

ENDOCRINE

NURSING STUDY NOTES

Endocrine nursing bundle



PRINTABLE PDF

DIGITAL DOWNLOAD

STUDY ANYWHERE

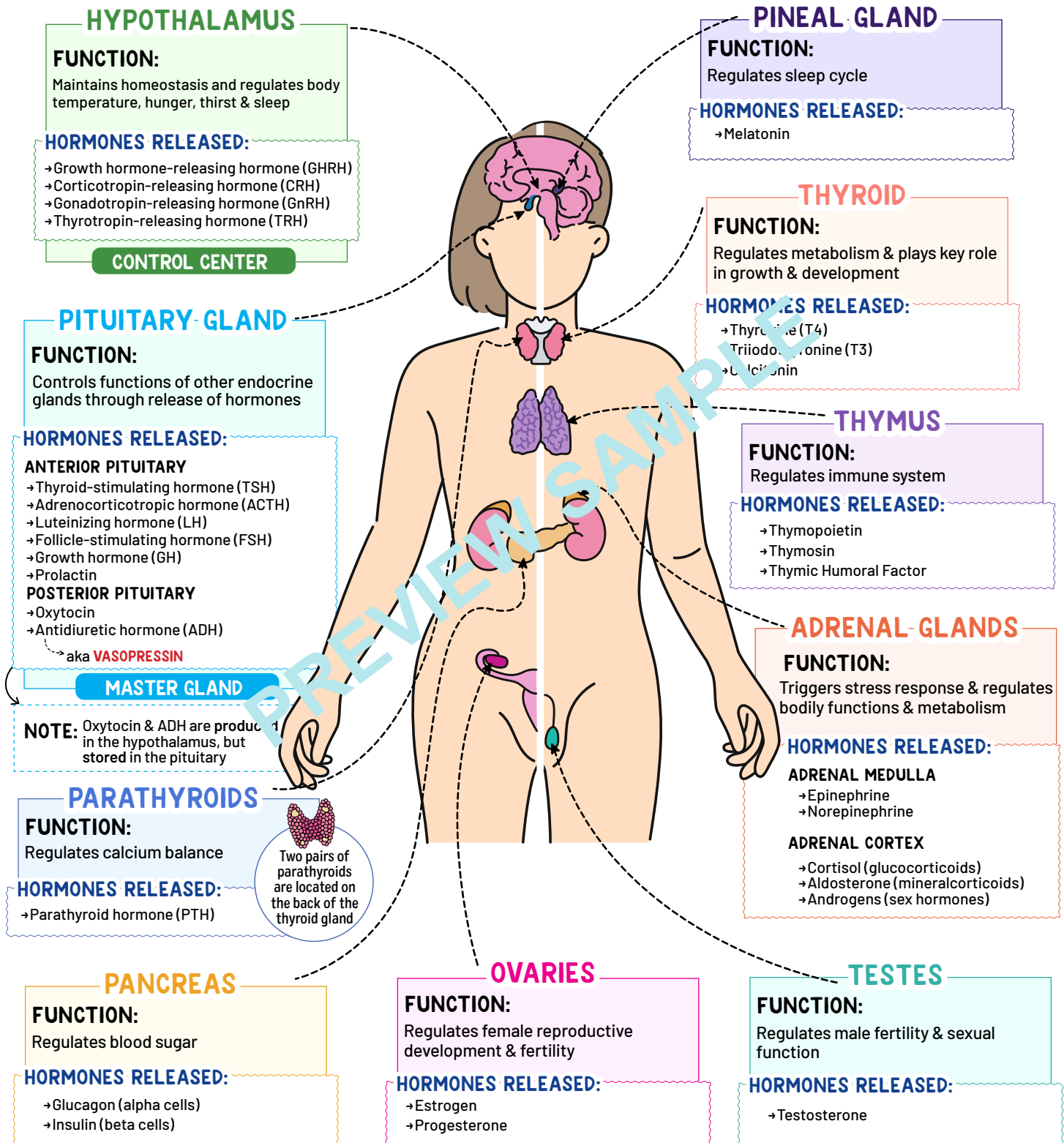
©2024 Lecture Notes

This product may not be copied, duplicated, re-distributed, or communicated in any way. It is strictly meant for personal use only. Copyright infringement is committed by any attempts to reproduce or redistribute any of the Lectures Note products illegally. Violators will face the worst legal consequences possible.

