
USE U-100 INSULIN ONLY
1 cc
DIABETES

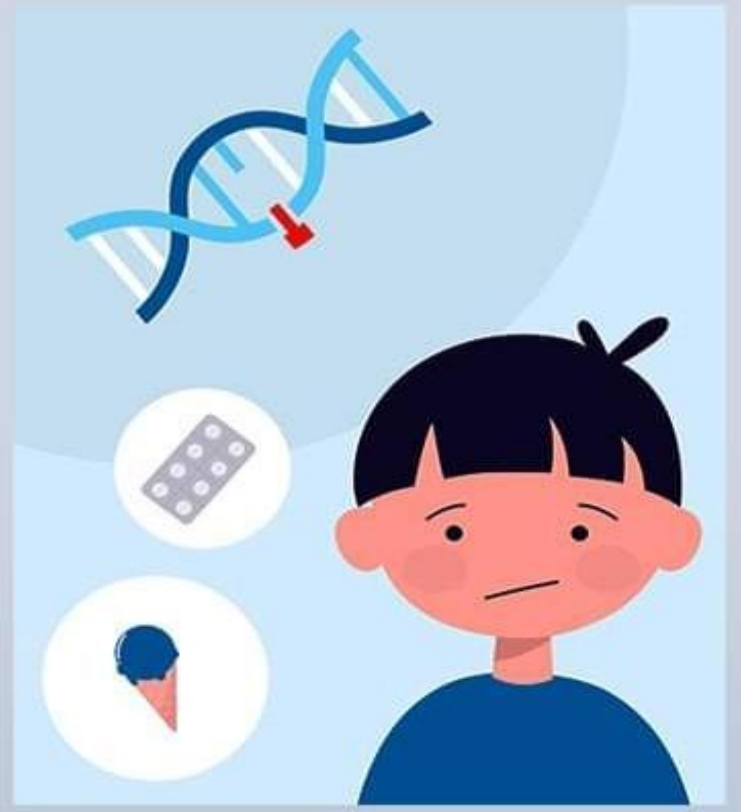
Diabetes mellitus

- is a group of metabolic diseases characterized by increased levels of glucose in the blood (**hyperglycemia**) resulting from defects in insulin secretion, insulin action, or both .
- **The major sources of this glucose** are absorption of ingested food in **the gastrointestinal tract** and formation of glucose by **the liver** from food substances.

- **Hyperglycemia: elevated blood glucose level; fasting level greater than 110 mg/dL**
- **Hypoglycemia: low blood glucose level (less than 60 mg/dL .**

- **Insulin: a hormone secreted by the beta cells of the islets of Langerhans of the pancreas that is necessary for the metabolism of carbohydrates, proteins, and fats; a deficiency of insulin results in diabetes mellitus**

Types of **DIABETES**



Type I
DIABETES



Type II
DIABETES



Gestational
DIABETES

Type 1 (5–10% of all diabetes)

- (Previously classified as **juvenile diabetes**, **juvenile-onset diabetes**, **ketosis-prone diabetes**, **brittle diabetes** and **insulin-dependent diabetes mellitus [IDDM]) .**
- Onset any age, but usually young **(<30 y)**
- Etiology includes genetic, immunologic, and environmental factors (eg, virus).

2.Type 2 (90–95% of all diabetes: (obese—80% of type 2; nonobese—20% of type 2)

- (Previously classified as adult-onset diabetes ,maturity-onset diabetes, ketosis-resistant diabetes, stable diabetes and non–insulin-dependent diabetes [NIDDM])
- Onset any age, usually over 30 y
- Causes include obesity, heredity, and environmental factors.
- Most patients can control blood glucose through weight loss if obese
- Oral antidiabetic agents may improve blood glucose levels if dietary modification and exercise are unsuccessful
- May need insulin on a short-term or long-term basis to prevent hyperglycemia
- Acute complication: hyperglycemic hyperosmolar nonketotic syndrome

3. Gestational diabetes

- **Onset during pregnancy**, usually in the second or third trimester(Occurs in about 2–5% of all pregnancies)
- Due to hormones secreted by the **placenta**, which inhibit the action of insulin
- Above-normal risk for perinatal complications, especially **macrosomia** (abnormally large babies)
- **Treated with diet and, if needed, insulin to strictly maintain normal blood glucose levels.**
- 30–40% will develop overt diabetes (usually type 2) within 10 years (especially if obese)
- **Risk factors include obesity, age older than 30 years, family history of diabetes, previous large babies (>9 lb)**
- Screening tests (glucose challenge test) should be performed on all pregnant women between
- 24- and 28-weeks gestation
- **Should be screened for diabetes periodically**

