1) Smaller funnel shaped region surrounding infundibulum
Most cells are gonadotrophs

Pars Intermedia:
- Thin zone of basophilic cells
- Region is not well developed and has poor vascularization
- Functional significance in adults remains uncertain

2) Neurohypophysis
- Does not contain the two cells that synthesised its two hormones (antidiuretic hormone and oxytocin).
- Composed of neural tissue, some 100,000 unmyelinated axons of large secretory neurons whose cell bodies are in the hypothalamus and the nerve terminals and pituicytes which are a type of glial supporting cell that surround and support the terminals.
- Secretory neurones:
  - Have the characteristics of typical neurones but...
  - Larger-diameter axons
  - Well developed synthetic components relating to the production of the hormones
- Transported axonally into the pars nervosa, the hormones accumulate in axonal dilations called neurosecretory (or Herring) bodies. The hormones are stored in membrane-bound granules with carrier proteins (neurophysin I (for oxytocin) or II (for ADH))
- Nerve impulses along axons trigger release of hormones from neurosecretory bodies for uptake into the fenestrated capillaries and distribution by general circulation.

Control of adenohypophysis:
1) CNS: “central control”
Hypothalamic hormones produced by small neurons in third ventricle are discharged from axons in median eminence and then transported by the portal system to the anterior pituitary.
Pulsatile release of hypothalamic releasing factors stimulate pulses of anterior pituitary hormones.
Rate at which the hypothalamus secretes the regulatory hormones is regulated by negative feedback.

2) Negative feedback of target hormones at pituitary and hypothalamic levels:

The actions of the pituitary hormones thyroid stimulating hormone and adrenocorticotropic hormone cause release of hormones at target tissues and these hormones inhibit release of the releasing factor at the hypothalamus and the hormone at the anterior pituitary.

Also paracrine interactions in the anterior pituitary and effects of other hormones outside of the feedback loop i.e. oxytocin released from posterior pituitary during breast feeding increases the secretion of prolactin.

**Control of neurohypophysis:**

Entirely by hypothalamus.

### 14.2.2 HORMONES OF THE ADENOHYPÖPHYSIS

“Symptoms of excess or insufficiency mostly resemble those of over- or under-activity of the target endocrine organs”