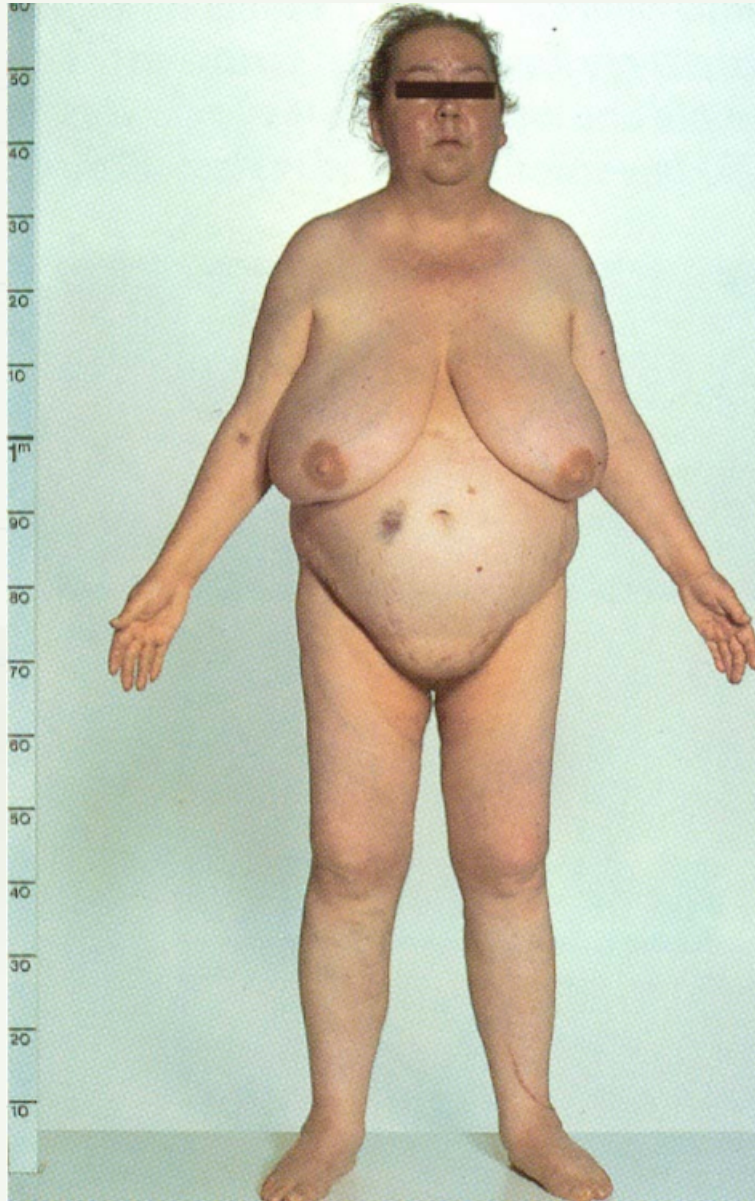


A hand holding a pen is visible on the left side of the image, positioned over a stack of papers. The background features a light green gradient with faint wireframe cubes and a circular graphic element. The text "Cushing's Syndrome" is prominently displayed in the center in a bold, blue font.

