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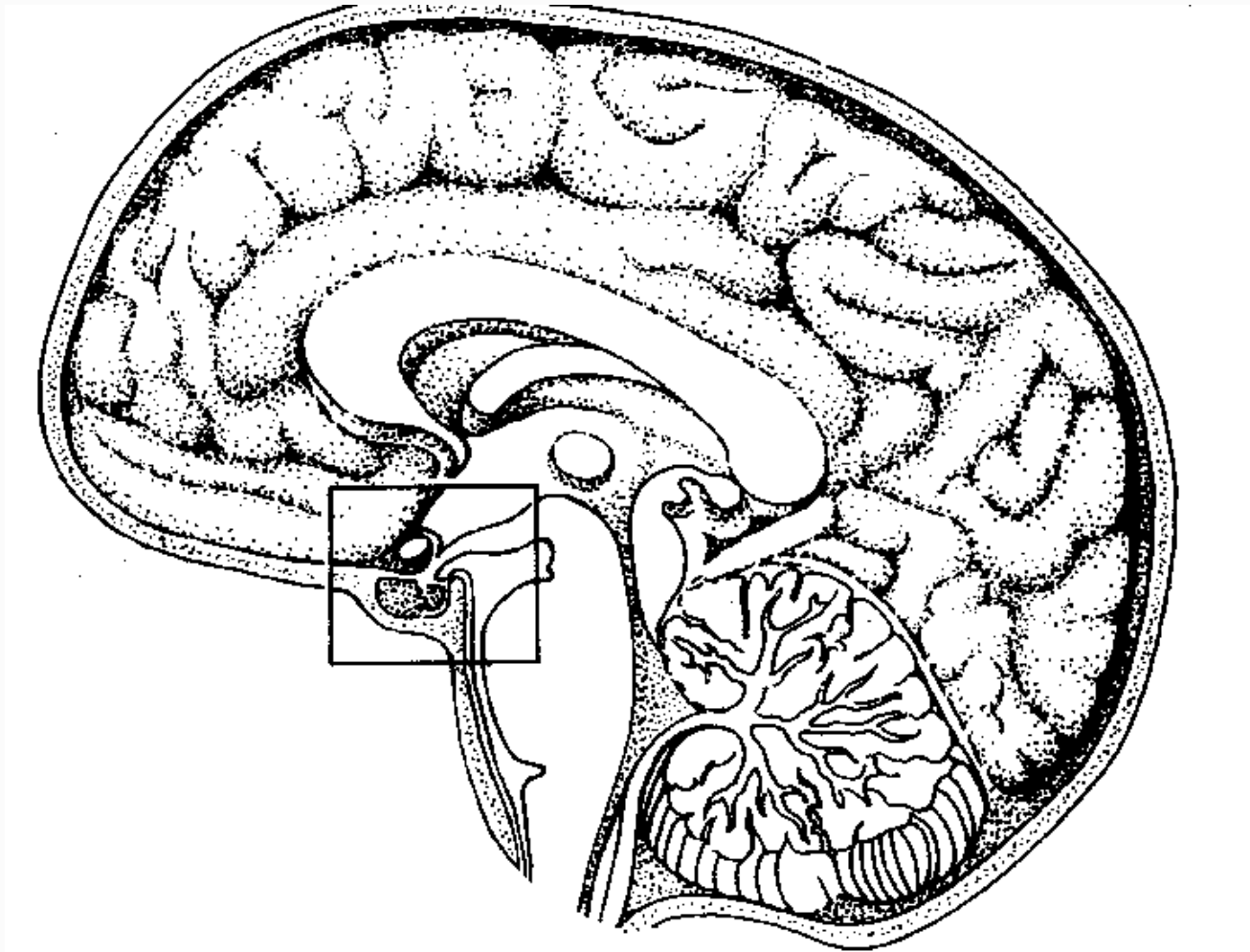
JOHNS HOPKINS  
BLOOMBERG  
SCHOOL *of* PUBLIC HEALTH