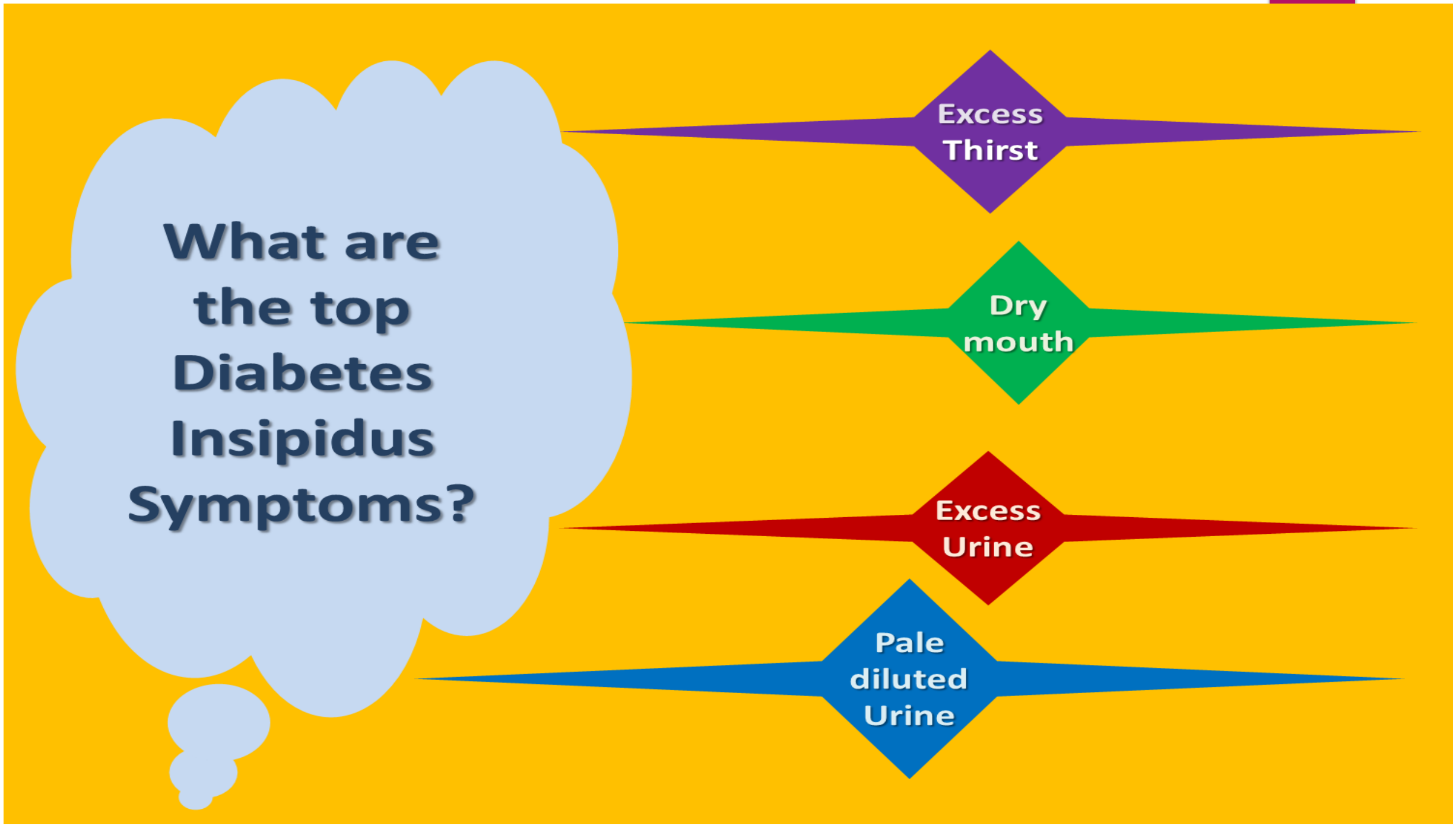

What are the top Diabetes Insipidus Symptoms?
Excess Thirst
Dry mouth
Excess Urine
Pale diluted Urine

CHART 41-1



Risk Factors for Diabetes Mellitus

- Family history of diabetes (ie, parents or siblings with diabetes)
- Obesity (ie, ≥20% over desired body weight or BMI ≥27 kg/m^2)
- Race/ethnicity (eg, African Americans, Hispanic Americans, Native Americans, Asian Americans, Pacific Islanders)
- Age ≥45 y
- Previously identified impaired fasting glucose or impaired glucose tolerance
- Hypertension (≥140/90 mm Hg)
- HDL cholesterol level ≤35 mg/dL (0.90 mmol/L) and/or triglyceride level ≥250 mg/dL (2.8 mmol/L)
- History of gestational diabetes or delivery of babies over 9 lb

- NURSING ALERT

- Ketone bodies are acids that disturb the acid–base balance of the body when they accumulate in excessive amounts.
- The resulting diabetic ketoacidosis (DKA)
- may cause **signs and symptoms such as abdominal pain, nausea, vomiting, hyperventilation, a fruity breath odor, and, if left untreated, altered level of conscious-ness, coma, and death.**
- Initiation of insulin treatment, along with fluid and electrolytes as needed, is essential to treat hyperglycemia and DKA and rapidly improves the metabolic abnormalities.



