

Chapter - 2

16

WK-03
[016-349]

WED
JAN

M	T	W	T	F	S	S	DEC 2018
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17	18	19	20	21	22	23	
24	25	26	27	28	29	30	

Endocrine System

• Organ that can produce juice, enzyme, hormone, is called gland.

09 | (•) Exocrine gland - only juice, enzyme (7 no.)

(•) endocrine gland - only hormone (9 no.)

10 | (•) mixed gland - all juice, enzyme, hormone (1)

11 | Exocrine gland ductless in human body.

12 | (•) these are 7 in nos.

Location

- | | |
|--------------------------------------|-----------------|
| 01 1. Tear gland / lacrimal gland. | eye |
| 2. sweating gland | skin |
| 02 3. liver | abdominal part. |
| 4. milk producing / mammary gland | chest (female) |
| 03 5. salivary gland | mouth |
| 6. gastric gland | stomach. |
| 04 7. Pancreas. | Abdomen. |

05 | largest exocrine gland liver

smallest exocrine gland Tear gland.

06 | largest heaviest organ in body liver.

Endocrine gland ductless.

- (•) forms hormones inside the human body.
- (•) these are 9 in nos.

20

19

endo - glands hormones

(largest no. of glands in Brain)

Brain

thoracic cavity

chest

abdominal cavity

kidney

Below intestines

1. hypothalamus
2. pituitary gland
3. pineal body gland
4. thyroid gland
5. para-thyroid gland
6. thymus gland
7. pancreas
8. adrenal gland
9. gonads

Largest endocrine gland: thyroid gland
 Smallest endocrine gland: pineal body gland
 2nd smallest endocrine gland: pituitary gland

* hypothalamus

- it is a part of fore Brain.
- as a brain - feels hunger, thirst, pain, emotions, mood, dancing, sleeping, hobbies, love, hate.
- as a gland - secretes - TRH hormone (thyro tropin hormone) → regulates body temp.
- also called thermometer of human body.
- also called "super master gland" or "Master of Master".

Note - Pituitary gland - Master gland

controlled by hypo-thalamus

* Pituitary gland

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- 2nd smallest endocrine gland.
- releases max. no. of hormones (11 hormones).
- Master gland (controls 7 endocrine glands).

Hormone -

1. growth hormone or somatotrin
 - ↪ gives height
 - ↪ also called "height hormone".
 - ↪ hyposecretion - dwarfism
 - ↪ hypersecretion - gigantism.
2. ACTH
 - ↪ Adreno Cortico tropin hormone.
 - ↪ regulates "puberty age".
3. Oxytocin
 - ↪ also called "Birth hormone" or "love hormone".
 - ↪ generally in females.
 - ↪ decreases "labour pain".
 - ↪ stimulates mammary glands.

↓
when +nt in males

↓
gives Bisexuality in males

Note: to inc. the production of milk in cows and buffaloes - Oxytocin is injected.

4. Prolactin hormone

- ↪ normally in females.
- ↪ Regulates the quantity of milk.

Note. Pea size shaped - Pituitary gland.

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* Pineal Body Gland

- smallest endocrine gland
- found in Brain
- also called "Biological clock gland".

Hormone -

→ Melatonin

- also called "night hormone"
- Regulates "sleeping / wake up" process.
- also called "darkness hormone".

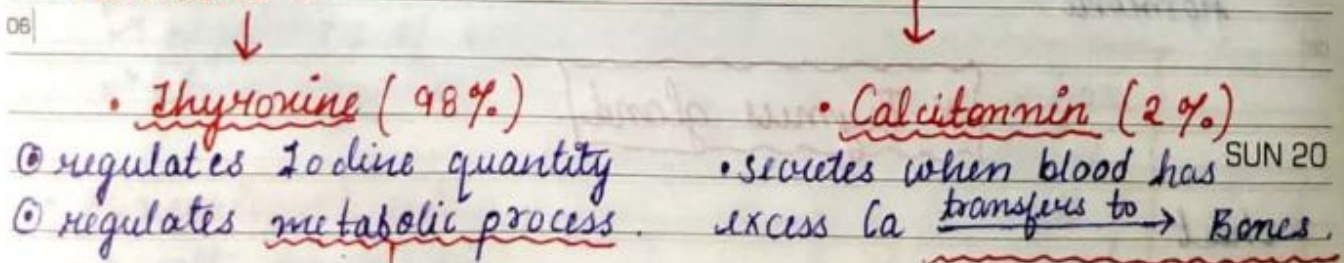
01 | hyposecretion - Insomnia

02 | hypersecretion - abnormal biological reactions.

* Thyroid Gland

- H-shaped or Butterfly shaped.
- in thoracic part.
- largest endocrine gland.

Hormone



digestive system

- ⊙ hyposecretion - goitre of Iodine.

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MON
JAN

Note. Max. no. of storage food —
have liver and then muscles.