The content found in Lectures Note products is solely meant to be used for educational reasons; it is not meant to be used as clinical practice or medical advice. Before making any decisions about your health, speak with a healthcare provider. Data and values may vary throughout nursing programs. Only use this book as a source of additional information; give your nursing program's course materials priority. The content of this book may not be used or used ineffectively, and the author makes no promises and accepts no liability for such damages.

ENDOCRINE SYSTEM OVERVIEW

THE ENDOCRINE SYSTEM is made up of glands and organs that secrete hormones to maintain homeostasis throughout the body



HORMONE FUNCTIONS

HYPOTHALAMUS



GROWTH HORMONE-RELEASING HORMONE:

Stimulates pituitary gland to release growth hormone (GH)

CORTICOTROPIN-RELEASING HORMONE:

Stimulates pituitary gland to release ACTH

GONADOTROPIN-RELEASING HORMONE:

Stimulates pituitary gland to release FSH & LH

THYROTROPIN-RELEASING HORMONE:

Stimulates pituitary gland to release TSH

THYROID



TRIIODOTHYRONINE (T3) & THYROXINE (T4):

Metabolism, brain development, bone health, muscle control, heart and digestive function

CALCITONIN: Decreases serum calcium level by promoting calcium reabsorption to the bone

THINK CALCITONIN BRINGS CALCIUM INTO THE BONE

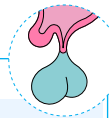
HYPOTHYROIDISM: ↓T3 ↓T4 ↑TSH

Positive Feedback Mechanism: Once thyroid hormones are low, the anterior pituitary gland is stimulated to produce more TSH

HYPERTHYROIDISM: ↑T3 ↑T4 ↓TSH

Negative Feedback Mechanism: Once thyroid hormones are high, anterior pituitary gland is downregulated to produce less TSH

PITUITARY



THYROID-STIMULATING HORMONE (TSH):

Stimulates thyroid gland to release T3 & T4

ADRENOCORTICOTROPIC HORMONE (ACTH):

Stimulates adrenals to release cortisol

LUTEINIZING HORMONE (LH): Stimulates testes to produce testosterone & triggers release of egg from ovaries

FOLLICLE-STIMULATING HORMONE (FSH): Stimulates testes to produce sperm and ovaries to produce eggs

PROLACTIN: Stimulates milk production & breast development

GROWTH HORMONE (GH): Stimulates growth of bones, muscles & tissues

OXYTOCIN: Stimulates uterine contractions and breastmilk ejection (+ feeling of love & bonding)

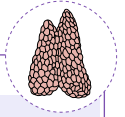
ANTIDIURETIC HORMONE (ADH): Promotes reabsorption of water in the kidneys & vasoconstricts blood vessels

PINEAL



MELATONIN: Regulates sleep-wake cycles

THYMUS

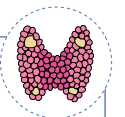


THYMOPOIETIN: Helps produce T-cells

THYMOSIN: Helps mature T-cells

THYMIC HUMORAL FACTOR: Regulates immune system response

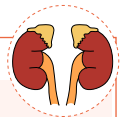
PARATHYROID



PARATHYROID HORMONE (PTH):

Stimulates release of calcium from the bone

ADRENAL GLANDS



CORTISOL (GLUCOCORTICOID): ↑ glucose

ALDOSTERONE (MINERALCORTICOID): ↑ Na ↓K

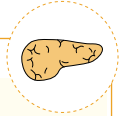
ANDROGENS: ↑ sex hormones

EPINEPHRINE & NOREPINEPHRINE:

Catecholamines released for "fight or flight" response

↑ BP ↑ HR ↑ blood glucose

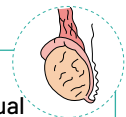
PANCREAS



INSULIN: Moves glucose from blood into body tissues to be used for energy

GLUCAGON: Stimulates liver to release glucose into the bloodstream to raise blood sugar

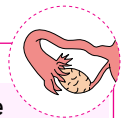
TESTES



TESTOSTERONE: Regulates development of sexual development and function & sperm production

↑ muscle mass ↑ bone mass ↓ fat mass

OVARIES

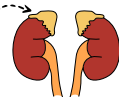


ESTROGEN: Regulates menstrual cycle and female secondary sex characteristics

PROGESTERONE: Regulates menstrual cycle, maintains uterine lining, & supports fetal development

ADDISON'S vs CUSHING'S

Two conditions that affect the **ADRENAL CORTEX** (OUTER LAYER OF ADRENAL GLANDS)



The adrenal glands sit on top of each kidney like a cap

ADRENAL CORTEX FUNCTIONS:

REMEMBER THE **3 S's**

- ① Cortisol (corticosteroids) increases **SUGAR**
- ② Aldosterone (mineralcorticoids) increases **SODIUM**
- ③ Androgens increase **SEX HORMONES**

ADDISON'S



HYPOSECRETION of adrenal cortex hormones
MAINLY ↓CORTISOL ↓ALDOSTERONE



Remember in **ADD**ison's you need to **ADD** steroids

CAUSES

- Cancer or trauma
- Infection of adrenals
- Tuberculosis

SYMPTOMS

EVERYTHING IS **LOW** (EXCEPT THE **2 P's**)

LOW blood pressure	LOW mood & energy
LOW blood sugar	LOW hair (alopecia)
LOW sodium (salt cravings)	LOW temp (cold intolerant)
LOW weight (weight loss)	LOW periods (amenorrhoea)
HIGH potassium (↓ Na= ↑K)	
HIGH pigmentation (bronze skin)	

COMPLICATION: ADDISONIAN CRISIS

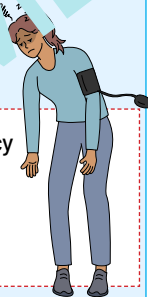
Life threatening severe acute adrenal insufficiency

MONITOR FOR:

- ▶ Severe hypotension
- ▶ Dysrhythmias (from ↑ K+)
- ▶ Profound fatigue

TREATMENT:

- ▶ IV glucocorticoids
- ▶ IV fluids
- ▶ Dextrose



TREATMENT

→ Lifelong steroids

-SONES EX: Prednisone & Hydrocortisone

WATCH FOR SIGNS OF TOO MANY STEROIDS
(WILL LEAD TO CUSHING'S)

→ Diet

- ▶ ↑ protein ↑ Na ↑ carbs ↓K+

CUSHING'S



HYPERSECRETION of adrenal cortex hormones
MAINLY ↑CORTISOL



Remember in **CUSH**ing's there's a **CUSHION** of steroids

CAUSES

- Long-term steroid use
- Tumors (adrenal or pituitary)
- Adrenal hyperplasia (enlarged adrenal glands)

SYMPTOMS

EVERYTHING IS **HIGH & BIG** (EXCEPT POTASSIUM)

HIGH blood pressure	BIG face (moon face)
HIGH blood sugar	BIG belly (truncal obesity)
HIGH sodium	BIG hair (hirsutism)
HIGH weight (weight gain)	BIG stretch marks (purple striae)
LOW potassium (↑ Na= ↓K+)	

- Buffalo hump (fat pad on back of neck)
- Thin extremities
- Easy bruising & petechiae
- Slow wound healing (↑ risk of infection)
- ↑ risk of fractures (brittle bones/ osteoporosis from ↑steroid levels)



TREATMENT

- Slowly decrease steroids (never abruptly!)
- Adrenalectomy: if cause is adrenal cortex (patient will require lifelong steroids!)
- Hypophysectomy: if cause is pituitary tumor