ALWAYS HUNGRY &
UNEXPLAINED WEIGT LOSS



FREQUENT URINATION



WEIGHT GAIN



ALWAYS THIRSTY

SIGN OF DIABETES



NUMB HANDS & FEET



WOUNDS HEAL SLOWLY



DIZZUNESS



EXTREAM FATIGUE

Laboratory Examination

1. • HgbA1C (A1C)
2. • Fasting lipid profile
3. • Test for microalbuminuria
4. • Serum creatinine level
5. • Urinalysis

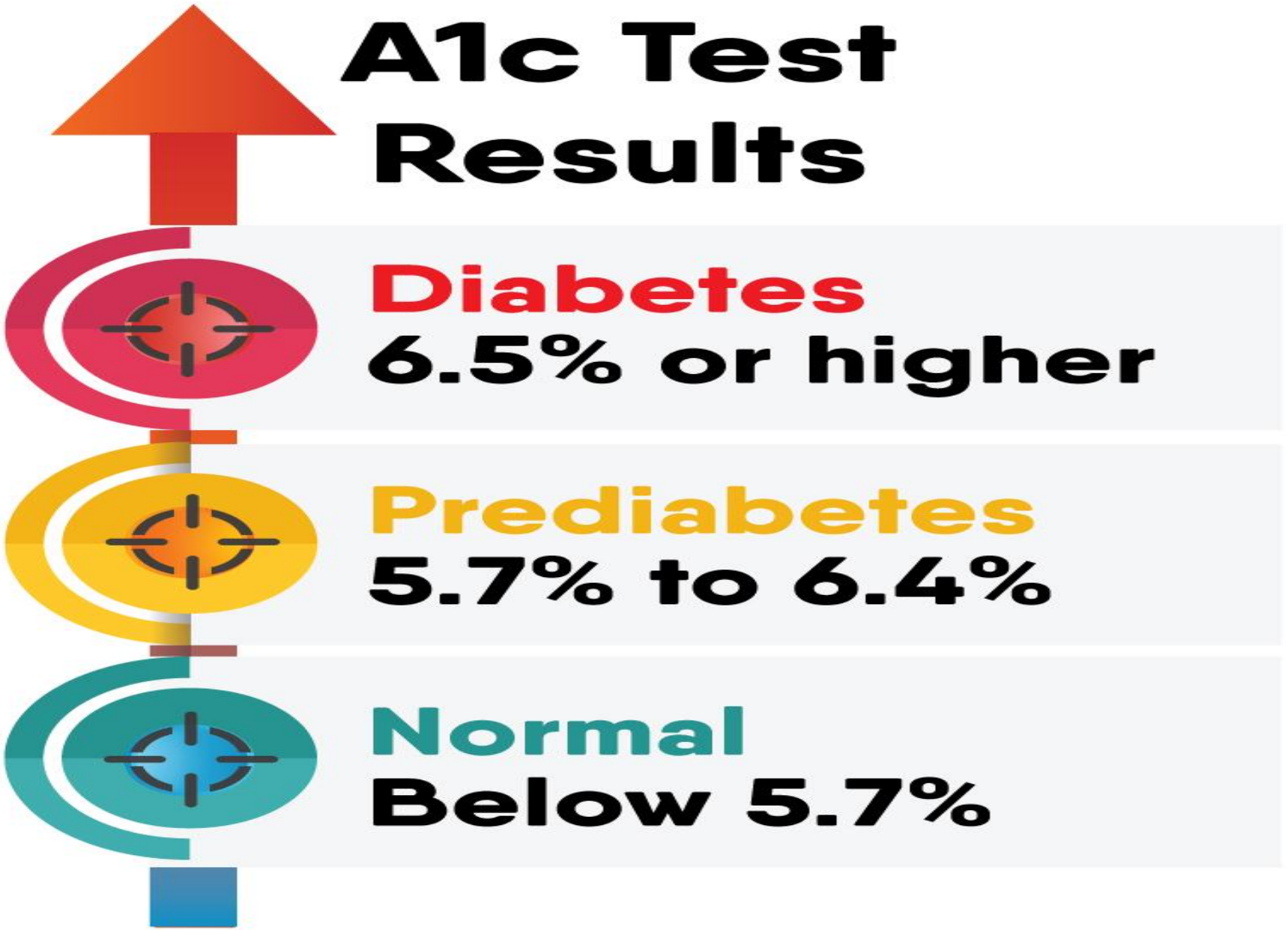
Why is the Hemoglobin A1c (HbA1c) test important?