Cushing's Syndrome

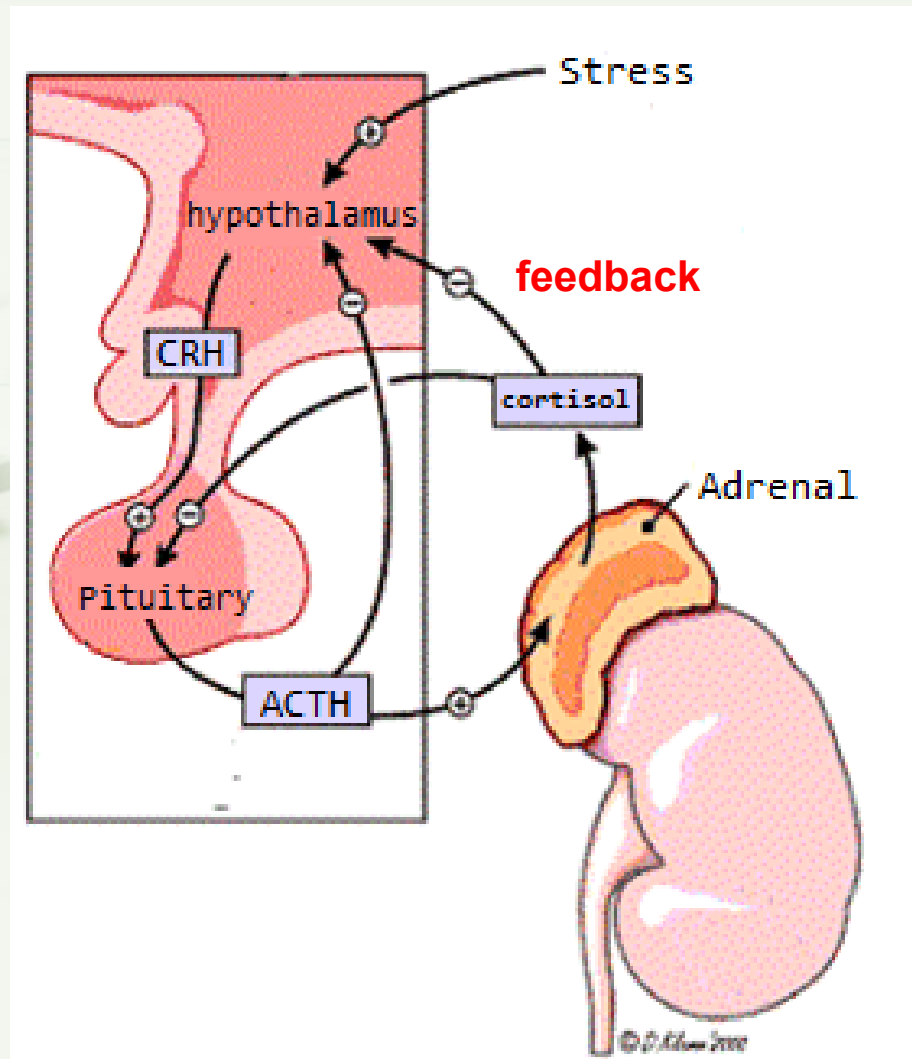




Definition

Cushing's syndrome is caused by chronic exposure to excess glucocorticoids (cortisol), characterized by **truncal obesity, Round face, Plethora, Hirsutism, Violaceous striae, Hypertension, etc.**

The hypothalamic-pituitary-adrenal axis



Cause of Cushing's syndrome

1. ACTH-dependent

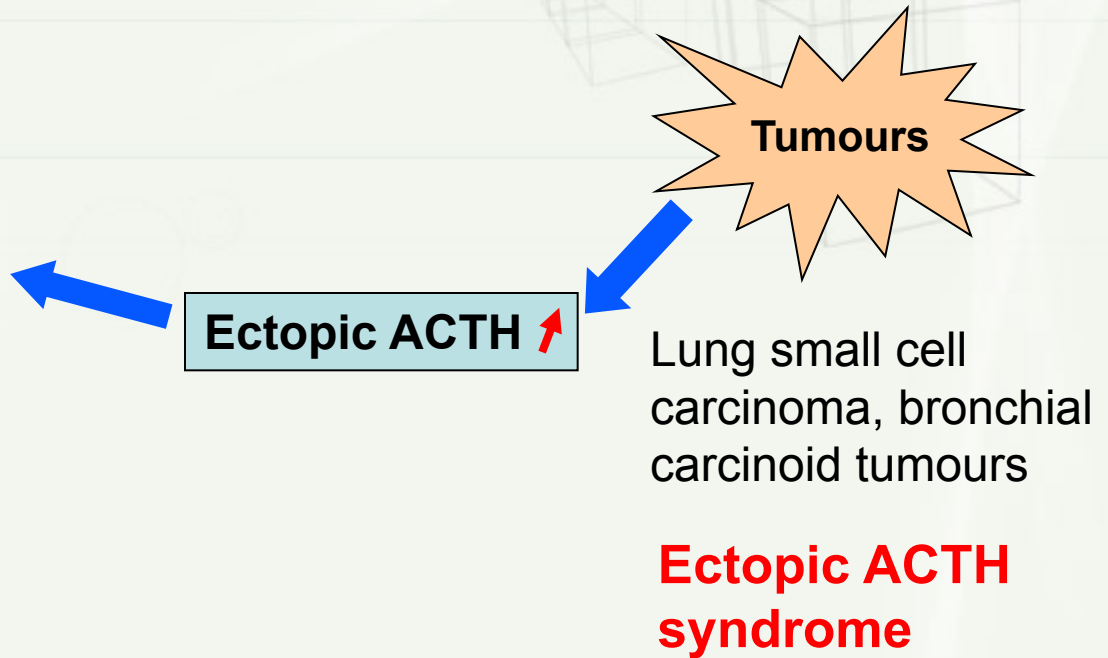
Pituitary ACTH ↑

- Pituitary microadenomas (<10mm) **Cushing's disease**
- Pituitary macroadenoma (>10mm) **disease**



