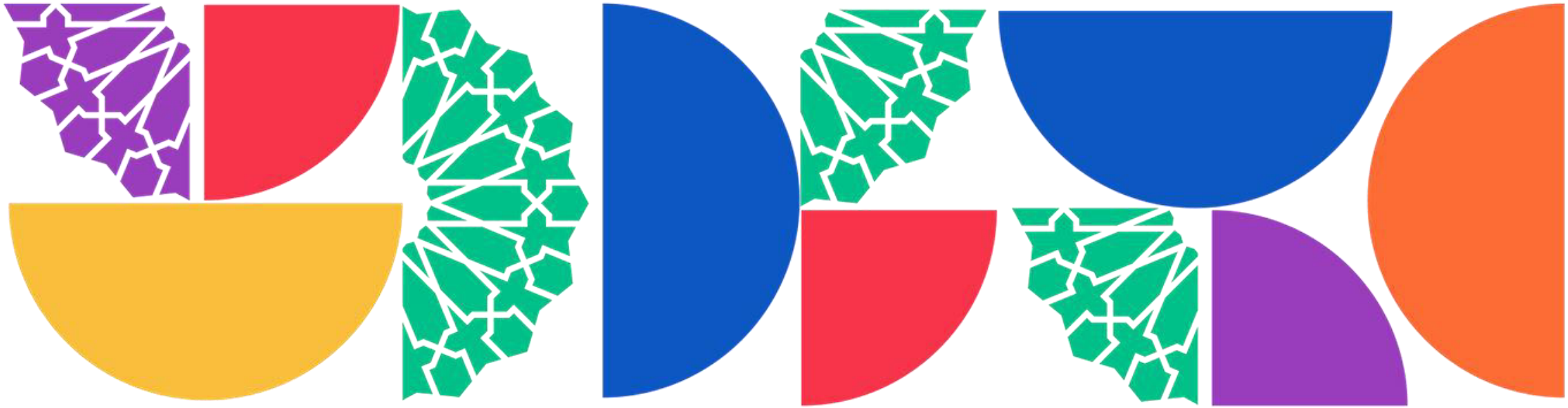
Health Awareness and Nutrition

Diabetes Mellitus

Department of Clinical Nutrition and Dietetics
College of Health Sciences



Diabetes Mellitus

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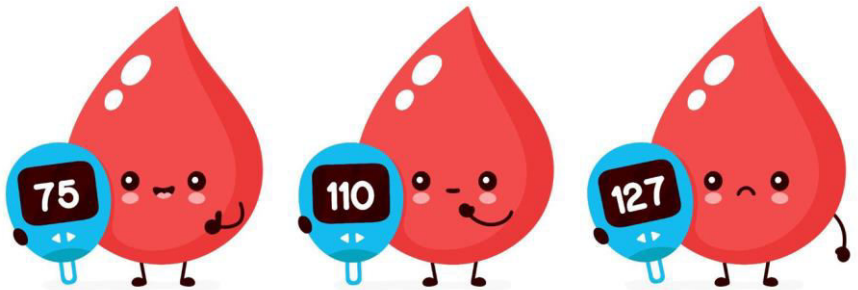
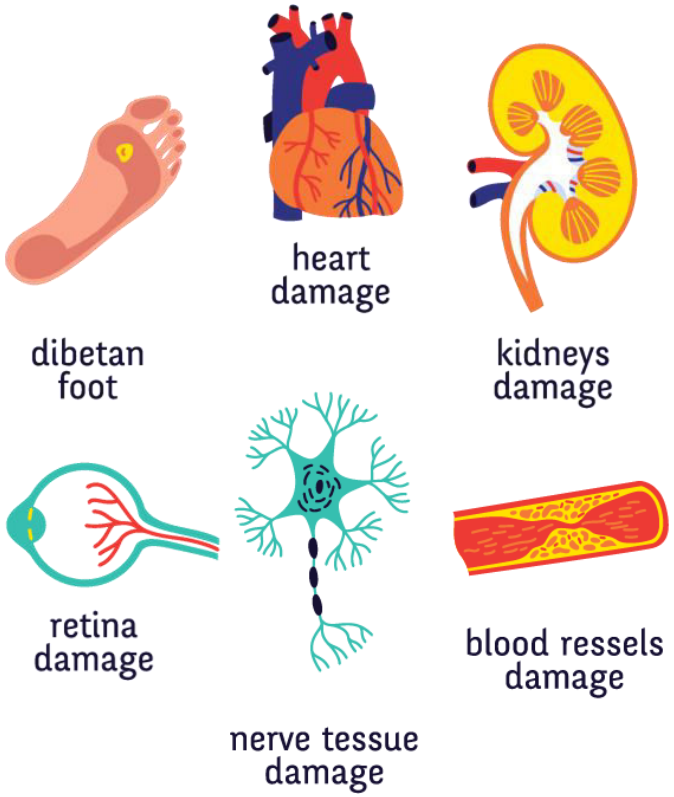
- It is a group of metabolic diseases in which a person has high blood glucose
- It caused by the partial or complete failure of the pancreas to secrete insulin, which leads to an increase in the level of sugar in the body
- The body does not produce enough insulin
- Cells do not respond to the insulin that is produced
- Insulin is the principal hormone that regulates uptake (absorption) of glucose from the blood into most cells
- Deficiency of insulin plays a central role in all forms of diabetes mellitus