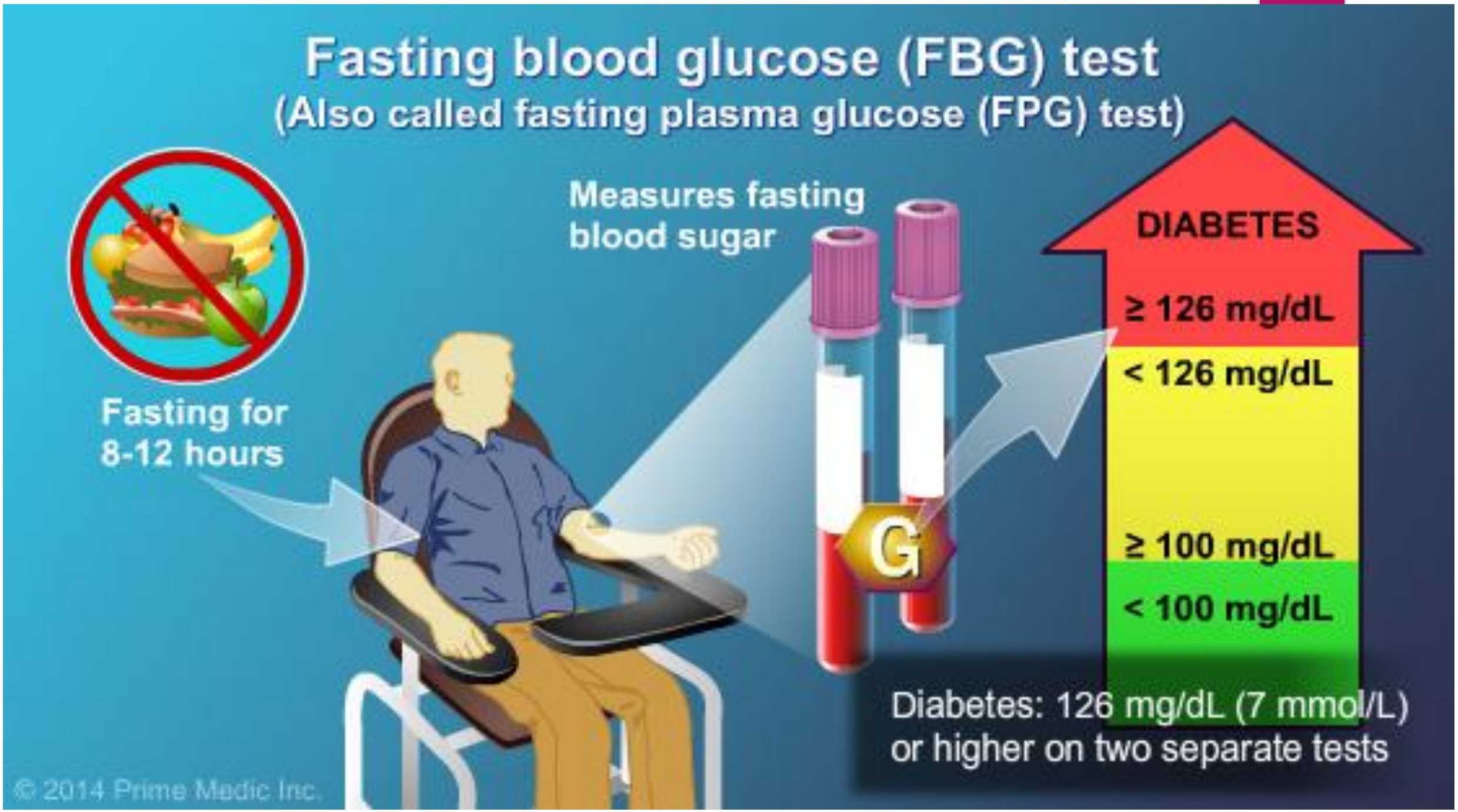
- To diagnose diabetes
- To monitor blood glucose control in people with known diabetes

This test evaluates the
average amount of glucose in the blood over the last 2 to 3 months

HbA1c readings can be interpreted as below:

A1c Level		Indication
Less than 5.7%	:	Normal
5.7% to 6.4%	:	Prediabetes
6.5%	:	Diabetes


A1c Test Results
Diabetes
6.5% or higher
Prediabetes
5.7% to 6.4%
Normal
Below 5.7%


Fasting blood glucose (FBG) test
(Also called fasting plasma glucose (FPG) test)
Measures fasting blood sugar
Fasting for 8-12 hours
DIABETES
≥ 126 mg/dL
< 126 mg/dL
≥ 100 mg/dL
< 100 mg/dL
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Diabetes: 126 mg/dL (7 mmol/L) or higher on two separate tests
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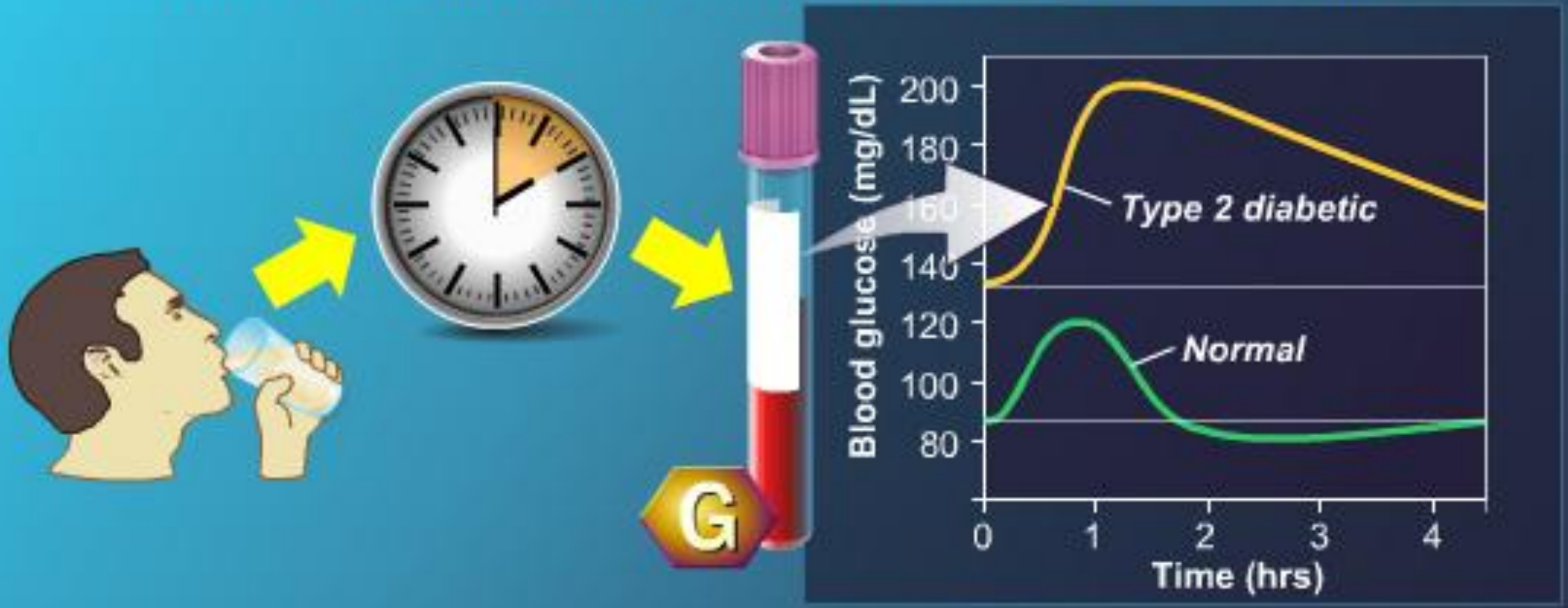
Oral glucose tolerance test (OGTT)