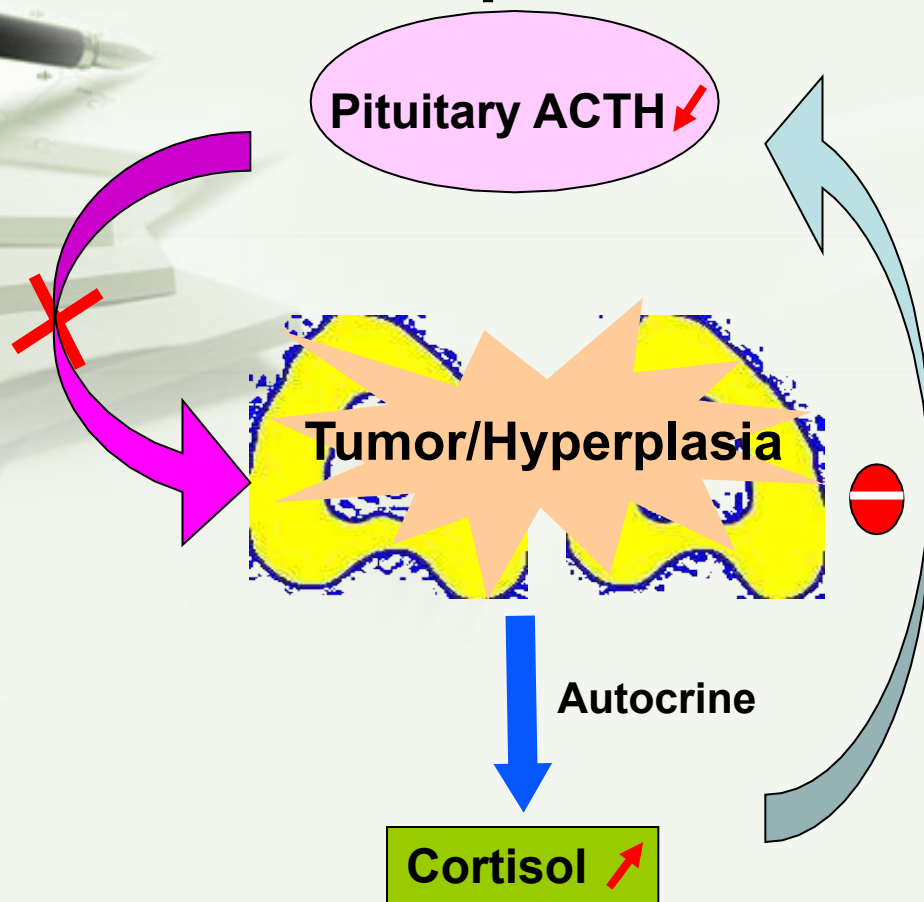
Adrenal hyperplasia

Cortisol ↑



Cause of Cushing's syndrome

2. ACTH-independent



- Adrenal *adenoma*
- Adrenal *carcinoma*

- Micronodular adrenal *hyperplasia* (<5mm)
- Macronodular adrenal *hyperplasia* (>5mm)

Epidemiology

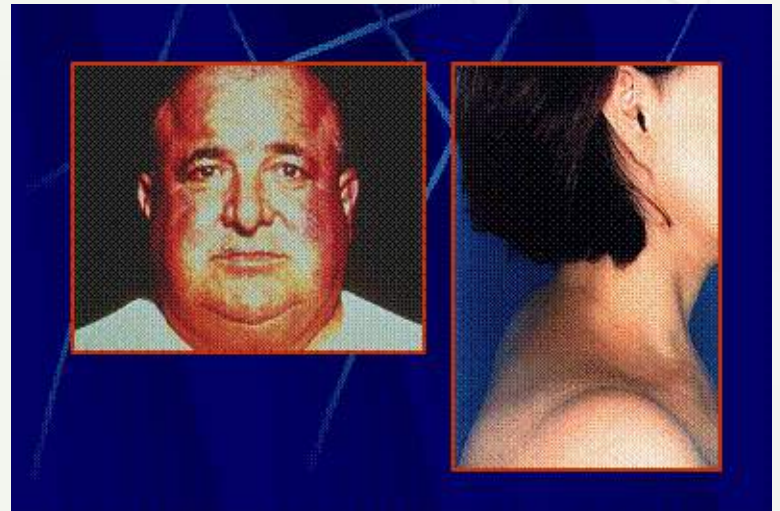
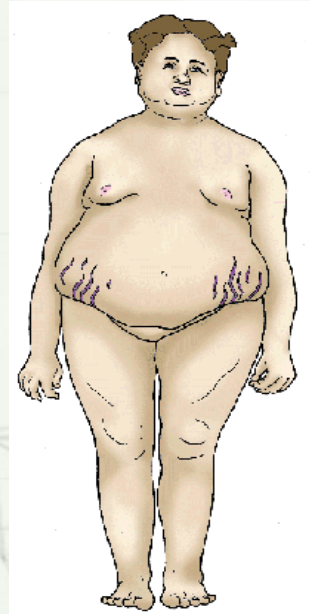
Cushing's disease: Women:men=4:1

