ADRENAL GLANDS

- **Resistance Phase**: this stage is lagged by 20-30 mins for the production of glucocorticoids.
- **Exhaustion Phase**: this is the eventual breakdown of homeostatic regulation and the starting of disease onset.

**Causes of Excess Glucocorticoids**

- Excess corticotrophin releasing factor is released from the hypothalamus.
- Enlargement (hyperplasia) of the adrenal cortex.
- Excess production of adrenocorticotrophic hormone.
- Certain tumours can also secrete corticotrophins such as pancreatic tumours.
- Long-term treatment of steroids for example can cause it.

**Cushing’s Disease**

*This is the name given to the disease which is characterised by an overactive adrenal gland.*

**Symptoms**

- Weight gain
- Fatigue
- Hypertension
- Thin arms and legs
- Purple skin stretch marks
- Psychiatric problems

**Treatment**

- **Gland irradiation**
  - This is the process of attacking the gland with radiation.
- **Surgery**
  - Removal of the pituitary gland or bilateral adrenalectomy (removal of both glands).
- **Metyrapone**
  - This is a corticosteroid antagonist

**Addisons’ Disease**

*This disease is characterised by the under-activity of the adrenal glands. Very rare.*

**Symptoms**

- Hypoglycaemia and fatigue
- Hypotension
- Weight loss
- Skin hyperpigmentation

**Treatment**

- **Hormone Replacement Therapy**
  - Hydrocortisone (glucocorticoid) side effects include diabetes and heart disease.
  - Fludrocortisone (mineralocorticoid) side effects are hypertension.