## Section B

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### Pubertal Regulation

# Hypothalamic-Pituitary Axis



# The Gonadostat

- Like a thermostat



# The Gonadostat

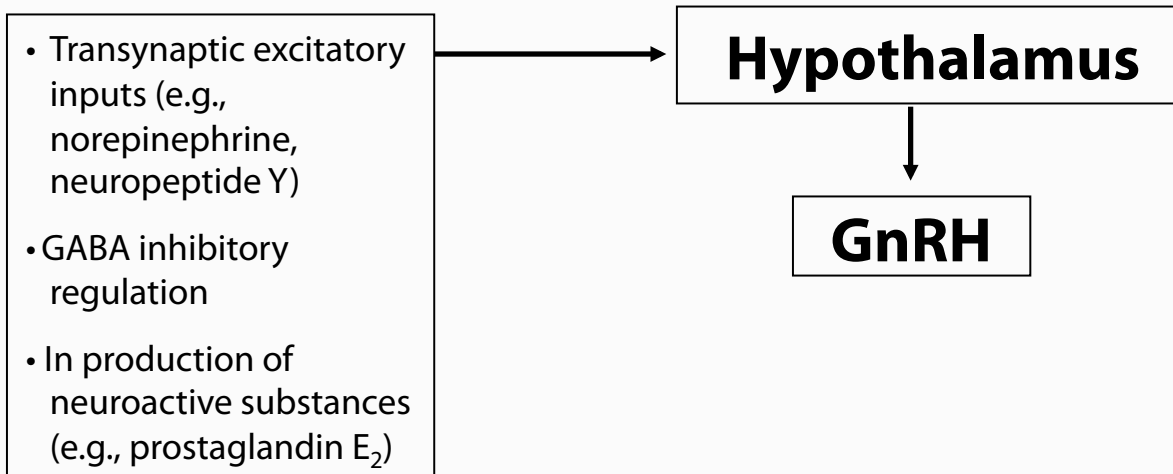
**Hypothalamus**

# The Gonadostat

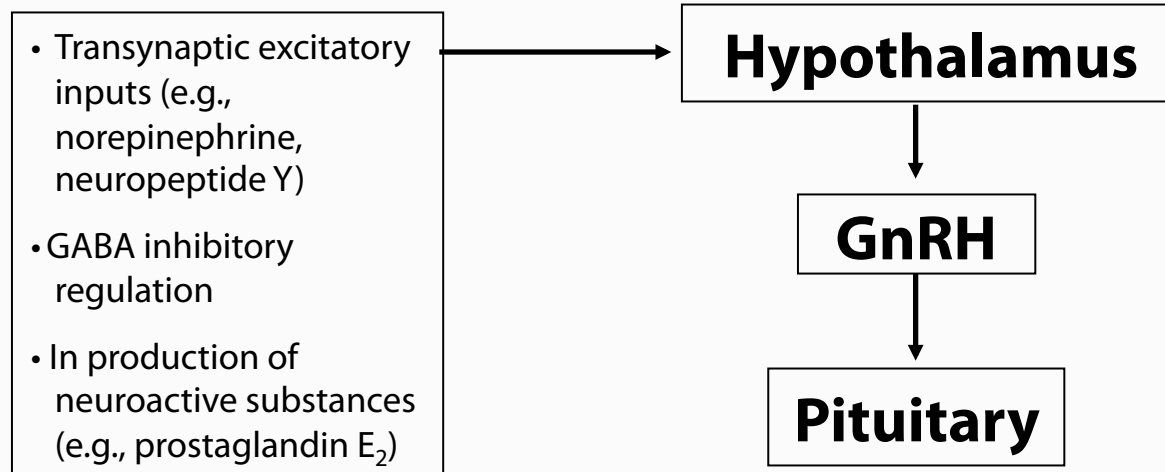
- Transynaptic excitatory inputs (e.g., norepinephrine, neuropeptide Y)
- GABA inhibitory regulation
- In production of neuroactive substances (e.g., prostaglandin E<sub>2</sub>)