Ectopic ACTH syndrome: Women:men=1:1

**Adrenocortical adenoma/carcinoma:
Women:men=4:1**

Pathophysiology and Clinical Signs

- Metabolism (Glucose, Lipid, Protein)
- Immune system
- Blood system
- Reproductive system
- Central nervous system



1. Typical habitus

**Peculiar distribution
of adipose tissue**

Truncal obesity

“Moon” face

“Buffalo” hump

Protein catabolism ↗

Violaceous striae

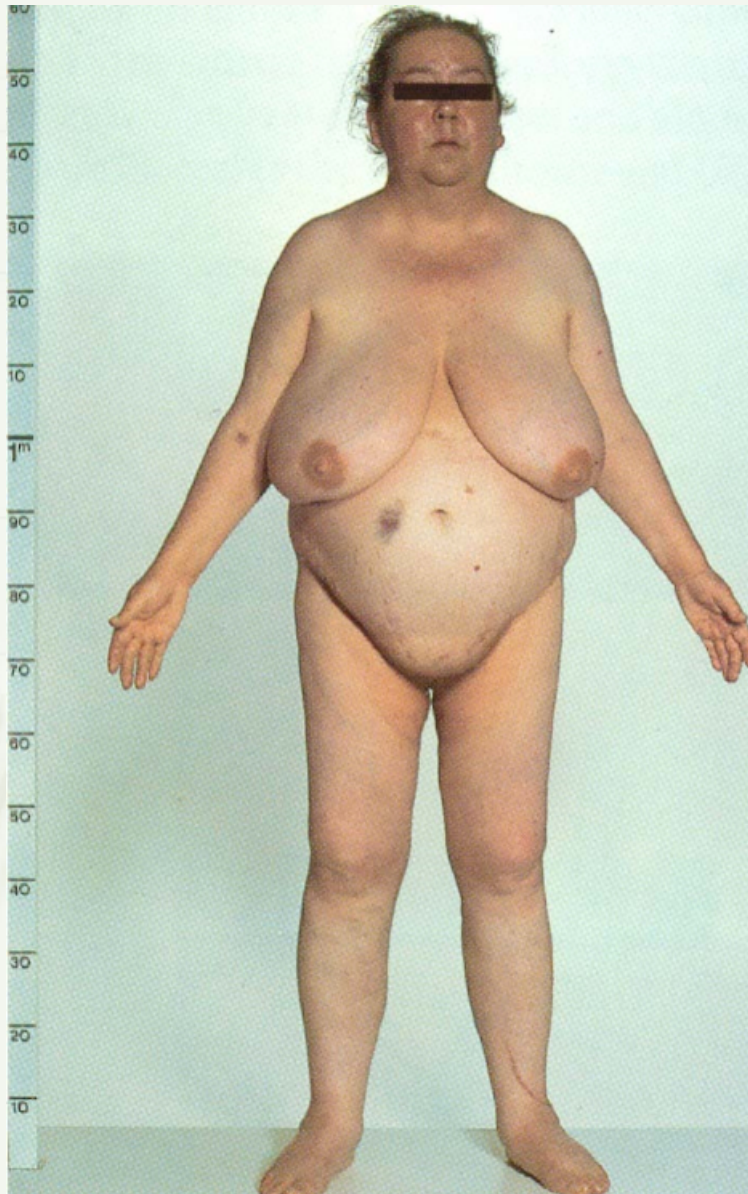
Bruisability

Osteoporosis

Red blood cells ↗

Plethora

✓ **Truncal obesity**





✓ Moon face

✓ Plethora



✓ **Buffalo hump**



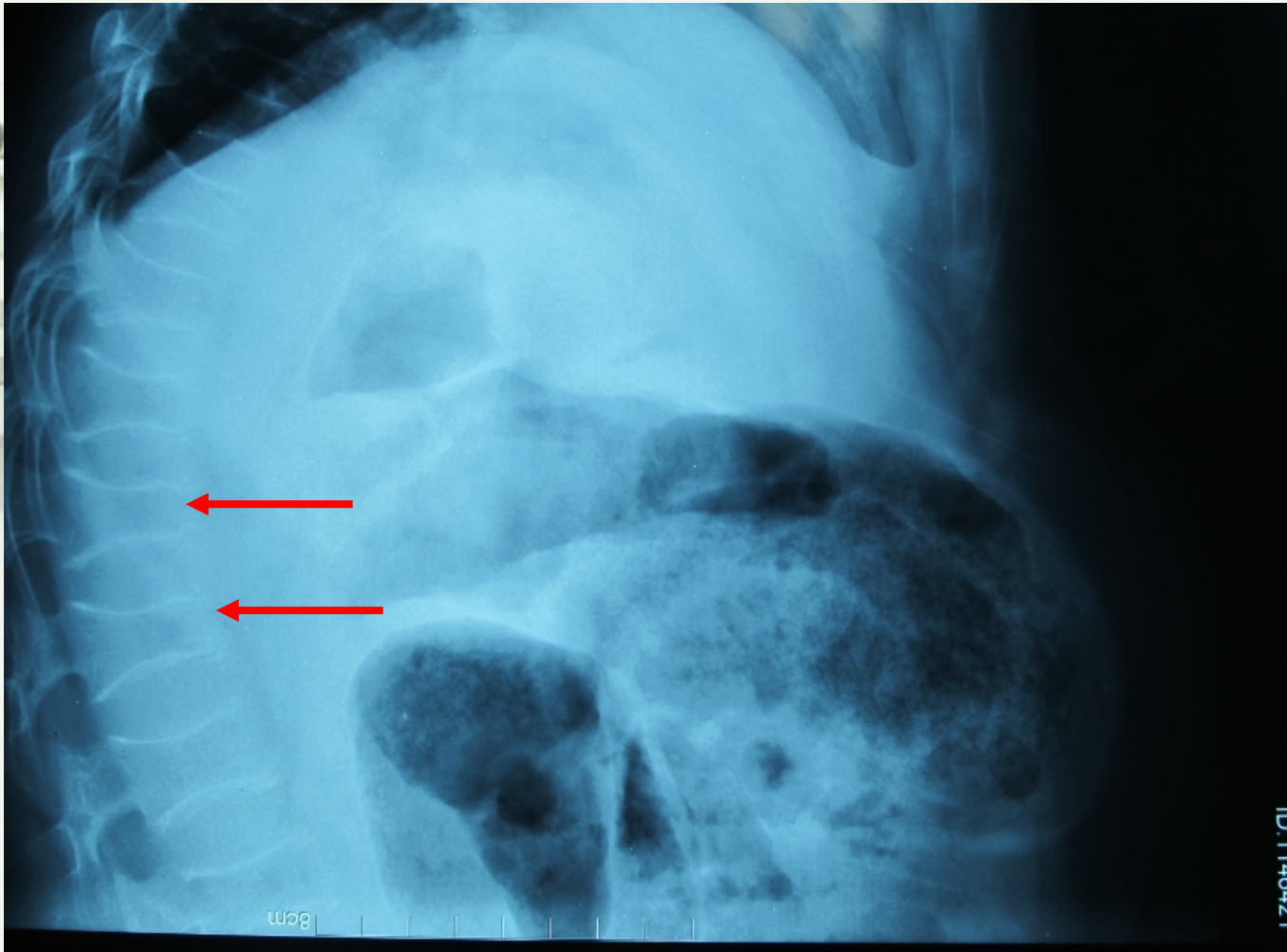
✓ **Violaceous striae**



✓ **Violaceous
striae**



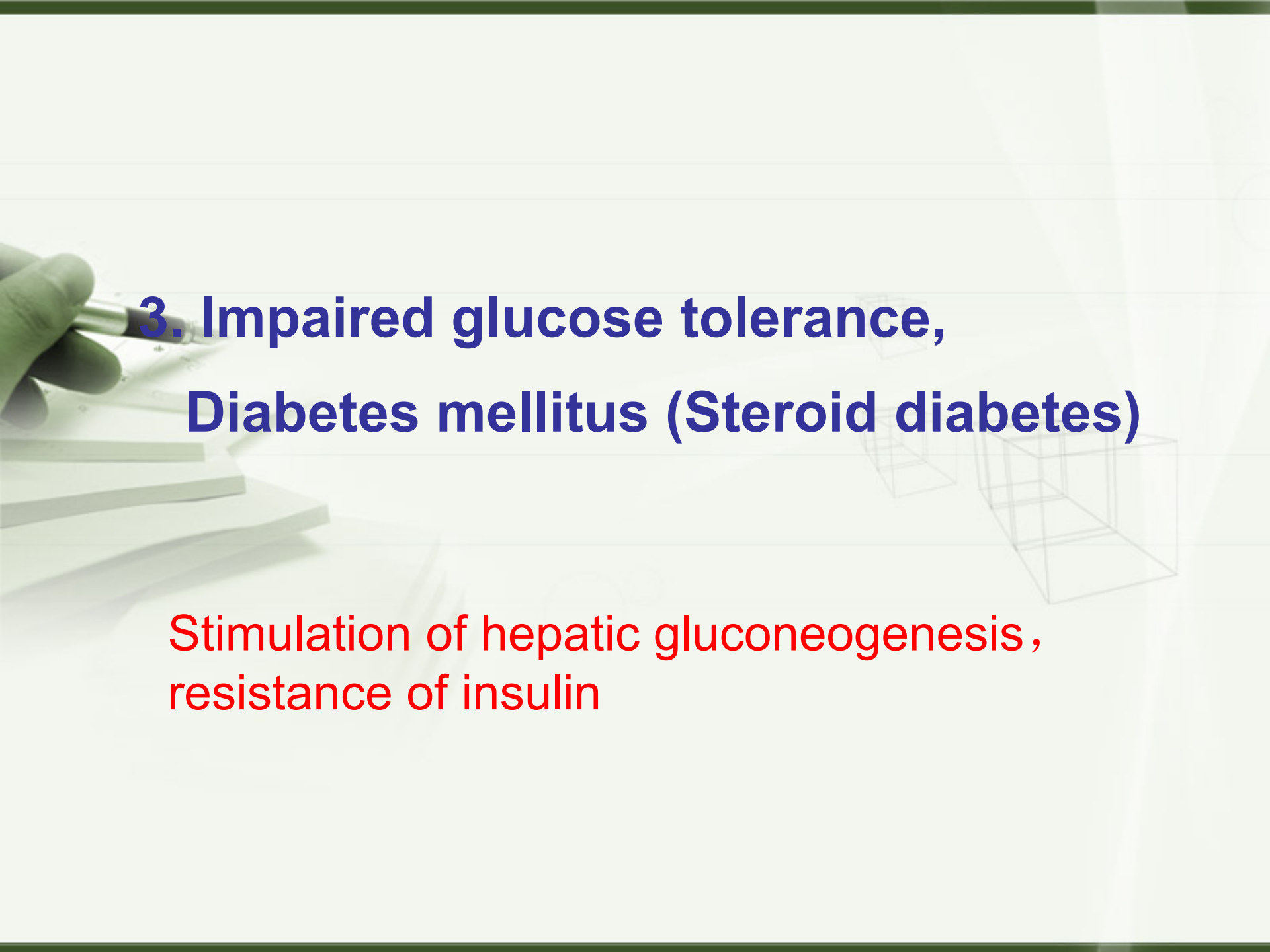
✓ **Osteoporosis:** vertebral bodies flatten



