

## Cells of Endocrine Glands

### Why in News?

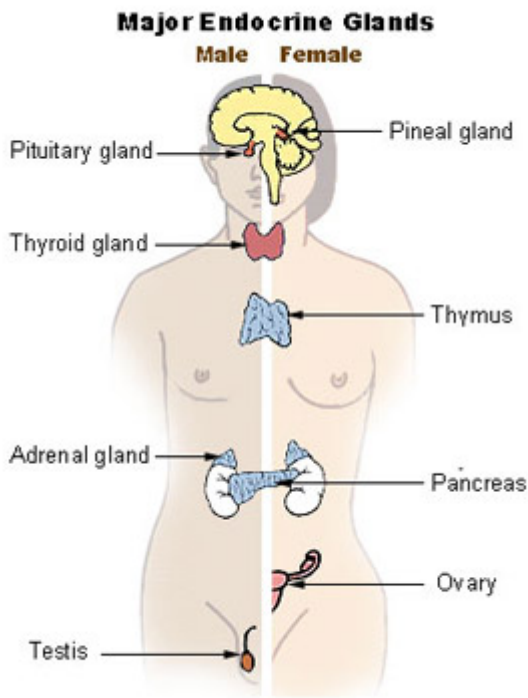
Recent analysis at the Weizmann Institute in Rehovot, Israel shows the number of cells in an endocrine gland that secrete hormones.

- **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
<b>Pineal gland</b>	Midline of the brain	A grain of rice	50-150 mg
<b>Pituitary gland</b>	Hypothalamus of the brain	A pea	0.5-1 gram
<b>Thyroid gland</b>	Neck	A butterfly in shape	25 grams
<b>Parathyroid gland</b>	4 of which are in the neck	Size of a lentil seed	120 mg
<b>Thymus</b>	Between the lungs	Pyramid-shaped lymphoid organ	Average of 20 grams
<b>Adrenal glands</b>	Found atop each kidney	Triangular-shaped glands	5-10 grams in Adults
<b>Pancreas</b>	Behind the stomach	Tadpole-shaped gland	80-100 grams
<b>Ovaries</b>	On either side of uterus in female	Oval-shaped glands	
<b>Testis</b>	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](#)