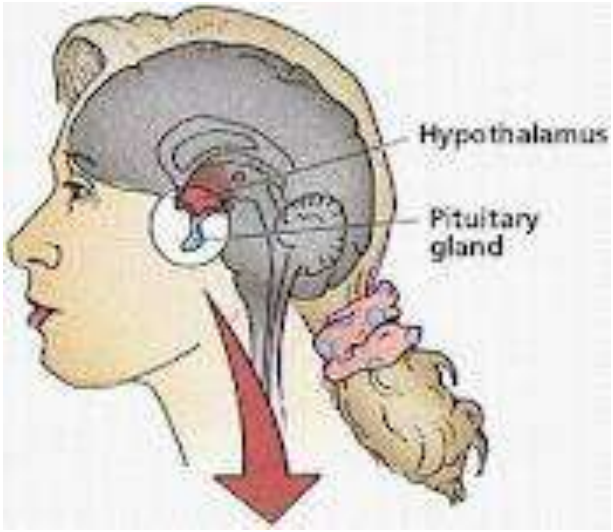


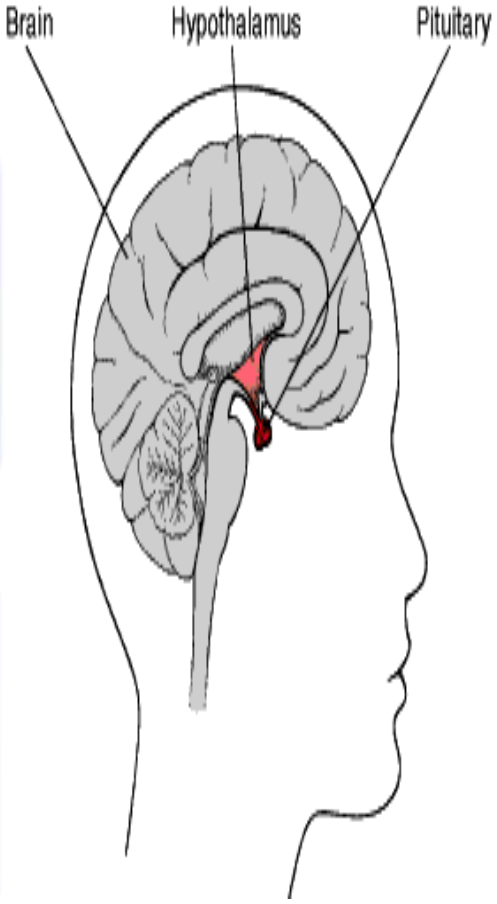
PITUITARY GLAND

INTRODUCTION

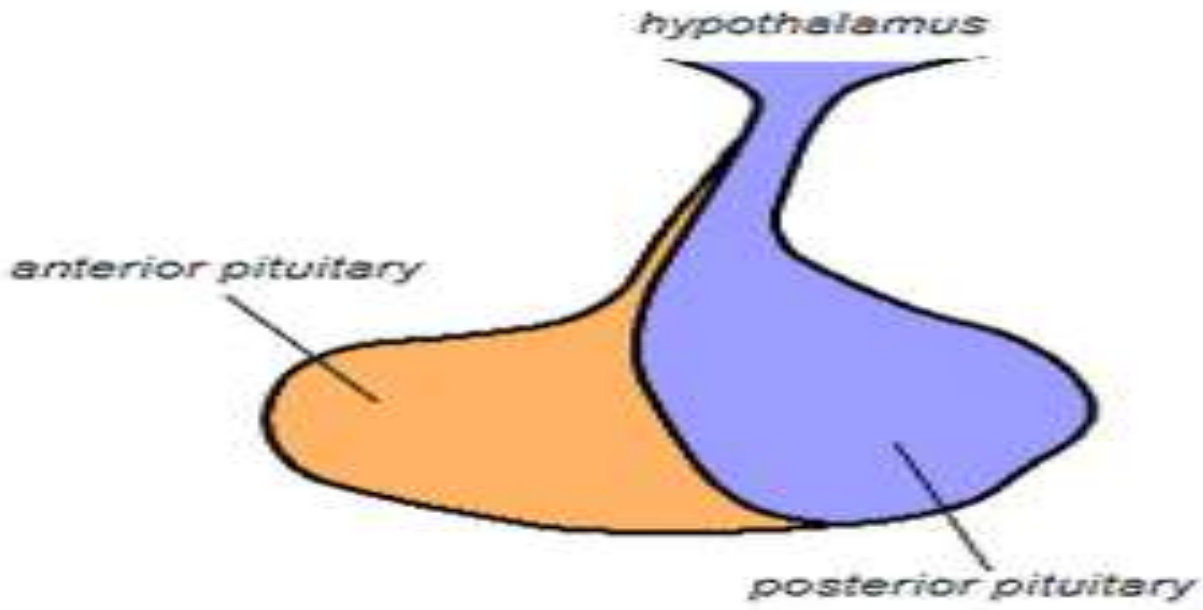
What is the pituitary gland?

