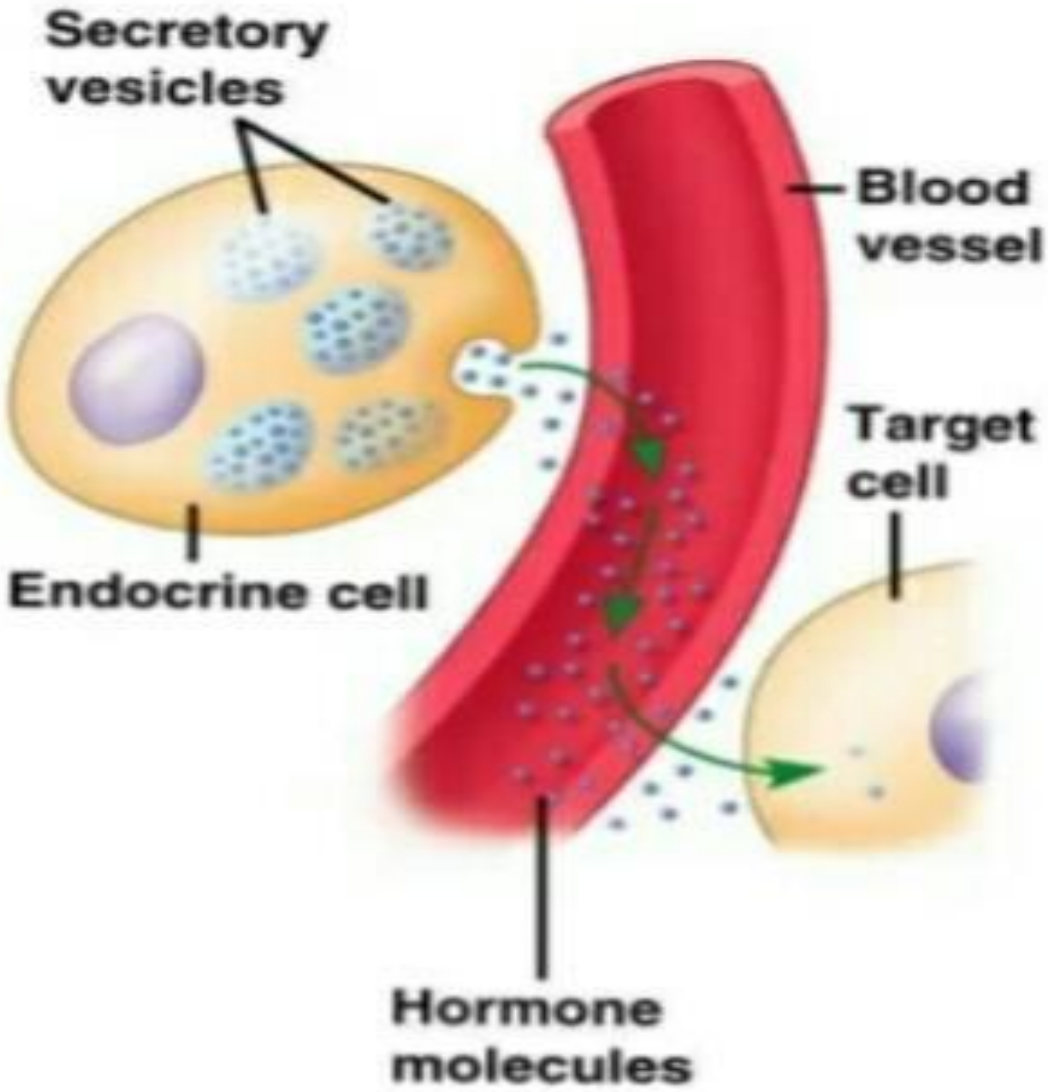
Endocrine system

Presented by –
Deepak KumarKashyap
Zoology department
D. P. Vipra college
Bilaspur

