

Cells of Endocrine Glands

Why in News?

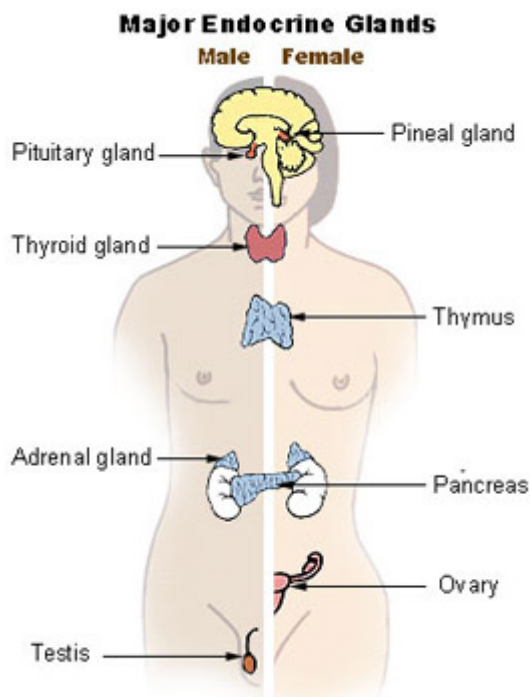
Recent analysis at the Weizmann Institute in Rehovot, Israel shows the number of cells in an endocrine gland that secrete hormones.

- **Endocrine Glands** - An organ that makes hormones that are released directly into the blood and travel to tissues and organs all over the body.
- **Functions** - It controls many body functions, including growth and development, metabolism, and fertility.

Hormones are signaling molecules found in most multicellular organisms which facilitate communication between organs and tissues in body that are far apart. The signals regulate a wide range of physiological and behavioral processes, such as growth and maturation, sleep, digestive functions, and stress responses.

- **8 Major glands** - They are scattered from head to toe

Endocrine Glands			
	Location	Shape &/ Size	Weight
Pineal gland	Midline of the brain	A grain of rice	50-150 mg
Pituitary gland	Hypothalamus of the brain	A pea	0.5-1 gram
Thyroid gland	Neck	A butterfly in shape	25 grams
Parathyroid gland	4 of which are in the neck	Size of a lentil seed	120 mg
Thymus	Between the lungs	Pyramid-shaped lymphoid organ	Average of 20 grams
Adrenal glands	Found atop each kidney	Triangular-shaped glands	5-10 grams in Adults
Pancreas	Behind the stomach	Tadpole-shaped gland	80-100 grams
Ovaries	On either side of uterus in female	Oval-shaped glands	
Testis	Underneath penis in male	Round organs	



- **Findings** - Every hormone producing cell has about 2,000 target cells.
- The number of hormone-secreting cells are in proportion to the number of cells that are targeted.
- Only 1-2% of cells in the pancreas produce insulin, which targets the liver and muscle cells.
- Parathyroid gland has about 10 million cells that secrete the parathyroid hormone.
- Adrenal cortex over 5 grams has 4.5 billion cells that secrete cortisol.

Thyroid hormones keep up metabolic balance throughout the body and Pancreas has a major role in secreting digestive enzymes.

References

1. [The Hindu| Analysis of Cells in each of the Endocrine Glands](#)
2. [NIH| Endocrine Glands](#)