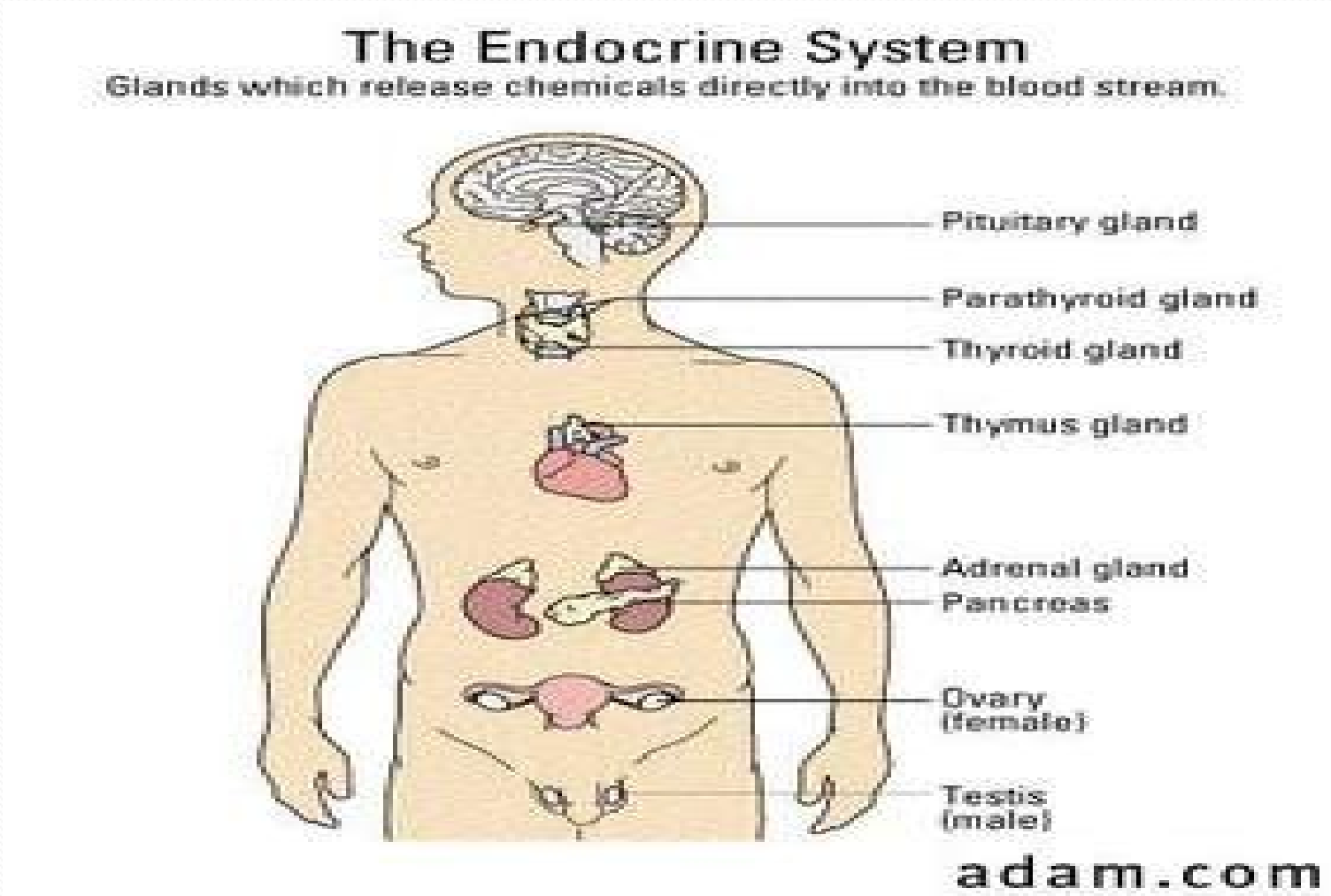
ENDOCRINE DISORDERS



JUVINILE DIABETES MELLITUS

Definition: Type 1 diabetes, once known as juvenile diabetes or insulin-dependent diabetes, is a chronic condition in which the pancreas produces little or no insulin, a hormone needed to allow sugar (glucose) to enter cells to produce energy. The far more common type 2 diabetes occurs when the body becomes resistant to insulin or doesn't make enough

ETIOLOGY:

- Various factors may contribute to type 1 diabetes, including genetics and exposure to certain viruses. Although type 1 diabetes usually appears during childhood.
- **The exact cause of type 1 diabetes is unknown**. In most people with type 1 diabetes, the body's own immune system — which normally fights harmful bacteria and viruses — mistakenly destroys the insulin-producing (islet) cells in the pancreas. Genetics may play a role in this process, and exposure to certain environmental factors, such as viruses, may trigger the disease.
- ***Chemicals and drugs***
- Some chemicals and drugs preferentially destroy pancreatic cells

Risk factors

- **Family history.** Anyone with a parent or sibling with type 1 diabetes has a slightly increased risk of developing the condition.
- **Genetics.** The presence of certain genes indicates an increased risk of developing type 1 diabetes
- **Age.** Although type 1 diabetes can appear at any age, it appears at two noticeable peaks. The first peak occurs in children between 4 and 7 years old, and the second is in children between 10 and 14 years old.
- Exposure to certain viruses, such as the Epstein-Barr virus, Coxsackie virus, mumps virus and cytomegalovirus
- Early exposure to cow's milk

Conti….