ENDOCRINE SYSTEM

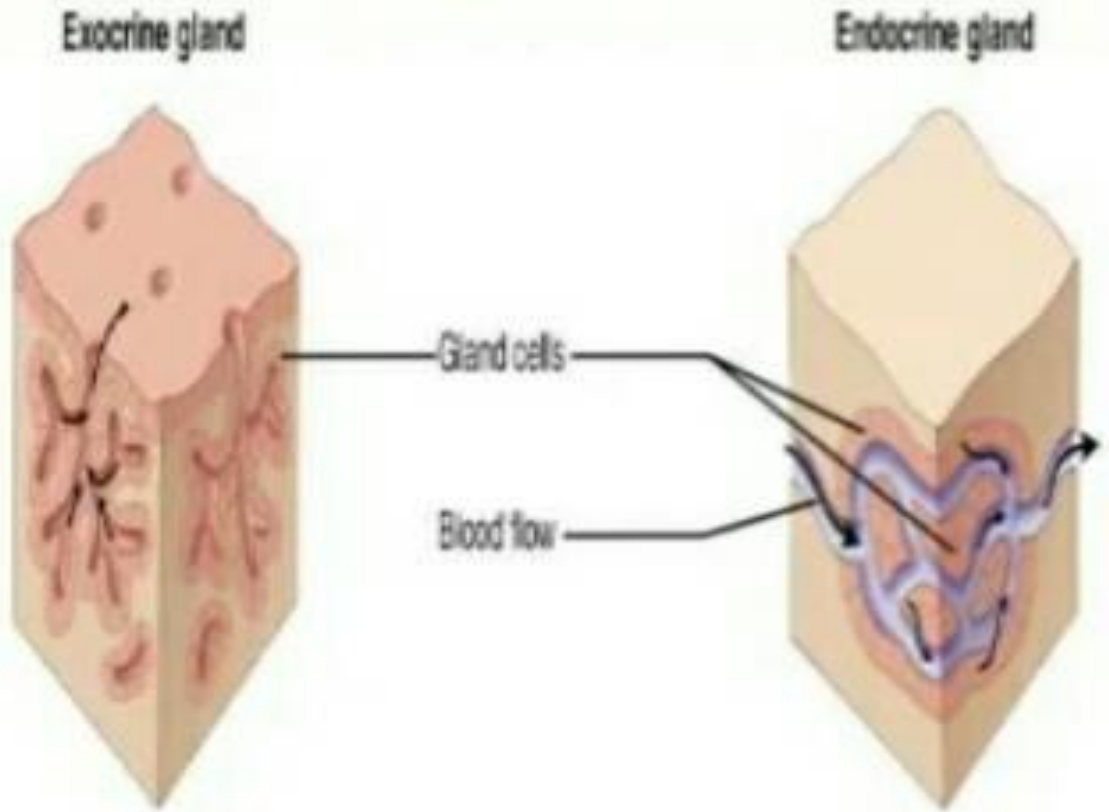
- Consists of glands and Group of capillaries which Facilitates diffusion of ***hormones*** to Bloodstream
- They are commonly referred as the ***ductless glands,*** because the hormones secreted directly into bloodstream



GLANDS:

An organ which secretes particular chemical substances for use in the body or for discharge into the surroundings.

- There are three types of glands in our body:
- **Endocrine glands**
- **Exocrine glands**
- **Heterocrine glands**