2. Hypertension, Electrolyte disturbances

Water and sodium retention, potassium depletion

- ✓ Hypertension, Hypokalemia
- ✓ left ventricular hypertrophy, heart failure, cerebrovascular accident, etc.



**3. Impaired glucose tolerance,
Diabetes mellitus (Steroid diabetes)**

**Stimulation of hepatic gluconeogenesis,
resistance of insulin**

4. Infectious

Immunosuppression: functions and numbers of neutrophils, lymphocytes, monocytes, macrophages ↓
the anatomical barrier function of the skin ↓

✓ Infections of Bacteria, Fungi, Viruses

5. Sexual dysfunction

Inhibition of Gonadotropin, Adrenal androgens ↗

✓ women

- Amenorrhea or Oligomenorrhea
- Virilization: Hirsutism, Acne, Mastatrophny

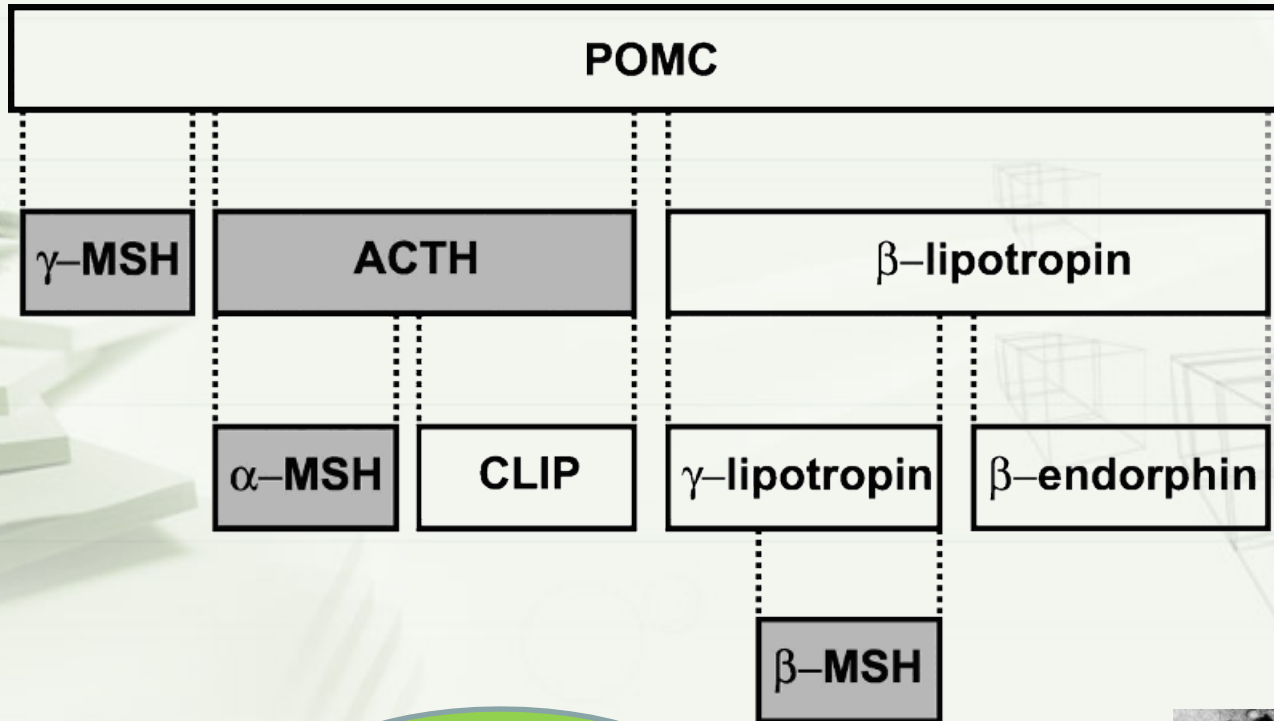
✓ men

- Decreased libido