**Hypothalamus**

# The Gonadostat

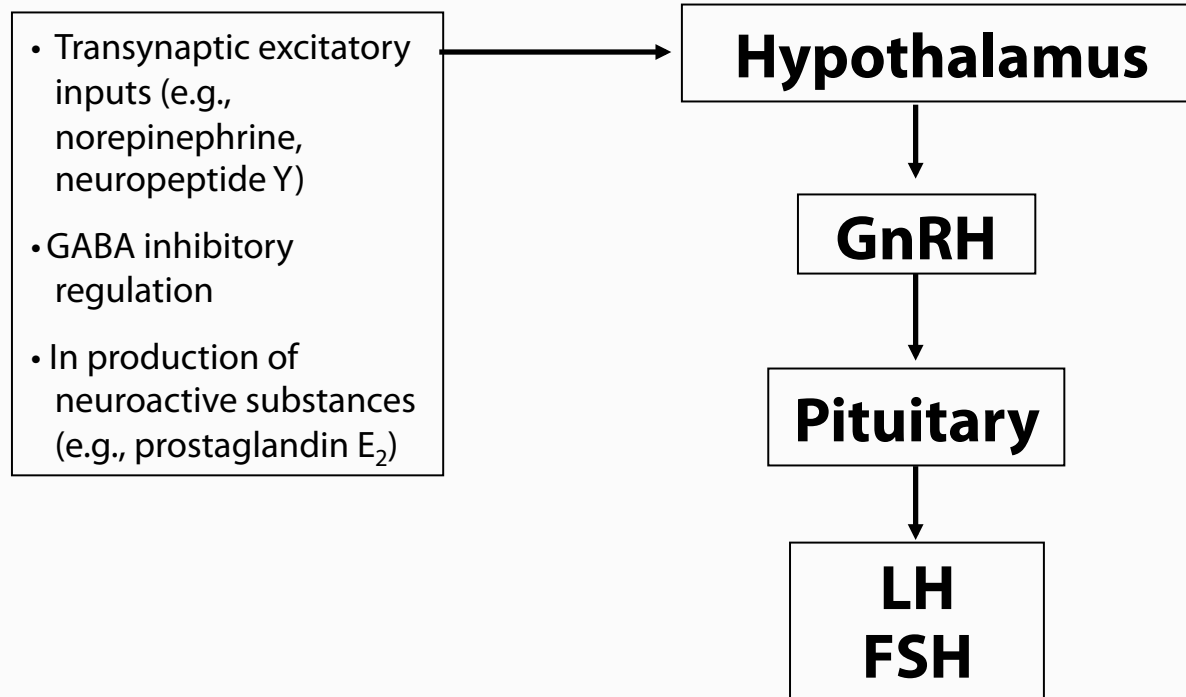


# The Gonadostat

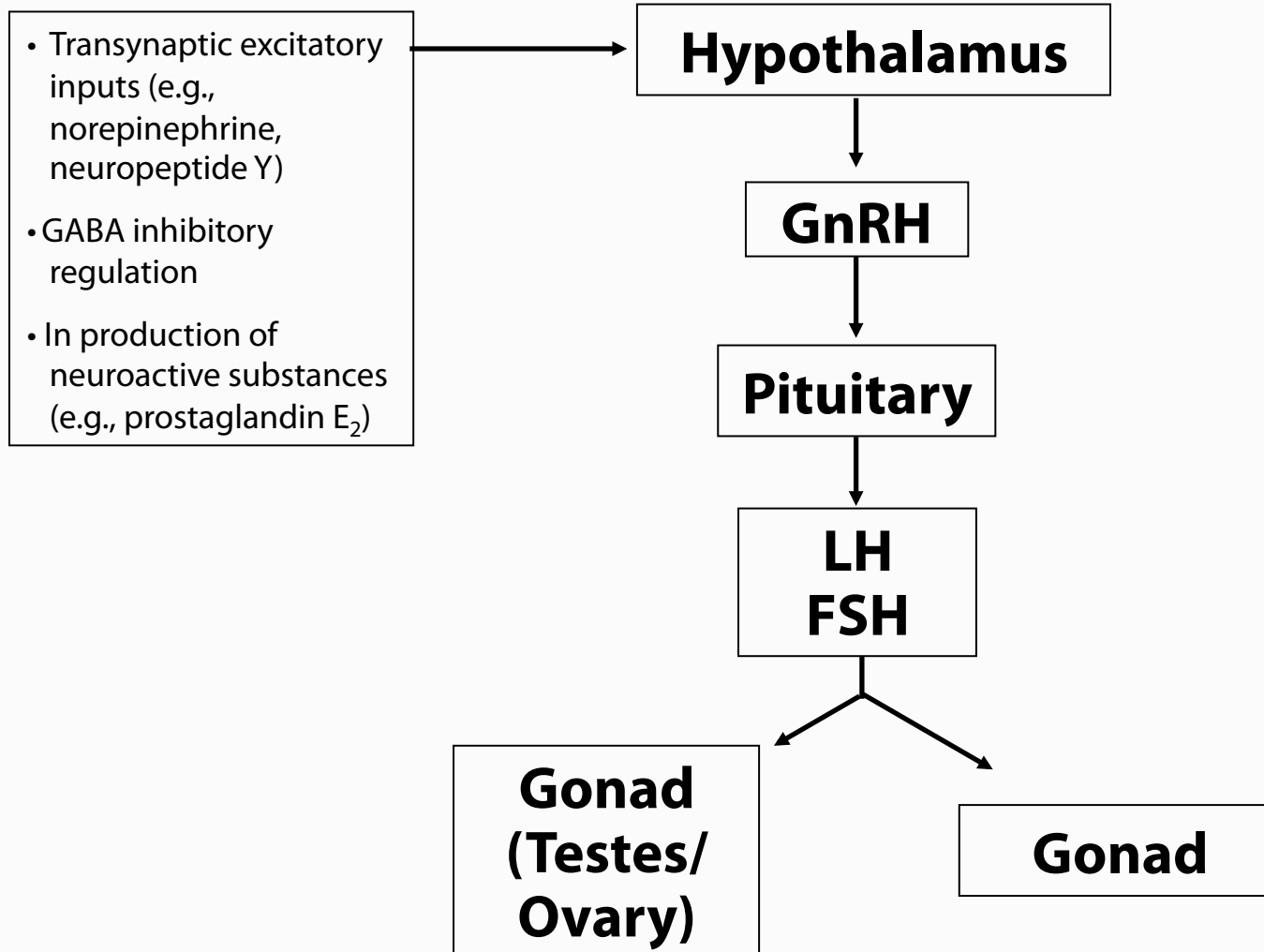




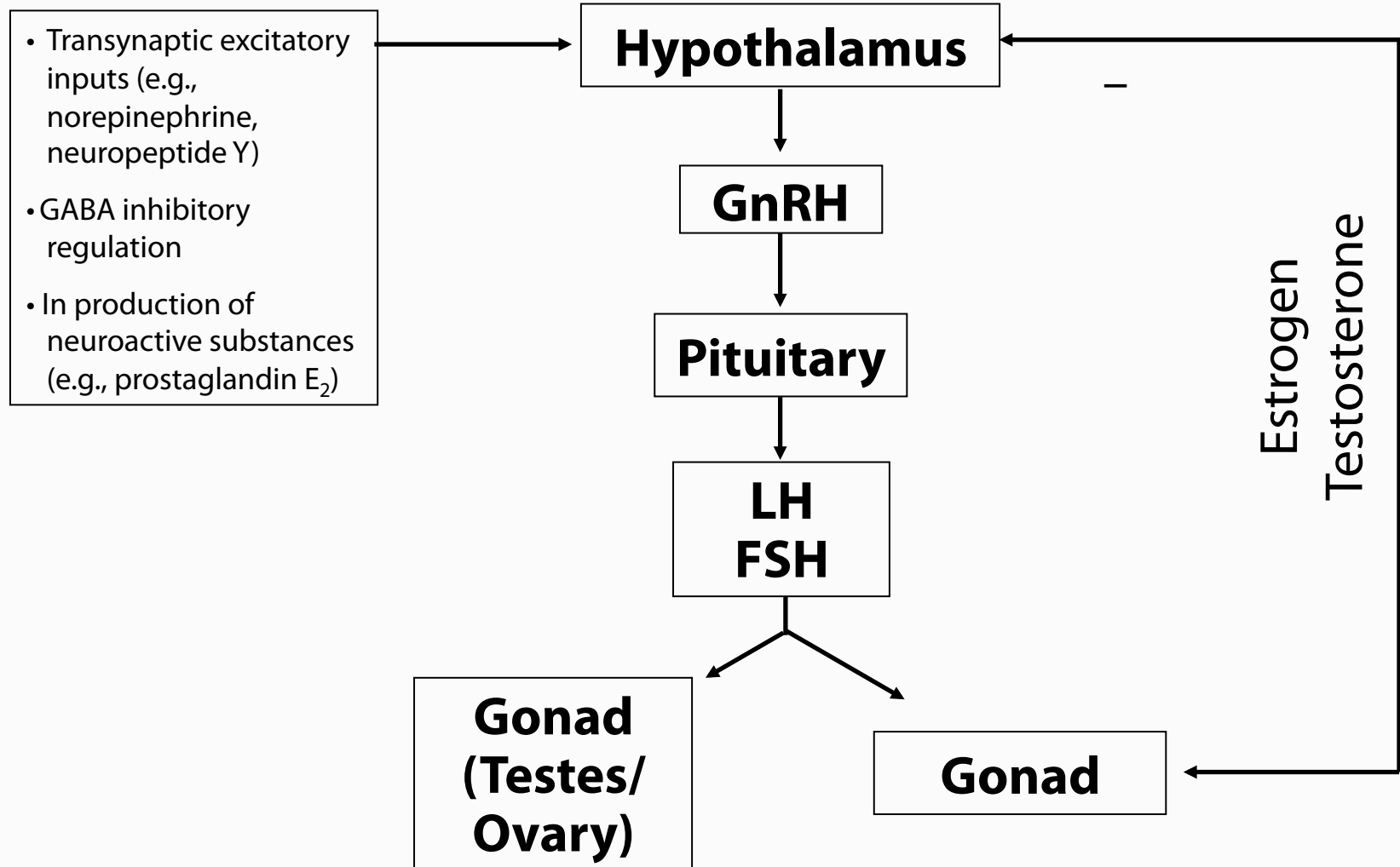
