Endocrine Dysfunctions

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Introduction

- The endocrine system is **a complex network of glands and organs**. It makes hormones that are released by internal glands directly into the circulatory system They’re responsible for almost every cell, organ, and function in the body.

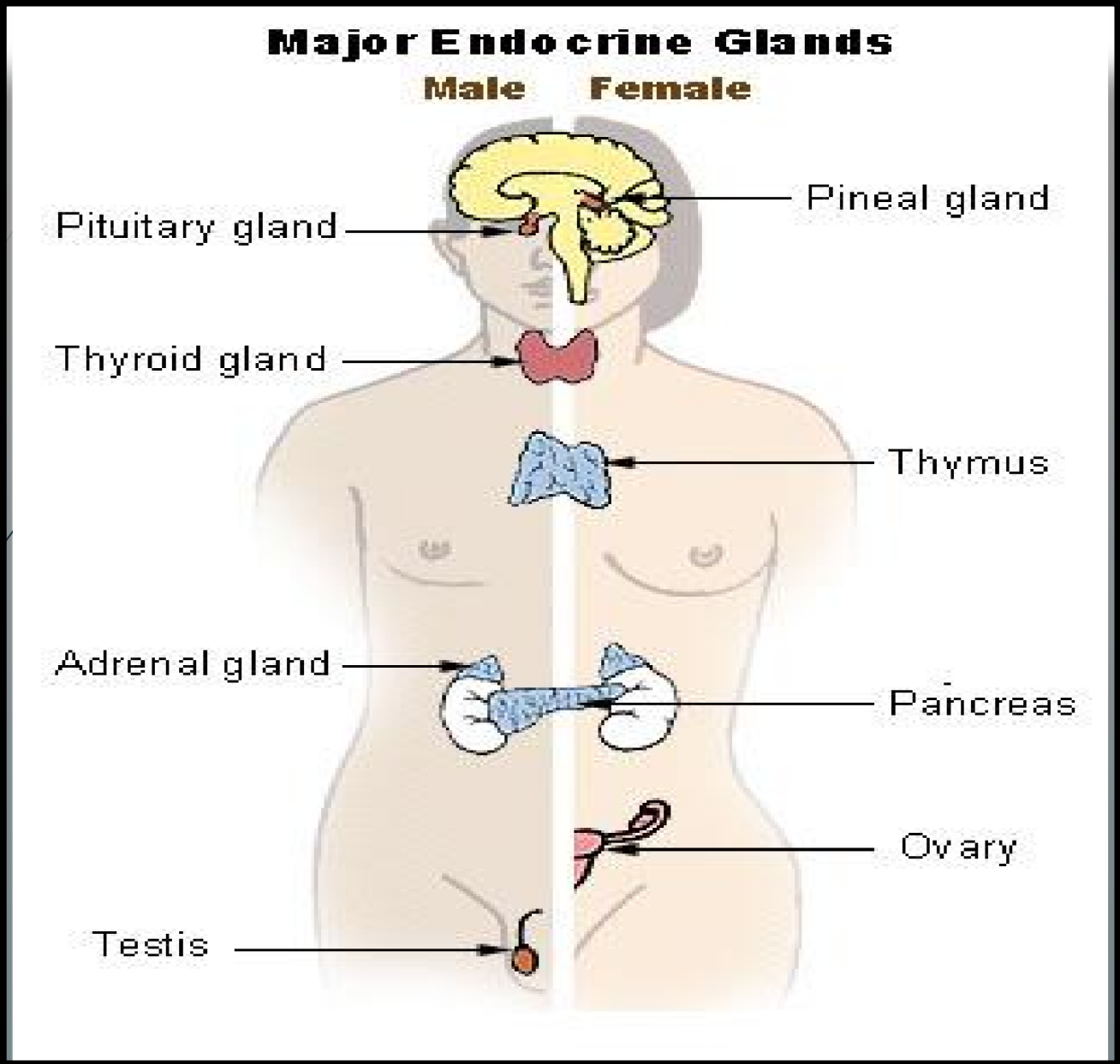
Functions of Endocrine System

- Controls basic body functions
- Metabolism
- Growth
- Sexual development
- fluid and electrolyte balance
- Response to stress.