Measures blood glucose 2 hours after drinking a glucose liquid



Diabetes: 200 mg/L or higher

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Table 41-3 CATEGORIES OF INSULIN

Time Course	Agent	Onset	Peak	Duration	Indications
Rapid-acting	Lispro (Humalog)	10–15 min	1 h	2–4 h	Used for rapid reduction of glucose level, to treat postprandial hyperglycemia, and/or to prevent nocturnal hypoglycemia
	Aspart (Novolog)	5–15 min	40–50 min	2–4 h	
	Glulisine (Apidra)	5–15 min	30–60 min	2 h	
Short-acting	Regular (Humalog R, Novolin R, Iletin II Regular)	½–1 h	2–3 h	4–6 h	Usually administered 20–30 min before a meal; may be taken alone or in combination with longer-acting insulin
Intermediate-acting	NPH (neutral protamine Hagedorn)	2–4 h	4–12 h	16–20 h	Usually taken after food
	(Humulin N, Iletin II Lente, Iletin II NPH, Novolin L [Lente], Novolin N [NPH])	3–4 h	4–12 h	16–20 h	
Very long-acting	Glargine (Lantus)	1 h	Continuous (no peak)	24 h	Used for basal dose
	Detemir (Levemir)				

CHART 41-7

PATIENT EDUCATION
Self-Injection of Insulin

1. With one hand, stabilize the skin by spreading it or pinching up a large area.



Pinching the skin

2. Pick up syringe with the other hand and hold it as you would a pencil. Insert needle straight into the skin.*



Inserting the needle into the skin

3. To inject the insulin, push the plunger all the way in.



Injecting the insulin

4. Pull needle straight out of skin. Press cotton ball over injection site for several seconds.



Removing the needle and holding cotton ball over site

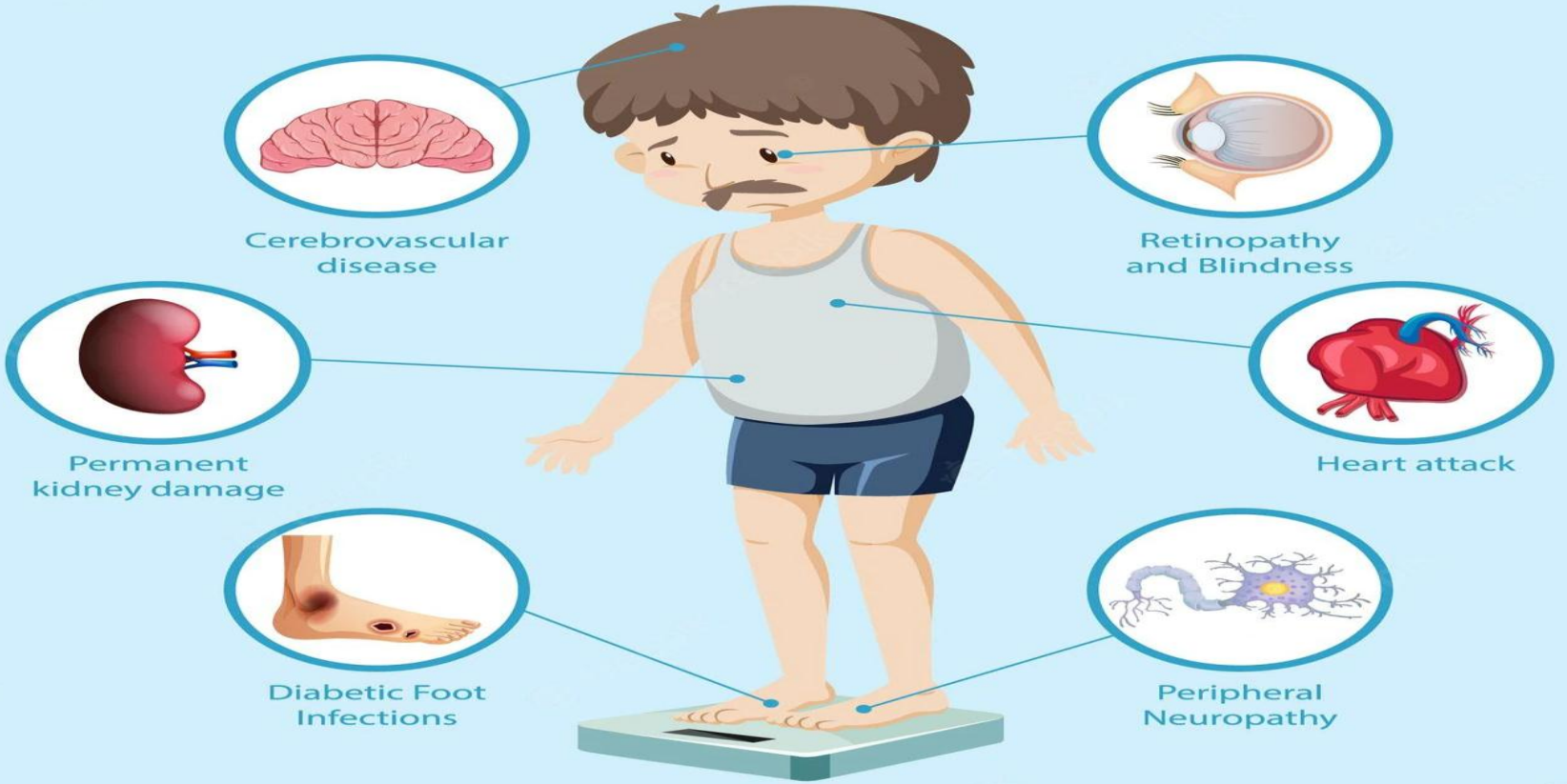
5. Use disposable syringe *only once* and discard into hard plastic container (with a tight-fitting top) such as an empty bleach or detergent container.† Follow state regulations for disposal of syringes and needles.