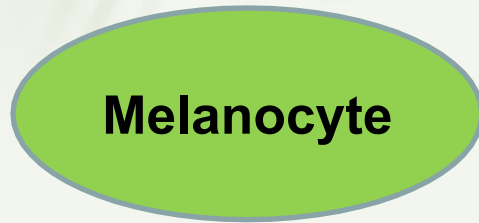
6. Others

- **Neurologic changes:** decreased strength, headaches, decreased memory and cognition
- **Psychiatric changes:** depression, anxiety, irritability
- **Hyperpigmentation:** Ectopic ACTH syndrome and severe Cushing's disease


Mechanism of hyperpigmentation



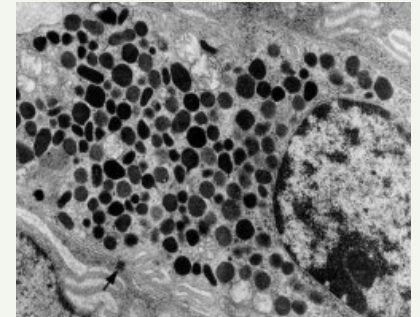
MSH 
(Melanocyte-stimulating hormone)



黑色素细胞

 **Melanin Pigment**

黑色素



ACTH ↑↑



The partial action of MSH



Melanin pigment deposition ↑



Hyperpigmentation

- **Hyperpigmentation:**



Tests

1. Plasma cortisol levels ↗

2. 24-hour Urine free cortisol (UFC) ↗

3. Plasma ACTH

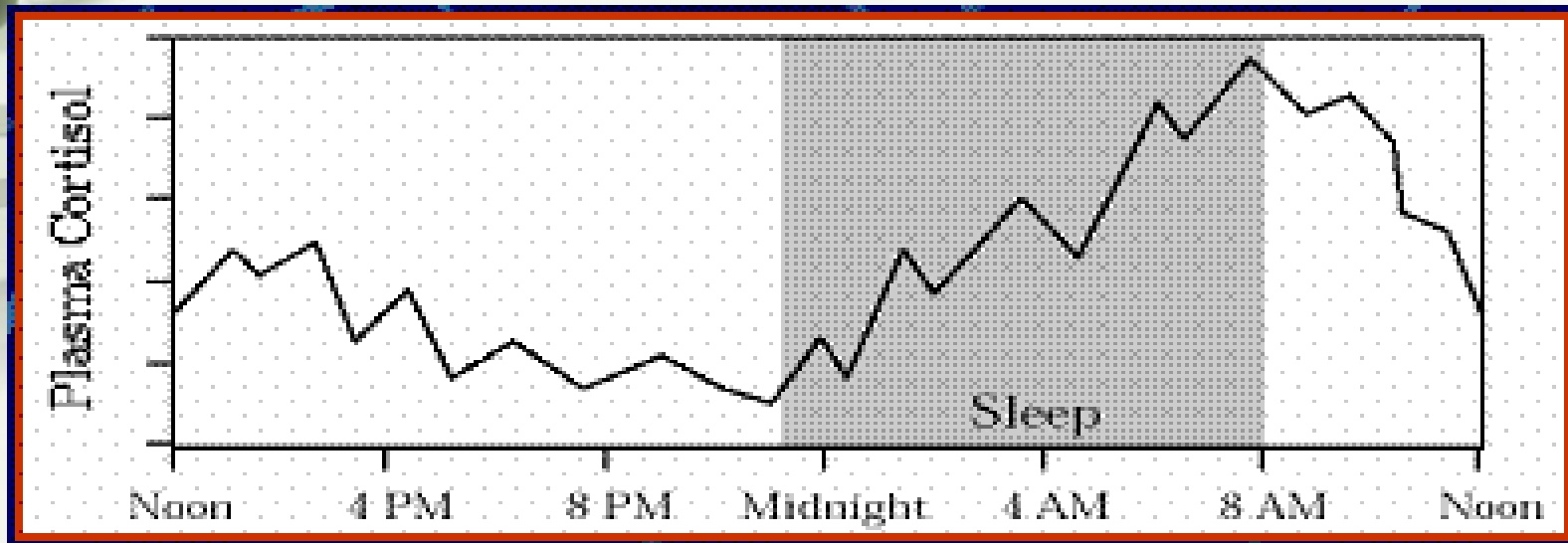
Discrimination of ACTH-dependent and -independent Cushing's syndrome