The pituitary gland (sometimes called the hypophysis) is a small gland that dangles from the base of the brain like a "pea on a string."

Several hormones produced by the hypothalamus are stored here and released into the blood



PITUITARY GLAND



Has two parts :

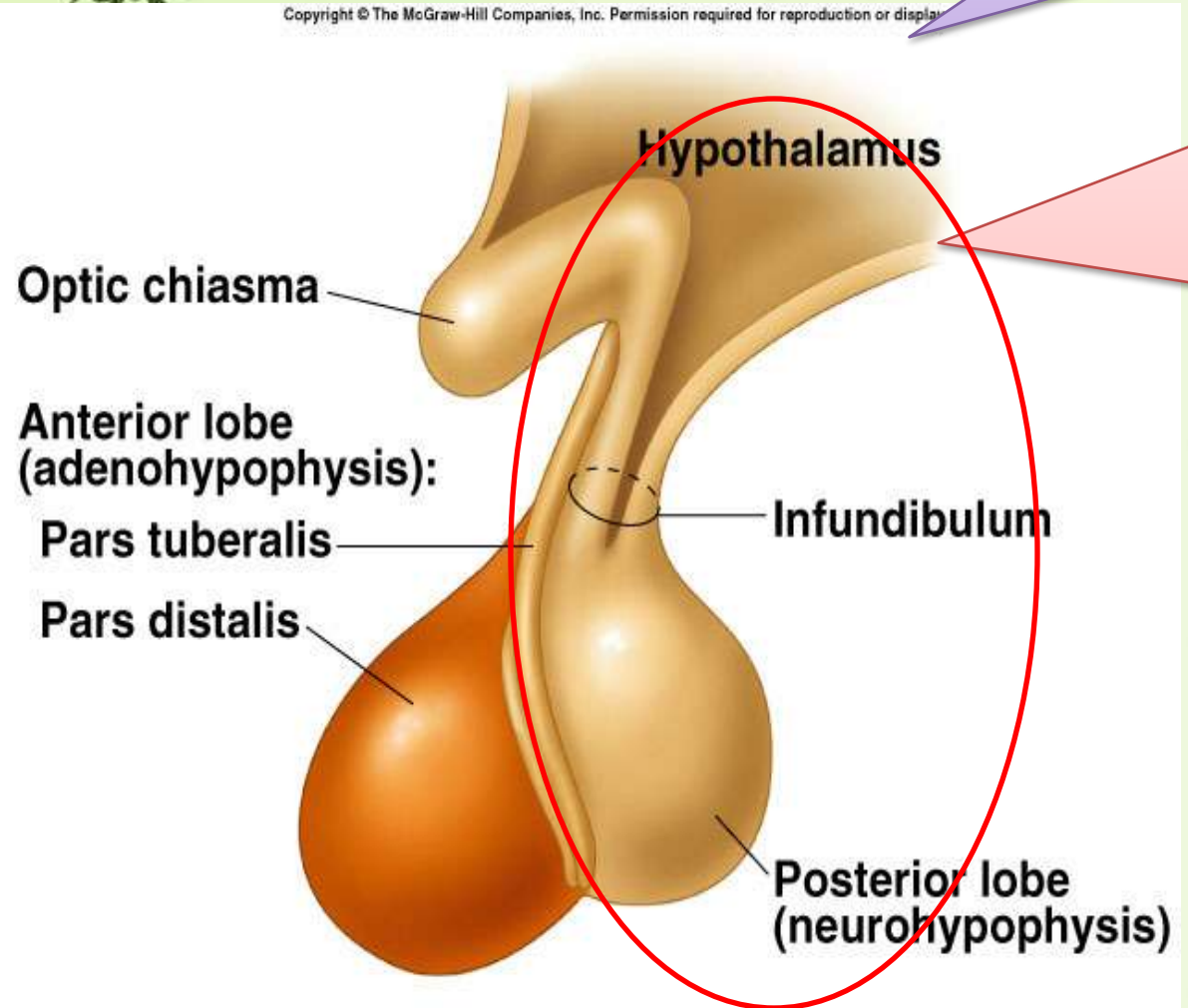
a) anterior lobe

b) posterior lobe

Posterior pituitary gland

STRUCTURE

Its is very small – only the size of a pea, 500mg



LOCATION

Sits just beneath the base of the brain, behind the bridge of the nose or,
lies in the hypophyseal fossa of the sphenoid bone below the hypothalamus.