Health Complications



It is a chronic disease that causes health complications including:

- Kidney failure
- Heart disease
- Stroke
- Blindness

Symptoms of DM include: frequent urination, lethargy (laziness), excessive thirst, and hunger.

Management of DM includes: changes in diet, oral medications, and insulin injections.

Classification of Diabetes

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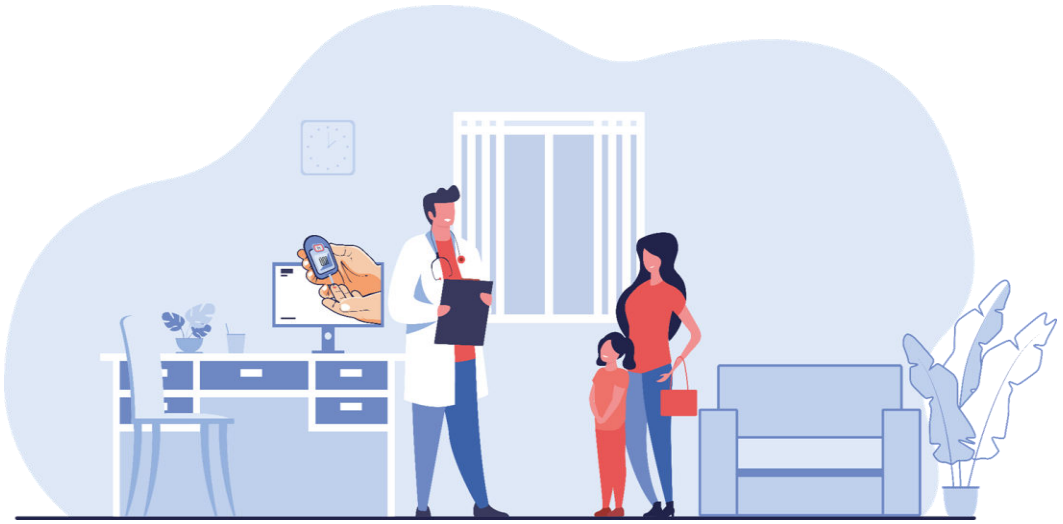
Clinical Types:

- **Type 1: IDDM** (Insulin Dependent Diabetes Mellitus)
- **Type 2: NIDDM** (Non-Insulin Dependent Diabetes Mellitus)
- **IGT:** (Impaired Glucose Tolerance) Also known as Prediabetes
- **Gestational Diabetes Mellitus:** Pregnancy induced diabetes

Classification of Diabetes



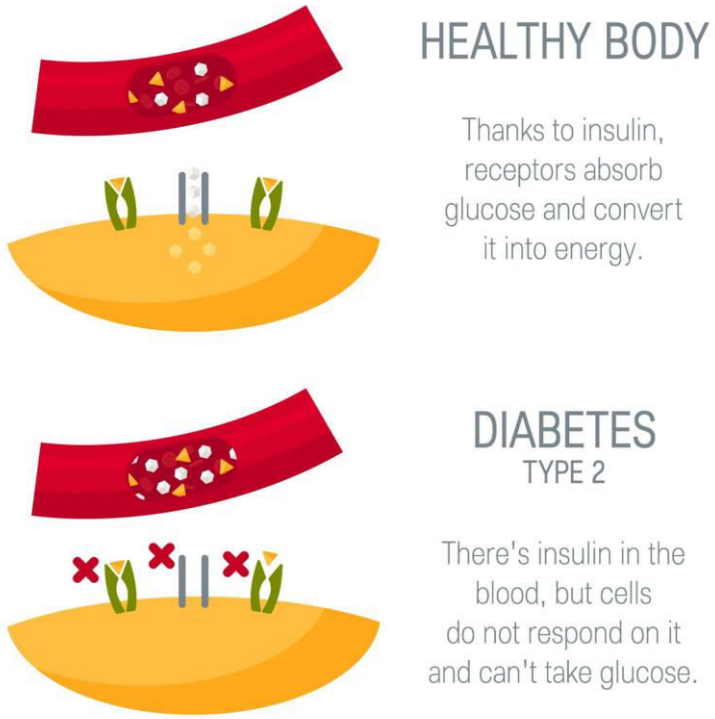
Type 1 Diabetes Mellitus:

- It is characterized by **loss of the insulin-producing cells in the pancreas**, leading to insulin deficiency.
- There is no known **preventive measure** against type 1 diabetes.
- Most affected people are **healthy.**
- Type 1 diabetes affects **mainly children.**
- **At Risk Groups**: not definite but could be children of parents with Diabetes

Classification of Diabetes

Type 2 Diabetes Mellitus:

- It is characterized by **insulin resistance**, which may be combined with relatively reduced insulin secretion.
- In the early stage of type 2, hyperglycemia **can be reversed** by a variety of measures and medications.
- Type 2 diabetes is **the most common type**, and mainly among adults.
- **At Risk Groups**: overweight, obese with family history.



Classification of Diabetes

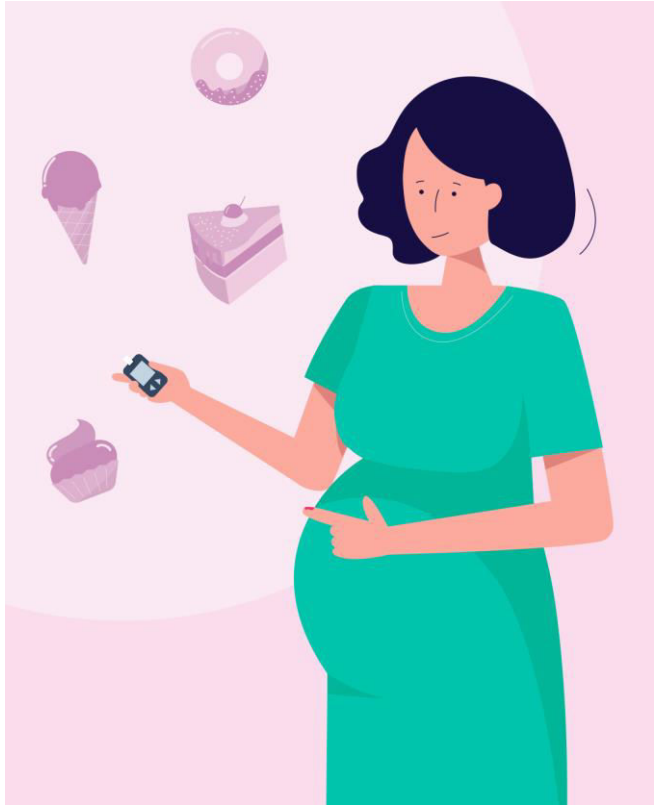
IGT (Impaired Glucose Tolerance):

- Abnormal blood glucose levels from **any cause** which results in disease.
- A condition resulting from a disorder of **blood sugar metabolism**.
- IGT may **precede** type 2 diabetes mellitus by many years.

Classification of Diabetes

Gestational Diabetes Mellitus (GDM):

- GDM resembles type 2 diabetes.
- It occurs in about **2–5%** of all pregnancies and may improve or disappear after delivery.
- About **20–50%** of affected women develop type 2 diabetes later in life.
- If it is untreated during pregnancy, can **damage the health of the fetus or mother.**
- **At Risk Groups**: females whose mothers had GDM while pregnant.



Diagnosis of Diabetes Mellitus

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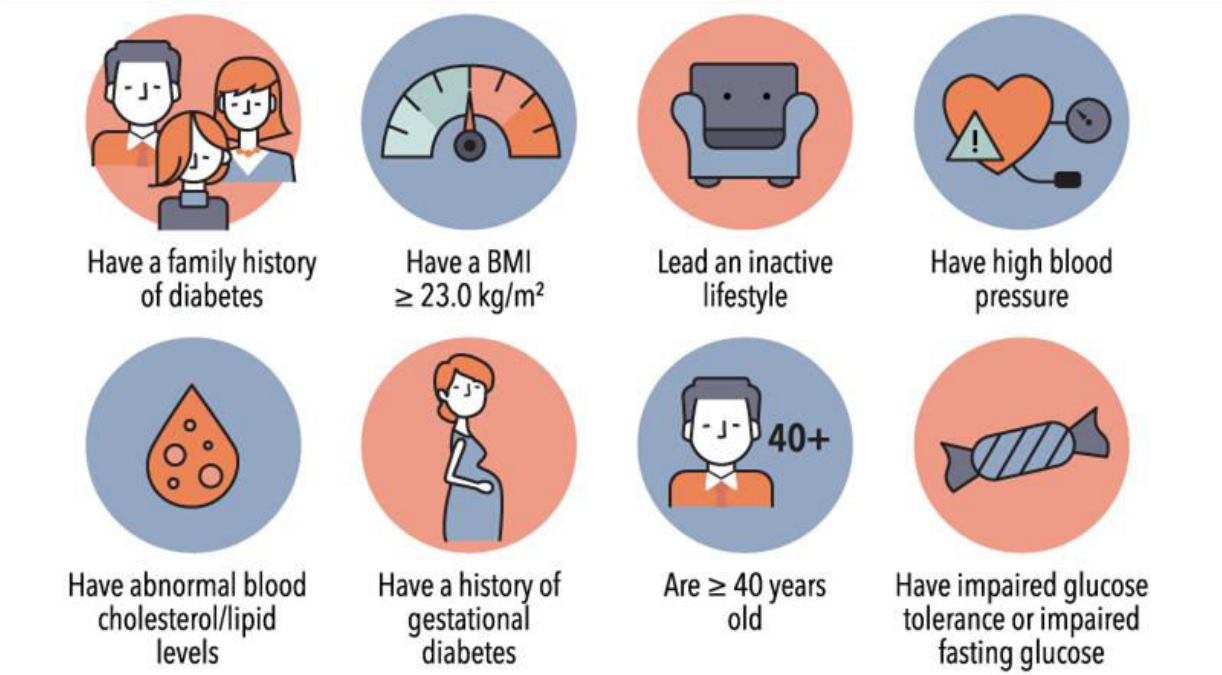
OGTT Criteria (Oral Glucose Tolerance Test)