Disposing of syringe

DIABETES COMPLICATIONS





Prevention



Healthful Diet



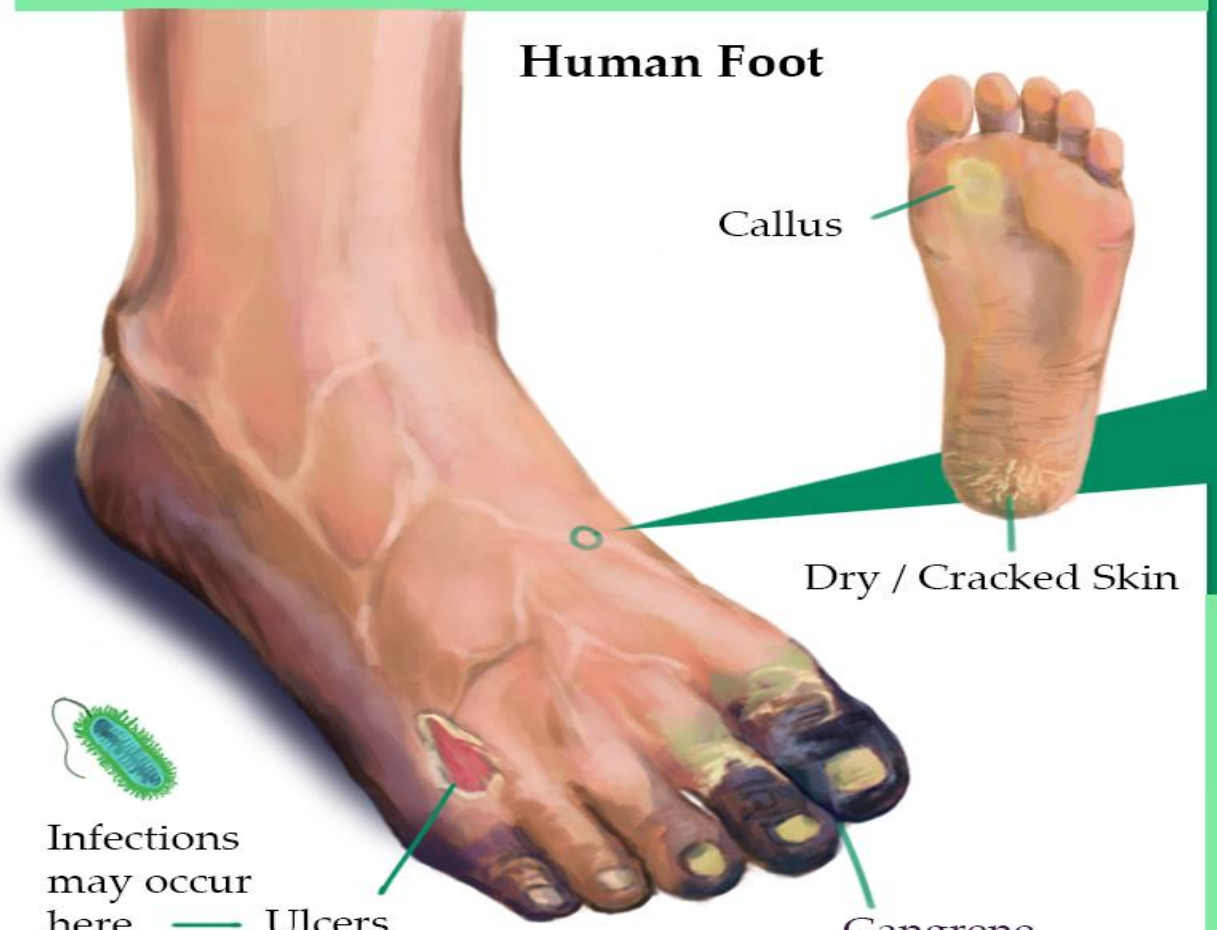
Exercise

res-rehab

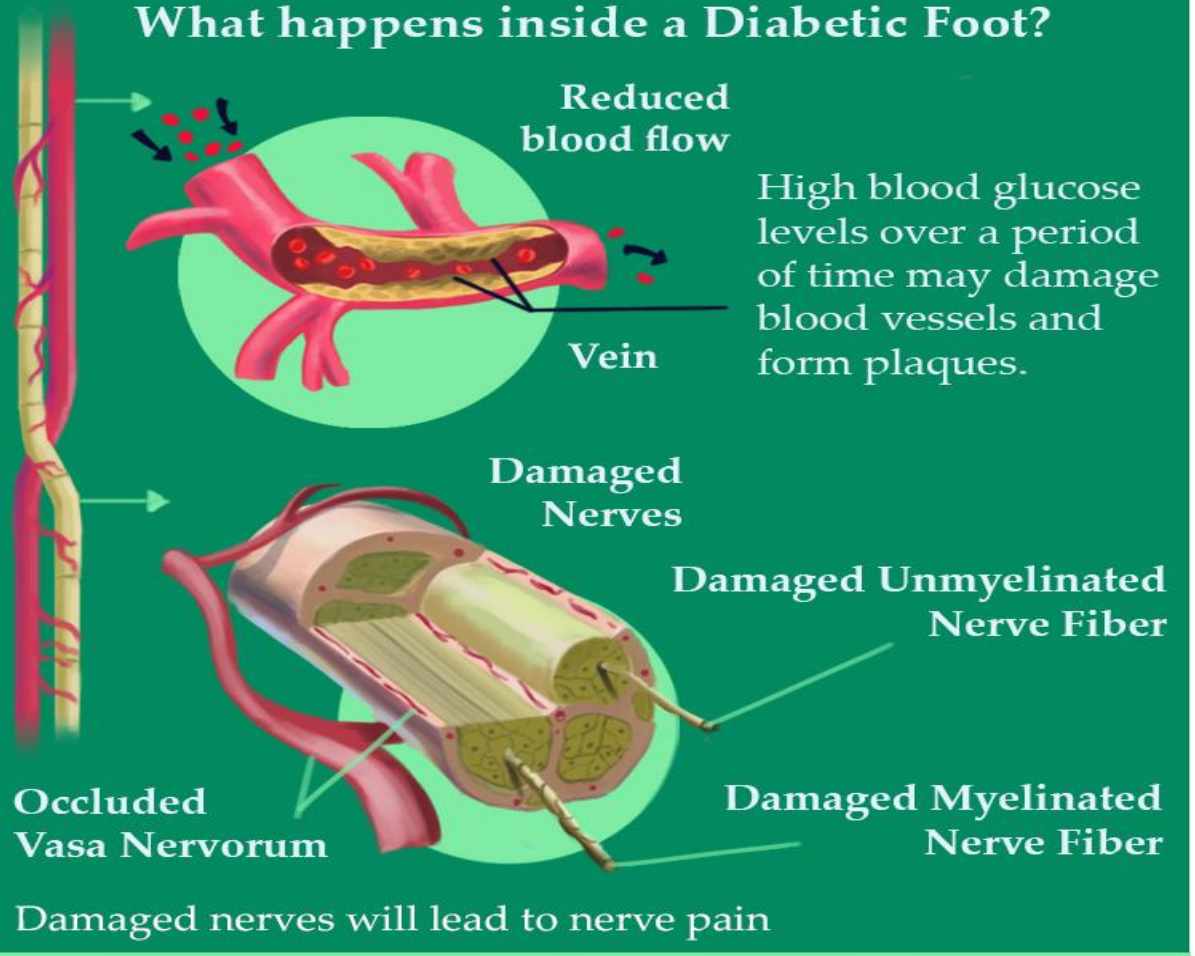
Diabetic Foot / Gangrene

Diabetes is a health condition in which the blood contains an abnormally high amount of sugar (glucose) because the body generates insufficient or no insulin.

Human Foot



What happens inside a Diabetic Foot?