Important of Posterior Pituitary

As it takes messages from the brain (via a gland called hypothalamus) and uses these messages to produce hormone that affect many parts of the body.

Including stimulating all the other hormone – producing gland to produce their own hormones.

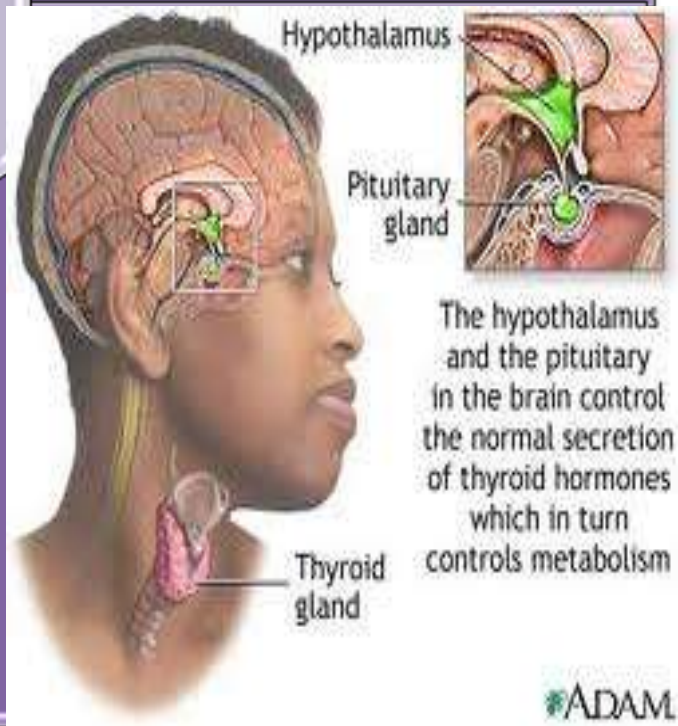
For this reason it is often referred to as the master gland.

Insufficient secretion of vasopressin underlies diabetes insipidus, a condition in which the body loses the capacity to concentrate urine

Affected individuals excrete as much as 20 liters of dilute urine per day.

