a while→ Intake of cortisol medicine
- If surgery fails/ isn't possible: Radiation therapy

- **Treatment of adrenal tumors:** Surgery
- If both adrenal glands removed→ intake of medicine to replace cortisol

SOURCES

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