- Low vitamin D levels
- Drinking water that contains nitrates
- Having a mother who had preeclampsia during pregnancy
- Being born with jaundice

Clinical manifestation

- Increased thirst
- Frequent urination
- Bedwetting in children who previously didn't wet the bed during the night
- Extreme hunger
- Unintended weight loss
- Irritability and other mood changes
- Fatigue and weakness
- Blurred vision

PATHOPHYSIOLOGY

- Lack of insulin
- Metabolic changes, physiological changes in all parts of the body.
- Glucose does not leave the blood to enter the muscles and fat cells.
- Blood glucose level increases (hyperglycemia)
- Kidneys are unable to reabsorbs all the glucose in the glomerular filtrate, glucose appears in the urine.

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- Large amount of electrolyte are also excreted by the kidneys.
- Due to diuretic action there is excessive urination (polyuria) and dehydration
- Excessive thrist(polydipsia).

DIAGNOSIS:.

- **Glycated hemoglobin (A1C) test.** This blood test indicates your average blood sugar level for the past two to three months. It works by measuring the percentage of blood sugar attached to hemoglobin, the oxygen-carrying protein in red blood cells. The higher your blood sugar levels, the more hemoglobin you'll have with sugar attached. An A1C level of 6.5 percent or higher on two separate tests indicates you have diabetes.

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- **Random blood sugar test.** A blood sample will be taken at a random time. Blood sugar values are expressed in milligrams per deciliter (mg/dL) or millimoles per liter (mmol/L). Regardless of when you last ate, a random blood sugar level of 200 mg/dL (11.1 mmol/L) or higher suggests diabetes, especially when coupled with any of the signs and symptoms of diabetes, such as frequent urination and extreme thirst.
- **Fasting blood sugar test.** A blood sample will be taken after an overnight fast. A fasting blood sugar level less than 100 mg/dL (5.6 mmol/L) is normal. A fasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered prediabetes. If it's 126 mg/dL (7 mmol/L) or higher on two separate tests, you have diabetes.

Medical management

- **Insulin and other medications**
- Anyone who has type 1 diabetes needs lifelong insulin therapy. After the diagnosis, there may be a "honeymoon" period, during which blood sugar is controlled with little or no insulin. However, this phase doesn't last.
- **Types of insulin** are many and include:
- Rapid-acting insulin
- Long-acting insulin
- Intermediate options
- Examples are regular insulin (Humulin 70/30, Novolin 70/30, others), insulin isophane (Humulin N, Novolin N), insulin glulisine (Apidra), insulin lispro (Humalog) and insulin aspart (Novolog). Long-acting insulins include glargine (Lantus) and detemir (Levemir).

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- additional medications also may be prescribed for people with type 1 diabetes, such as:
- **Pramlintide (Symlin).** An injection of this medication before you eat can slow the movement of food through your stomach to curb the sharp increase in blood sugar that occurs after meals.
- **High blood pressure medications.** Your doctor may prescribe medications known as angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), because these medications also can help keep your kidneys healthy. These medications are recommended for people with diabetes that have blood pressures above 140/80 millimeters of mercury (mm Hg).

TREATMENT

- Treatment for type 1 diabetes includes:
- Taking insulin
- Carbohydrate counting
- Frequent blood sugar monitoring
- Eating healthy foods
- Exercising regularly and maintaining a healthy weight.
- Avoid pure sugar food, increase intake of fiber.
- Drink plenty of fluids

- **Nursing management**
- Administer medication as ordered.
- Monitor hypoglycemia occurs, give rapidly absorbed carbohydrates such as orange juice or iv dextrose as ordered.
- Administer intravenous fluids and insulin replacement for hyperglycemia crisis as ordered.
- Treat all injuries, cuts and blisters immediately
- Administer insulin as ordered, commonly twice daily.
- Rotate injection sites to prevent lipodystrophy
- Explain about sugar free diet and follow-up care.

Nursing diagnosis

- Risk for Activity Intolerance related to disease condition.
- Risk for Infection related to disease condition
- Imbalanced Nutrition: Less than Body Requirements related to disease condition
- Anxiety to the parent related to disease condition
- Knowledge deficit of parents, child related to diet and disease condition.