MAIN ACTION OF PPG

Over secretion of vasopressin causes the *syndrome of inappropriate antidiuretic hormone (SIADH).*



(Antidiuretic Hormones)

Hormone secreted

Vasopressin (ADH)

TARGET IN THE BODY

Kidneys or Arterioles

Effects

a) **Stimulates water retention**
b) **raises blood pressure by contracting arterioles**
c) **induces male aggression**

Oxytoxin (OT)

TARGET IN THE BODY

Uterus

Mammary gland

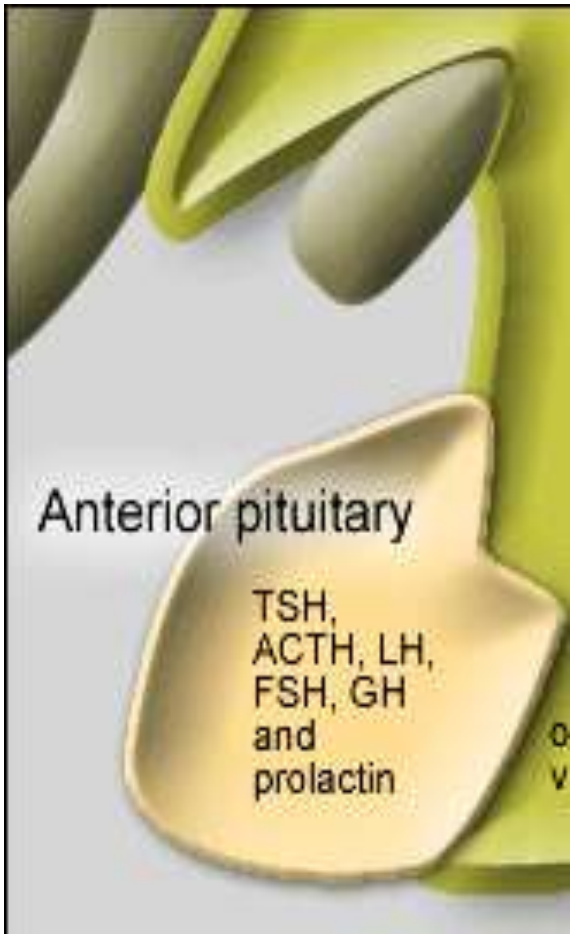
Effects

Uterine contraction; lactation

ANTERIOR PITUITARY GLAND

1.Size of a pea

2.The anterior pituitary gland is the front lobe of the pituitary gland, which is found at the floor of the brain, called the *sellaturcica*



Negative feedback mechanism

Also called adenohypophysis

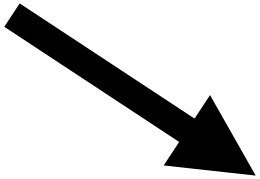
ANTERIOR POSTERIOR GLAND

A major organ of the endocrine system

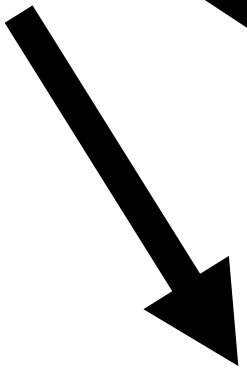
The anterior pituitary regulates several physiological processes including stress, growth, and reproduction.