Damaged nerves will lead to nerve pain

Other effects of diabetes on the human body



Symptoms are also caused by poor blood circulation

Stage 1
Normal foot



Stage 2
High risk foot



Stage 3
Ulcer foot



Stage 4
Infective foot



Stage 5
Necrotic foot



Stage 6
Unsalvaged foot

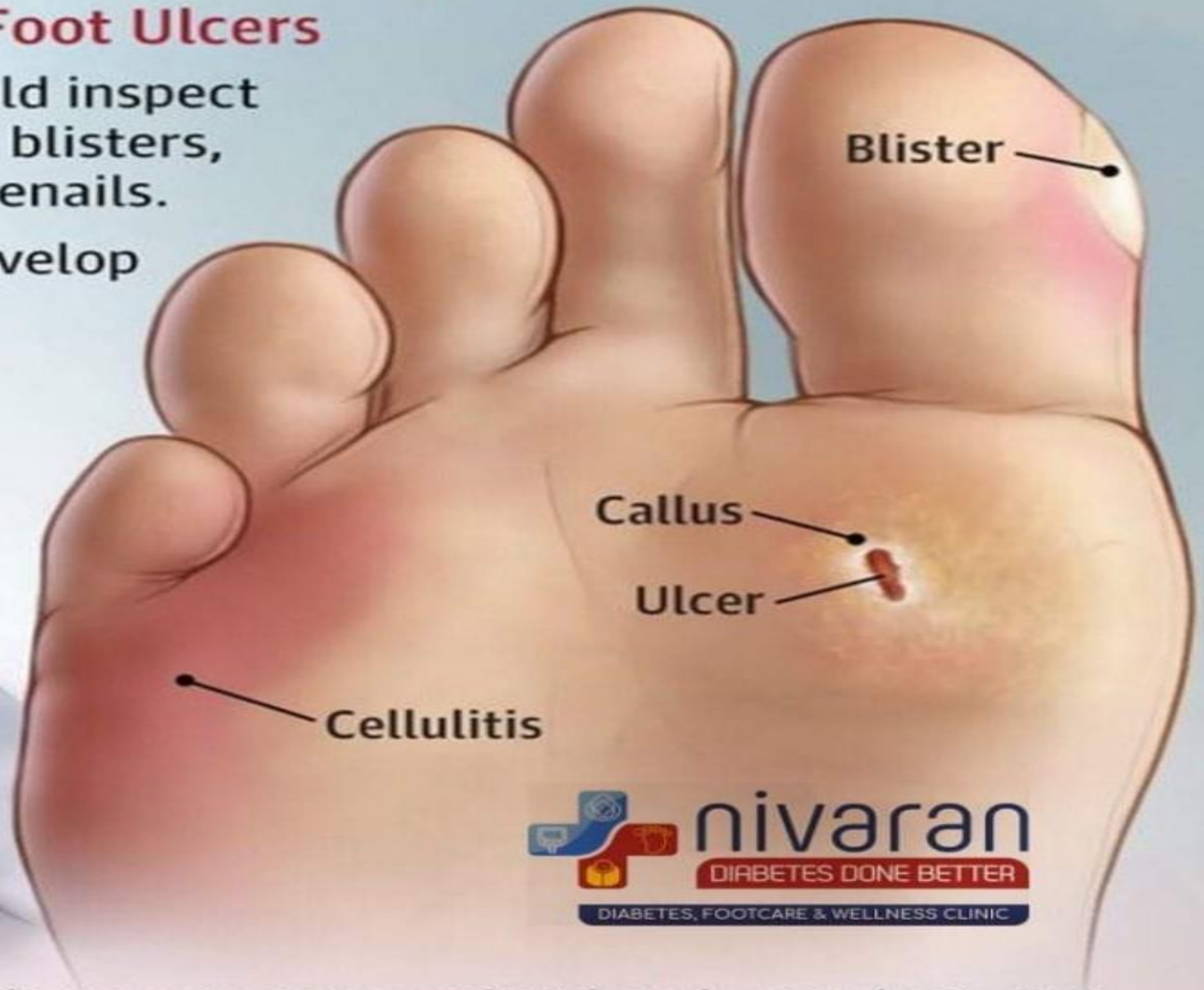


Inspection for Diabetic Foot Ulcers

Patients with diabetes should inspect their feet daily for calluses, blisters, cuts, burns, and ingrown toenails.

These minor injuries can develop into diabetic foot ulcers or may become infected.





nivaran
DIABETES DONE BETTER
DIABETES, FOOTCARE & WELLNESS CLINIC

Foot ulcers that are infected appear warm and red and may drain pus. Infected ulcers should be treated by a clinician. Treatment usually includes oral antibiotics for 1 to 2 weeks.


Tips for Preventing Diabetic Foot Ulcers
• Keep blood sugar levels in check
• Exercise regularly
• Stop smoking
• Lose weight
• Wash feet regularly and inspect them daily
• Avoid walking barefoot and shake shoes out before wearing them
verywell

Ways to Prevent Diabetes

- Cut Sugar & refined carbs
- Exercise regularly
- Eat high-fiber diet
- Drink Water as Your Primary Beverage
- Lose weight
- Quit smoking
- Follow a very low carb diet
- Reduce portion sizes
- Optimize Vitamin D
- Minimize processed food



Nursing Diagnoses

1. • *Risk for fluid volume deficit* related to polyuria and dehydration
2. • *Fluid and electrolyte imbalance* related to fluid loss or shifts
3. • *Deficient knowledge* about diabetes self-care skills or information
4. • *Anxiety* related to loss of control, fear of inability to manage diabetes, misinformation related to diabetes fear of diabetes complications

Nursing Interventions

- Maintaining Fluid and Electrolyte Balance, Intake and output are measured.
- IV fluids and electrolytes are administered as prescribed, and oral fluid intake is encouraged when it is permitted.
- Laboratory values of serum electrolytes (especially sodium and potassium) are monitored.
- Vital signs are monitored hourly for signs of dehydration (tachycardia, orthostatic hypotension) along with assessment of breath sounds, level of consciousness.
- Increasing Knowledge About Diabetes Management .
- Monitoring and Managing Potential Complications .
- Teaching Patients Self-Care ,The patient is taught survival skills, including treatment modalities (diet, insulin administration, monitoring of blood glucose, and, for type 1 diabetes, monitoring of urine ketones)


THANKS FOR
listening