Cushing's disease ↗

Adrenal adenoma ↘

Ectopic ACTH-syndrome ↗↗

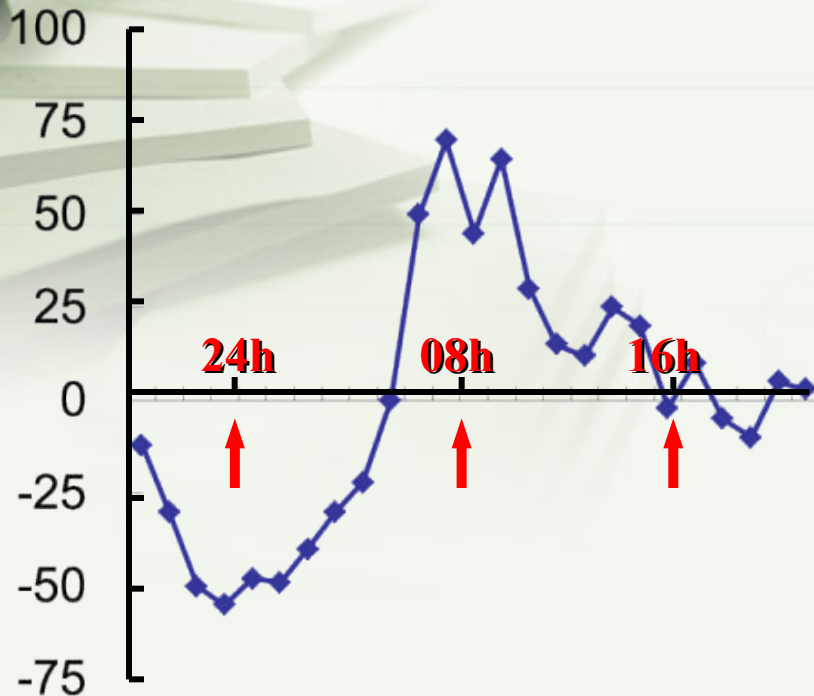
4. Plasma cortisol circadian rhythm



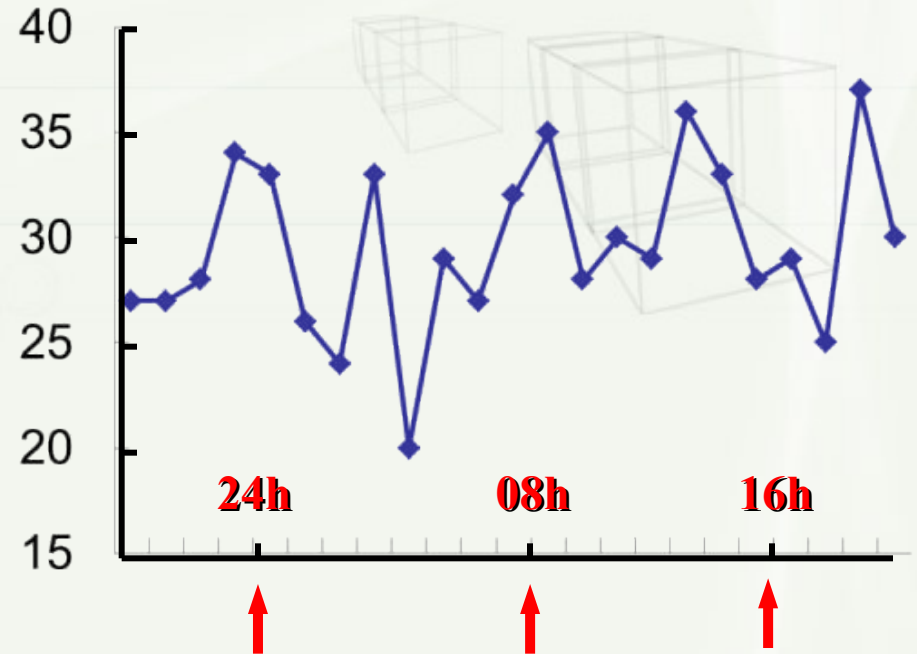
Normal cortisol circadian rhythm

Plasma cortisol circadian rhythm of cushing's syndrome

Normal



Cushing's syndrome



以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。如要下载或阅读全文，请访问：<https://d.book118.com/606235043132010110>