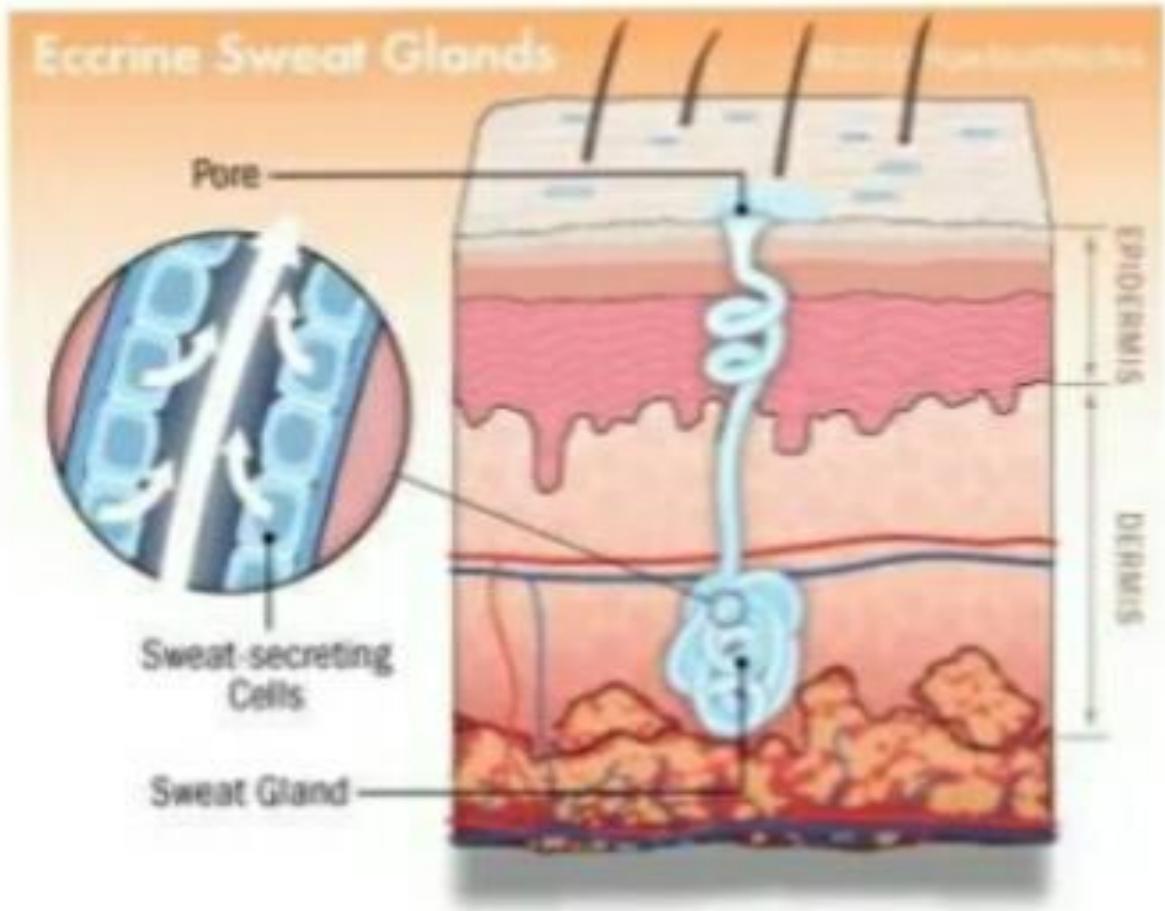


EXOCRINE GLANDS

Exocrine glands are glands that secrete their products into ducts

EXAMPLE:

- Sweat glands
- Salivary glands
- Mammary glands
- Stomach
- Liver

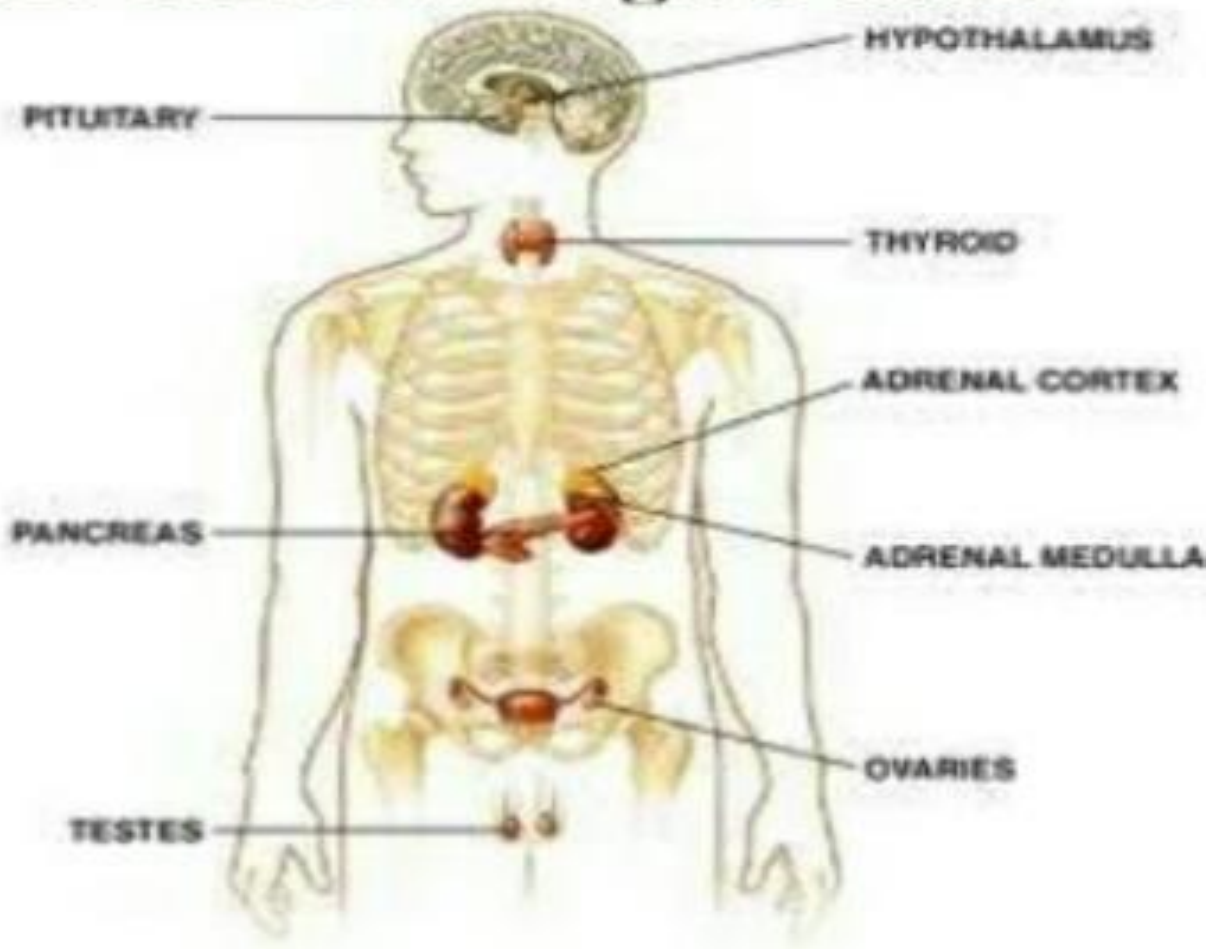


ENDOCRINE GLANDS

Glands that secrete their product (hormones) directly into the blood rather than through a duct