Important of Anterior Pituitary

control chemical and water balance in body



control growth and metabolism

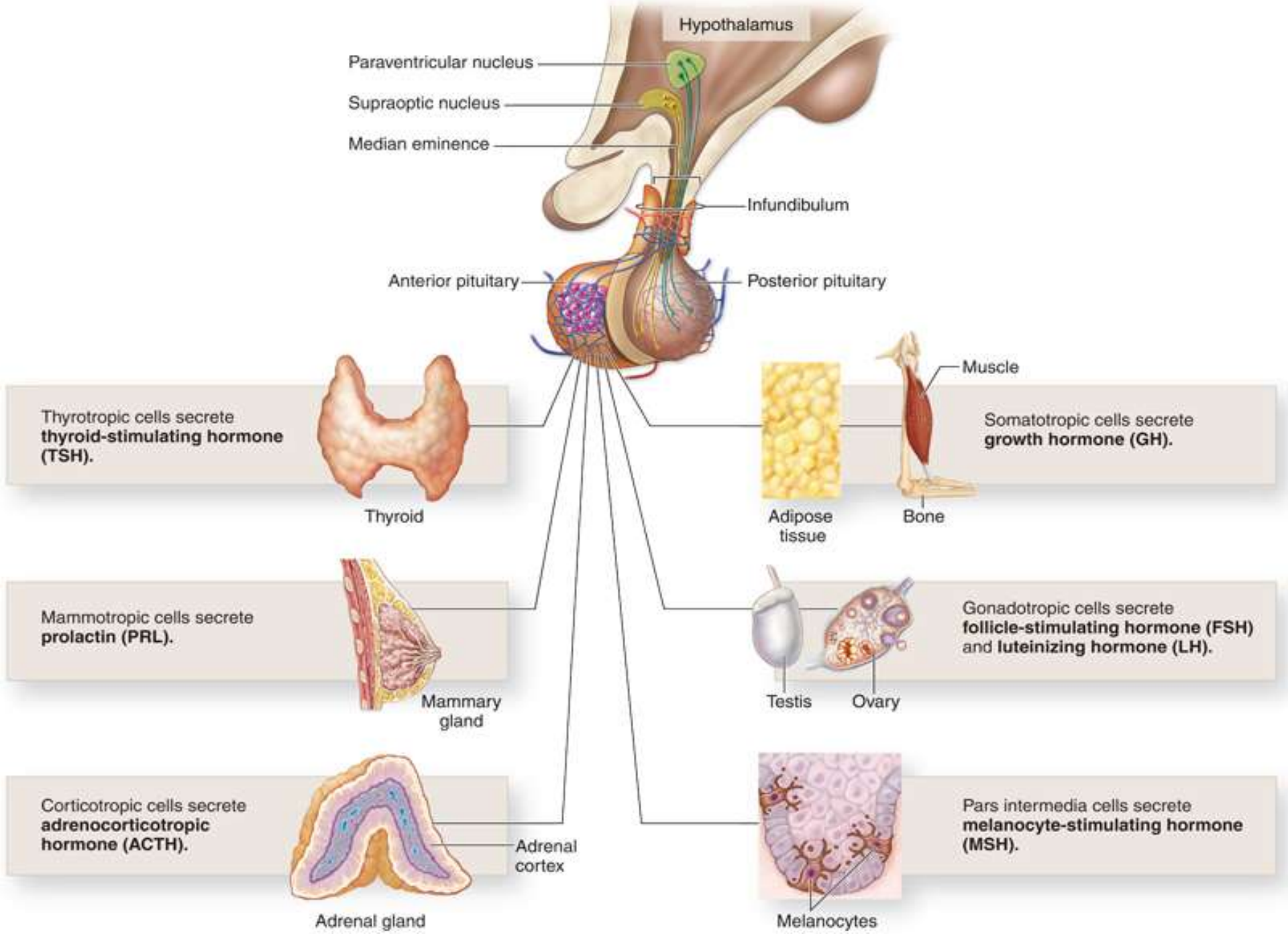


influence sexual behavior

Stimulate growth and maturation of the gonads

Hormone of the anterior pituitary

ANTERIOR PITUITARY	TARGET TISSUE
GH	Most tissues
TSH	Thyroid gland
ACTH	Adrenal cortex
Prolactin	Breast
FSH	Ovaries and testes
LH	Ovaries and testes



Growth hormone

- Stimulates the growth of bones,muscle,and other organ by increasing protein synthesis.
- affects protein, fat and carbohydrate metabolism.
- Too little growth hormone secretion can be the result of abnormal development of the pituitary gland.
- Release is stimulated by GHRH
- Suppression is by GHRIH

Thyroid stimulating hormone (TSH)

- Stimulated by Thyroidtropin-releasing hormone (TRH)from hypothalamus
- Inhibit by Somatostatin from hypothalamus
- Stimulate the thyroid gland to secrete hormone thyroxin
- Stimulates growth and activity of the thyroid gland
- When too much TSH is secreted,it cause the thyroid gland to enlarge and secrete too much thyroxin