Endocrine Glands

- **Pituitary gland** —A pea-sized gland that lies within a deep bony depression at the base of the cranium
- **Thyroid gland**—Two large lateral lobes and a connecting portion, the isthmus, situated on the anterior aspect of the neck just below the larynx
- **Parathyroid glands**—Four or five small round bodies attached to the posterior surfaces of the lateral lobes of the thyroid gland
- **Adrenal glands**—Pyramid-shaped glands situated atop the kidneys, fitting like caps over these organs
- **Ovaries**—Glands located in the female pelvis on each side of the uterus at the fimbriated end of the fallopian tubes

- **Testes**—Oval-shaped glands situated within the male scrotum
- **Islets of Langerhans**—Small clusters of endocrine cells within the pancreas
- **Thymus**—A gland situated behind the sternum and below the thyroid gland; plays an important role in immunity but only during fetal life and early childhood
- **Gastrointestinal glands**—Mucosal lining of the gastrointestinal tract containing cells that produce hormones that play important roles in controlling and coordinating secretory and motor activities of digestion


Major Endocrine Glands
Male
Female
Pituitary gland
Pineal gland
Thyroid gland
Thymus
Adrenal gland
Pancreas
Ovary
Testis

DIABETES MELLITUS

DIABETES MELLITUS (DM)

- DM is a chronic disorder of metabolism characterized by hyperglycemia and insulin resistance. It is the most common metabolic disease, resulting in metabolic adjustment or physiologic change in almost all areas of the body.

- DM is a condition in which sufficient amounts of insulin are either not produced or the body is unable to use the insulin that is produced
- If uncontrolled DM can be life threatening and cause serious complications affect all body system

TYPES OF DM

Type 1 diabetes

- Is characterized by destruction of the pancreatic beta cells, which produce insulin; this usually leads to absolute insulin deficiency .
- Is more recognizable in children
  - Body's immune system destroys cells in the pancreas that produce insulin

Insulin-dependent diabetes mellitus (IDDM)

- **Type 2 diabetes**
  - usually arises because of insulin resistance in which the body fails to use insulin properly combined with relative insulin deficiency.
  - "adult onset diabetes“ who are overweight and sedentary.
- **Non–insulin-dependent diabetes mellitus (NIDDM),**

Pathophysiology of Diabetes

- Insulin helps transfer glucose into cells so body can use it
- As destruction cont's, insulin secretion ↓
- As insulin ↓ blood glucose level ↑ and glucose in cells ↓
- As serum glucose reaches 180 mg/dL, renal tubules cannot reabsorb all glucose, so spilled in urine
- Electrolytes (Na, K, Ca, Ph, & Mg) excreted too (polyuria & dehydration)
- Polydipsia- attempt to relieve dehydration

Clinical Manifestations

- Polyphagia
- Polyuria
- Polydipsia
- Weight loss
- Enuresis or nocturia
- Shortened attention span
- Blurred vision
- Poor wound healing
- Fatigue
- Flushed skin
- Elevated blood glucose levels
- Glucosuria
- Dehydration in some cases
- Dehydration
- Electrolyte imbalance

Type 1 DM: Treatment

- **The goals of treatment**

  - Keep BS within normal ranges
  - Resume normal life routine
  - Prevent complications

Treatment is based on:

- Daily insulin injections (mix of rapid-acting-regular- and
  - intermediate acting- lente- insulin) It may be two or three injections/day which is 30 minutes before meal
- Balanced diet that contains, fat, protein, CHO and vitamins
- Concentrated sweets are discouraged
- Exercise, regular blood & urine testing

Sites of insulin injection

Complications of diabetes mellitus:

- -Hypoglycemia. -Diabetic ketoacidosis.
- -Diabetic retinopathy.
- -Diabetic nephropathy.
- -Dental decay
- -Insulin resistance, allergic reactions and
- local skin irritations, abscesses

Nursing Care

- **Nursing diagnosis: risk for injury R/T insulin deficiency**

- Administer the most suitable dose of insulin
- Safe and accurate insulin injection
- Educate parents about types of insulin
- Regular check of BS (blood sugar)

Nursing diagnosis: risk for injury R/T hypoglycemia

- Recognize of S& S of hypoglycemia
- Administer glucagon to unconscious child
- Regular check of BS (blood sugar)

Nursing diagnosis: knowledge deficit R/T care of a child with newly diagnosed DM

- Very little food restrictions, though balanced diet
- Teach proper ways of storing mixing and administering insulin
- Dental care and regular ophthalmic examination
- Teach parents about S&S and management of hypo/hyperglycemia
- Regular check of BS (blood sugar)
- Keeping records of blood/urine tests, insulin, food

Diabetes Mellitus Type 2

- **Nursing care**
  - Provide nutrition teaching (decreasing calories)
  - Encourage behavioral changes: increasing activity
  - Lifestyle modification to the entire family to ensure compliance
  - Teach family about oral hypoglycemic agent
  - Monitor for complications

Thank you