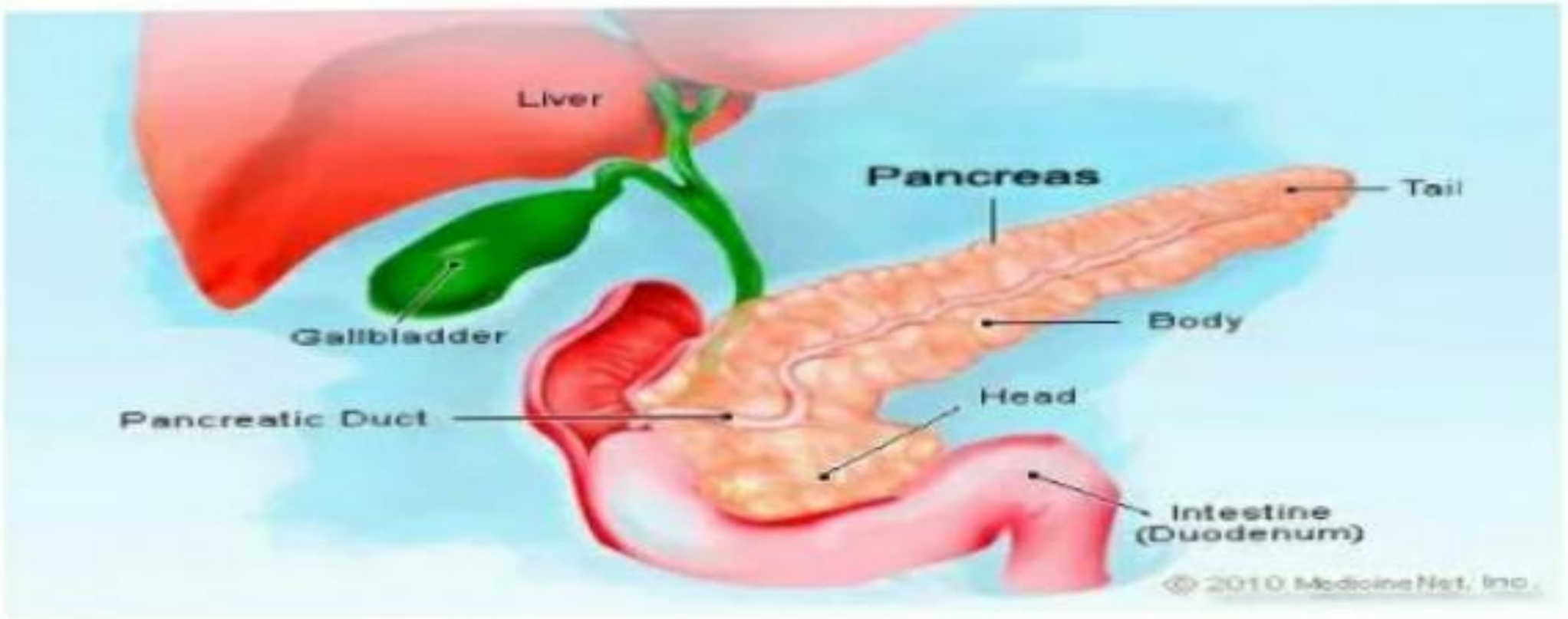
EXAMPLE:

- Pituitary gland
- Pancreas
- Thyroid gland
- Adrenal glands



HETEROCRINE GLANDS

These are glands that perform both exocrine and endocrine functions. For example ***pancreas***



- It consists of a number of glands:

Endocrine System Control

- Regulated by feedback mechanisms
  - 2 types of feedback mechanisms
    1. **positive** feedback
    2. **negative** feedback

Feedback Mechanisms

- **Negative Feedback** mechanisms:
  - Act like a thermostat in a home
  - As the temperature cools, the thermostat detects the change and triggers the furnace to turn on and warm the house
  - Once the temperature reaches its thermostat setting, the furnace turns off
    - Example: Body sugar increases after a meal, so the pancreas secretes **insulin**, which tells the body's cells to take in **glucose**. Once blood sugar levels reach normal, the pancreas stops making insulin.
    - Often used to maintain **homeostasis**

Negative Feedback

- **Homeostasis** is often maintained by two hormones who have antagonistic effects
  - Each hormone does the **opposite** of the other.
    - For example, if the blood pressure drops too low, the pituitary releases ADH, which causes the kidneys to reabsorb more water. If it the blood pressure increases too much, then the heart will release ANH, which will cause the kidneys to reabsorb less water.

Positive Feedback Mechanisms

- Positive Feedback mechanisms control events that can be out of control and do not require continuous adjustment
- Rarely used to maintain homeostasis
- Example of positive feedback found in childbirth
  - Oxytocin stimulates and enhances labor contractions
  - As labor continues, more oxytocin is produced
  - Intensifies contractions until the baby is outside birth canal
  - Oxytocin production stops and labor contractions stop

Thank-you