Adrenocorticotropic hormone (corticotrophin, ACTH)

- Stimulated by Corticotropin-releasing hormone(CRH) from the hypothalamus
- ACTH stimulate the adrenal gland(cortex) to secret a hormone call glucocorticoids.
- Secretion is regulated by negative feedback

  (Suppressed when blood level ACTH raises)

Prolactin

- Also known as lactogenic hormone
- Stimulated by Prolactin-releasing hormone (PRH) from hypothalamus
- Inhibit by Dopamin from hypothalamus
- Target cell is mammary gland
- Stimulates the production of milk in the breast following pregnancy.
- Negative feedback when blood level prolactin increase
- Prolactin hypersecretion in males cause erectile dysfunction.

Gonadotrophins

- LUTENIZING HORMONE (LH) –

~>stimulated by gonadotropin-releasing hormone(GnRH) from hypothalamus

~> In males, stimulates the testes to secrete testosterone

~>In females, stimulates release of ovum by ovary.

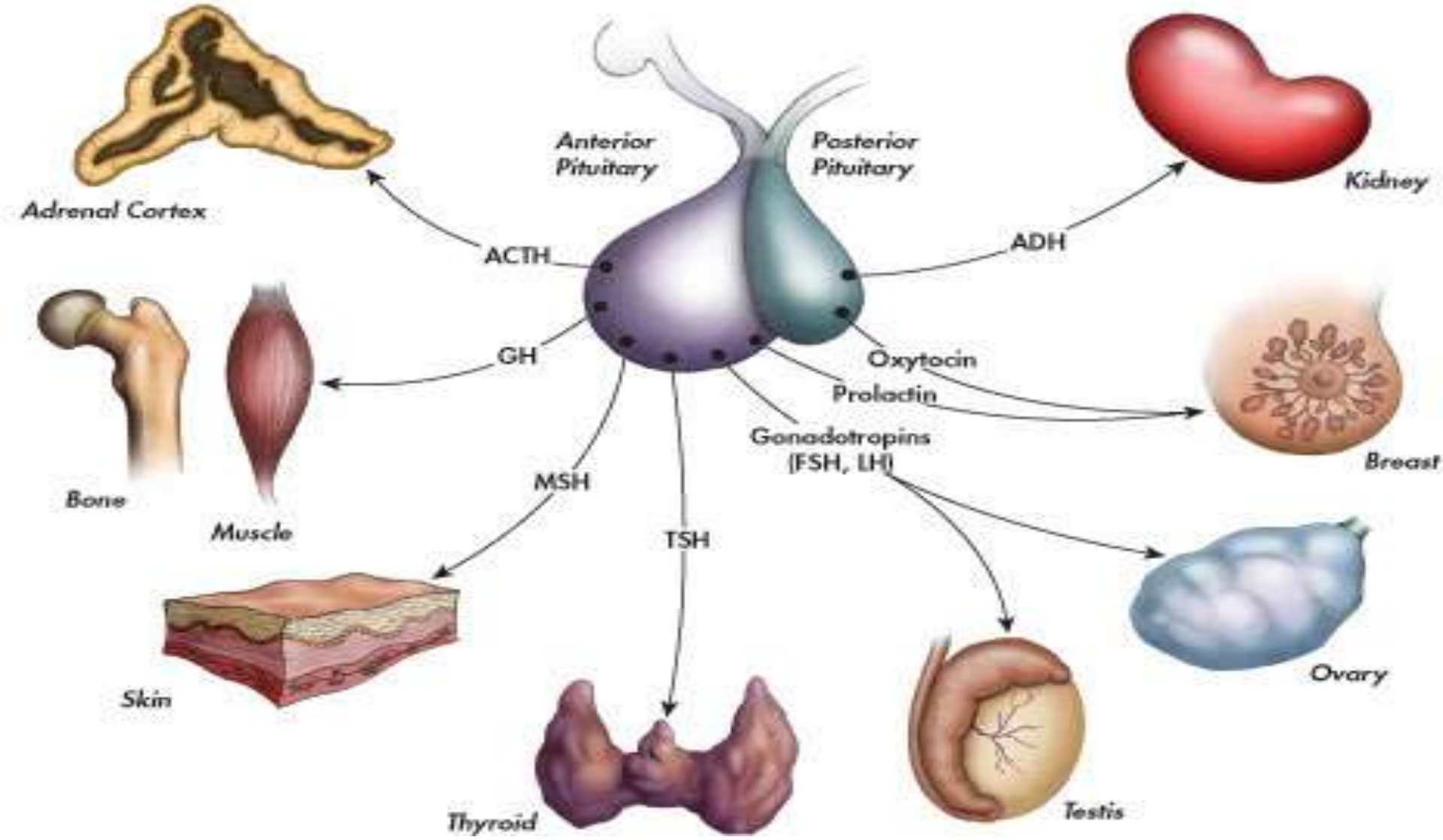
~>After ovulation,it stimulate the formation of corpus luteum in ovary and secret hormone progesterone .