* hyposecretion of thyroidium / thyroxine —

- weight gain
- swelling

* hyperthyroidism / hypersecretion of thyroxine —

- weight loss
- Bulging of eyes (also called grave's disease)

* Para thyroid gland — lobed structure

• present at the corners of thyroid gland.

* Hormone.

1. Para thyroni hormone.

- opp. function of calcitonin
- transfers excess Ca from bone to blood.

Note - Counteract hormones - Calcitonin & para thyroni hormone.

* Thymus gland.

- chest
- hormone.

(i) Thymosine.

- development of β and T lymphocytes.

3'f - fear fight flight

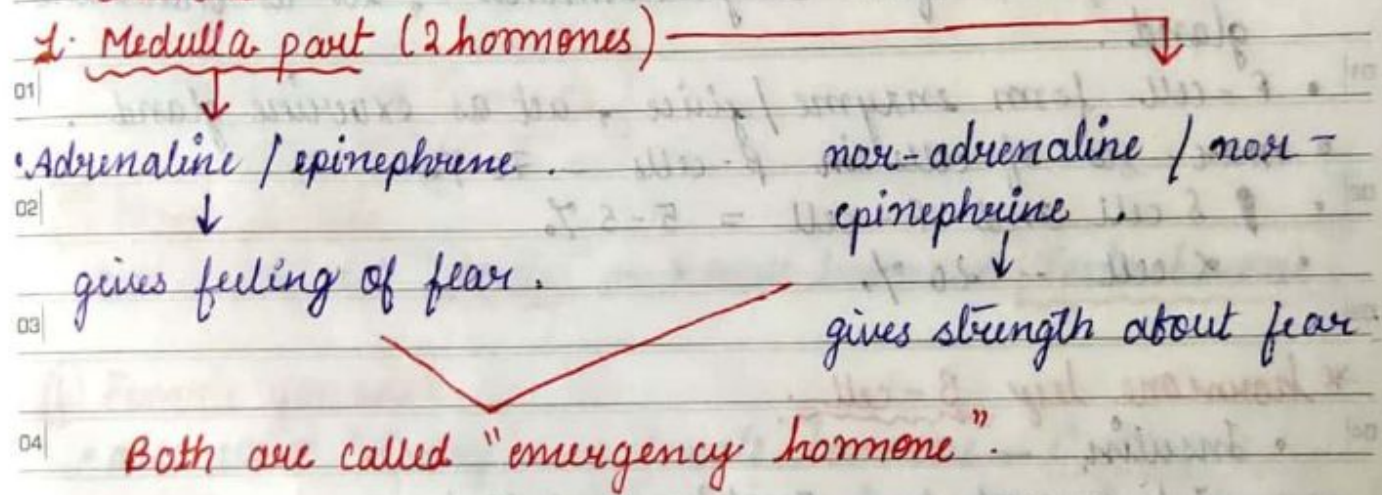
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Note: gland which size decreases in inc. in age - thymus gland.

* Adrenal Gland:

- Kidney
- outer part is called - cortex, inner part - medulla.
- also called "emergency gland, bodyguard gland, 3'f gland, 4's gland, Do or die gland."

Hormone -



2. Cortex part (3 hormones)
- glucocorticoids -
 - regulation of sugar amount
 - stress regulation

4's - sugar stress salt sexual

- Mineralocorticoids -
 - salt regulation

- Androgens -
 - development of sexual characters.

Blood sugar - glucose

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WK-04
(023-342)

WED
JAN

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DEC
2018

* Pancreas

- discovered by "Langerhans".
- a type of - 'mixed gland' or 'heterocrine gland'.
- 4 type of cells are found in Pancreas.
 - (a) α - cell
 - (b) β - cell
 - (c) δ - cell
 - (d) f - cell (pp cells) } also called "Islets of Langerhans"
- α , β , δ cells form only "hormones", act as endocrine gland.
- f - cell form enzyme / juice, act as exocrine gland.
- max. no. of cells in β - cells - 70%.
- δ cell and f - cell = 5-5%.
- α cell - 20%.

* hormone by β - cell:

- Insulin -
 - ✓ discovered by - Banting and Best.
 - ✓ It is used in formation of Insulin.
 - ✓ maintains quantity of sugar in Blood.
 - ✓ changes excess sugar \rightarrow glycogen (store) in liver.

Note - human body reserve food - glycogen.

✓ Insulin $\downarrow\downarrow\downarrow$ - diabetes.

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* hormone by α -cell

• glucagon -

→ discovered by Kimball & Minnallin.

→ changes glycogen → sugar (glucose)

→ also called - fasting hormone ; dieting hormone.

Note • counteract hormones - Insulin & glucagon

* hormone by δ -cell

• somatostatin -

→ regulates BMR (Basal metabolic Rate) (Digestion)

* Gonads

(a) Male gonads

• also called "testis" → male hormone Testosterone

(b) Female gonads

• also called "Ovary" → female hormone - Oestrogen

→ pregnancy hormone - Progesterone