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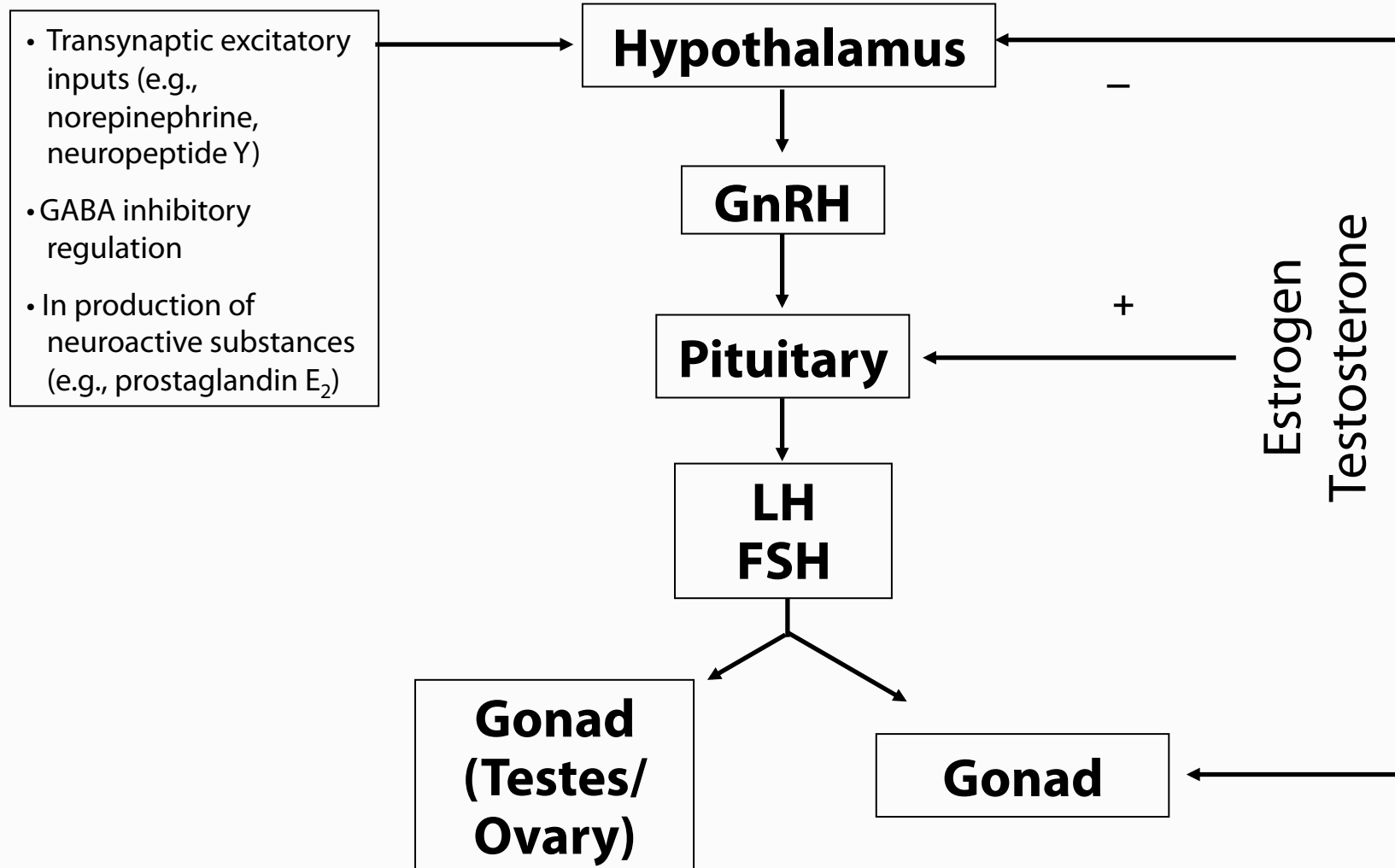
# The Gonadostat



# The Gonadostat



# The Gonadostat



## The Key Change of Puberty

- The key change of puberty is an increased sensitivity of receptor cells in the hypothalamus resulting in a 10 to 20 times increase of testosterone to turn off the gonadostat

# Factors that Influence the Onset of Puberty

- Genetics
- Social context
- Behavior
- Nutrition