- FOLLICLE-STIMULATING HORMONE (FSH)

~>in male,stimulate production of sperm cells in the testes.

~> in females, stimulates maturation of ovarian follicle and secrete estrogen by ovaries

SUMMARY


Adrenal Cortex
Anterior Pituitary
Posterior Pituitary
Kidney
ACTH
ADH
GH
Oxytocin
Prolactin
Gonadotropins (FSH, LH)
Bone
Muscle
Breast
MSH
TSH
Skin
Ovary
Thyroid
Testis

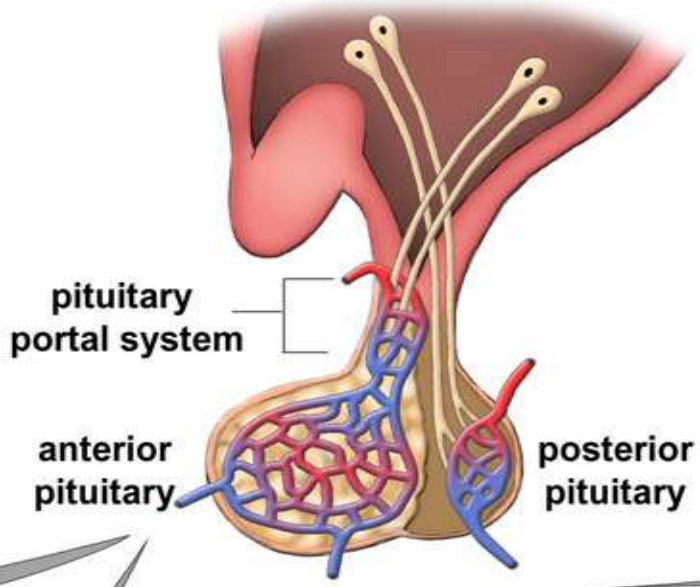
Neurosecretory cells produce releasing and release inhibiting hormones.

These hormones are secreted into a portal system.

Each type of hypothalamic eighter stimulates or inhibits production or secretion of another pituitary hormone.

The anterior pituitary secretes its hormones into a blood stream.

Hypothalamus



Neurosecretory cells produce ADH and oxytocine.

These hormones move down axons to axon endnes.

When appropriate, ADH and oxitocine are secreted from the axon endnes into the blood stream.

gonadotropins (FSH & LH)

ovaries, testes

growth hormone (GH)

bones, tissues

prolactin (PRL)

Mammary glands

adrenocorticotropic hormone (ACTH)

adrenal cortex

thyroid stimulating hormone (TSH)

thyroid gland

antidiuretic hormone (ADH)

kidney tubules

oxytocin (OT)

Mammary glands

oxytocin (OT)

smooth muscle in uterus


Thank U