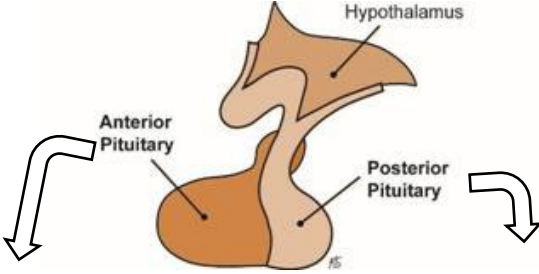


Complete the chart below with the hormones released by the anterior pituitary gland (tropic hormones), the releasing hormone for each tropic hormone, the organ affected &/or hormone stimulated by that tropic hormone, & the peripheral effects. The first has been completed for you as an example.



Name \_\_\_\_\_  
 Term \_\_\_\_\_

Complete the chart below with the hormones released by the posterior pituitary gland and their peripheral actions.

Releasing factor	Tropic hormone	Peripheral organ/hormone	Peripheral actions
Corticotropin releasing factor (CRF)	Adrenocortico-tropic hormone (ACTH)	Adrenal glands/ cortisol	Aspects of stress response

Hormone	Actions

Posterior pituitary hormones are made in the \_\_\_\_\_.

Describe &/or diagram the hypothalamic-pituitary-thyroid axis, including the negative feedback that turns it off.

Describe &/or draw the milk letdown reflex:

What type of receptors are used by peptide hormones?

What type of receptors are used by steroid hormones?

Why can't protein & peptide hormones use the receptors that steroid hormones use?

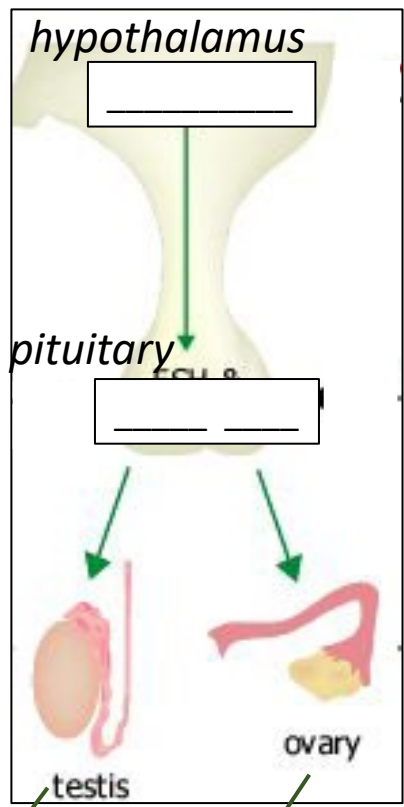
List 5 steroid hormones

- 1.
- 2.
- 3.
- 4.
- 5.

During what stage of the menstrual cycle is fertility highest in women?

How do oral contraceptives block pregnancy?

*To the right is the hypothalamic-pituitary-gonadal axis. Fill in the blanks with the hypothalamic releasing factor and the pituitary tropic hormones that activate the gonads, as well as the hormones released by the testes and ovaries.*



Releases:  
 \_\_\_\_\_  
 \_\_\_\_\_

Releases:  
 \_\_\_\_\_  
 \_\_\_\_\_

Draw & describe the HPA Axis, including the negative feedback that turns it off.

Describe &/or diagram the hormonal communication between the pituitary gland and the ovaries during the menstrual cycle.

Name \_\_\_\_\_ Term \_\_\_\_\_

Diagram the synthesis pathway for the sex hormones. Include the following: testosterone, DHT, progesterone, estradiol, 5-alpha-reductase, and aromatase.

Organizational/developmental and activational effects of hormones: (1) Define each. (2) When does each occur? (3) Are the effects permanent or temporary? (4) Provide an example of each.

<u>Organizational:</u>	<u>Activational:</u>
1.	1.
2.	2.
3.	3.
4.	4.

Diagram the ~6-week gestation reproductive tract, labeling the gonads, Mullerian Ducts, and Wolfian Ducts, and noting which is the primordial female tract and which is the primordial male tract.

Sexual differentiation:  
Gene that triggers gonads to develop as testes: \_\_\_\_\_  
Protein above gene codes for: \_\_\_\_\_  
Hormones secreted by developing testes *and the action of each*:  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
How does differentiation proceed in the XX fetus?  
\_\_\_\_\_  
\_\_\_\_\_  
In the XX fetus, what are the levels of androgens, estrogens, and progestins (high or low/absent)?  
Androgens: \_\_\_\_\_ Estrogens: \_\_\_\_\_  
Progestins: \_\_\_\_\_

Name \_\_\_\_\_ Term \_\_\_\_\_

Consider the rat experiments on sexual differentiation of the brain and body. Circle the correct answers in parentheses.

- a. An untreated male has (high/low) testosterone at birth and in adulthood and a (small/large) SDN-POA.
- b. An untreated female has (high/low) testosterone at birth and in adulthood and a (small/large) SDN-POA.
- c. A female treated with testosterone at birth has (high/low) testosterone in adulthood and a (small/large) SDN-POA.
- d. A female rat treated with testosterone in adulthood has a (small/large) SDN-POA.
- e. Taken together, these data suggest that the size of the SDN-POA depends on (hormone and time of exposure):
  - f. A typically developed male will (mount/lordose) a female rat.
  - g. A typically developed female rat will (mount/lordose) in the presence of a male rat.
- h. Under what circumstances will a male rat lordose?
  - a. Castration at birth
  - b. Estradiol in adulthood
  - c. Both A and B
- i. Under what circumstances will a female rat mount?
  - a. Testosterone at birth
  - b. Testosterone in adulthood
  - c. Both A and B
- j. Taken together, these data suggest that reproductive behavior in rats depends on (hormone and time(s) of exposure):

List 2 reasons that researchers looked at the preoptic area when studying sexual dimorphisms in the rat brain.

- 1.
- 2.

For the intersex conditions below, (1) what is the difference in prenatal androgen activity compared with typical development, (2) why does that difference occur, and (3) what is the resulting anatomical phenotype?

*CAH:*

*AIS:*

*5-alpha-reductase deficiency:*

During puberty:

- a. Growth hormone, LH, and FSH are released from the \_\_\_\_\_
- b. Growth hormone causes \_\_\_\_\_.
- c. LH and FSH increase the release of \_\_\_\_\_, which activate sex-\_\_\_\_\_ genes.
- d. Those genes lead to the development of the \_\_\_\_\_ sex characteristics
- e. These changes constitute \_\_\_\_\_ effects of hormones
  - a. organizational
  - b. activational
  - c. both organizational & activational