Time	(mg/100 ml of blood)		
	Normal	IGT	DM
Fasting	<100	>100 <120	>120
2 hours	<120	120-180	>180

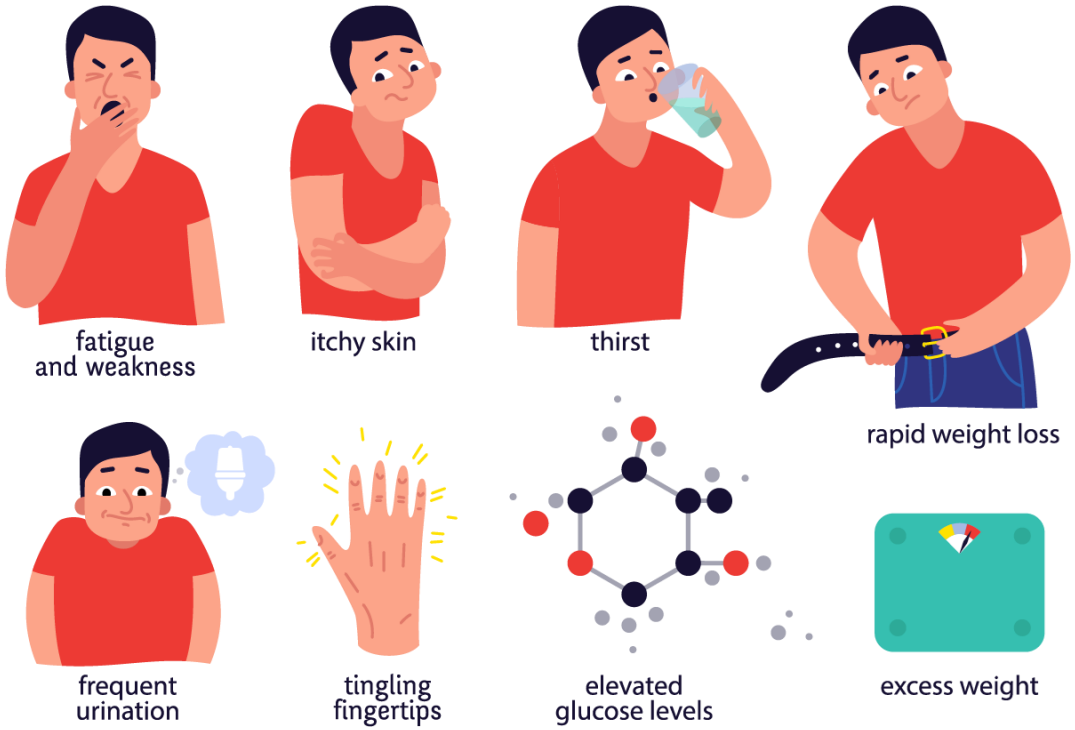
Risk Factors

Common Risk Factors:

- Heredity
- Age
- Gender
- Obesity
- Faulty dietary habits
- Infections
- Stress
- Other hormonal diseases



Clinical Manifestations



Signs and Symptoms:

- Polyphagia (hunger)
- Polyuria and nocturia (urination, particularly at night)
- Polydipsia (thirst)
- Dehydration causing water & electrolyte imbalance
- General weakness
- Decreased resistance to infection
- Fungal infections
- Breathing deep and rapid, with acetone smell
- Weight loss

Clinical Manifestations

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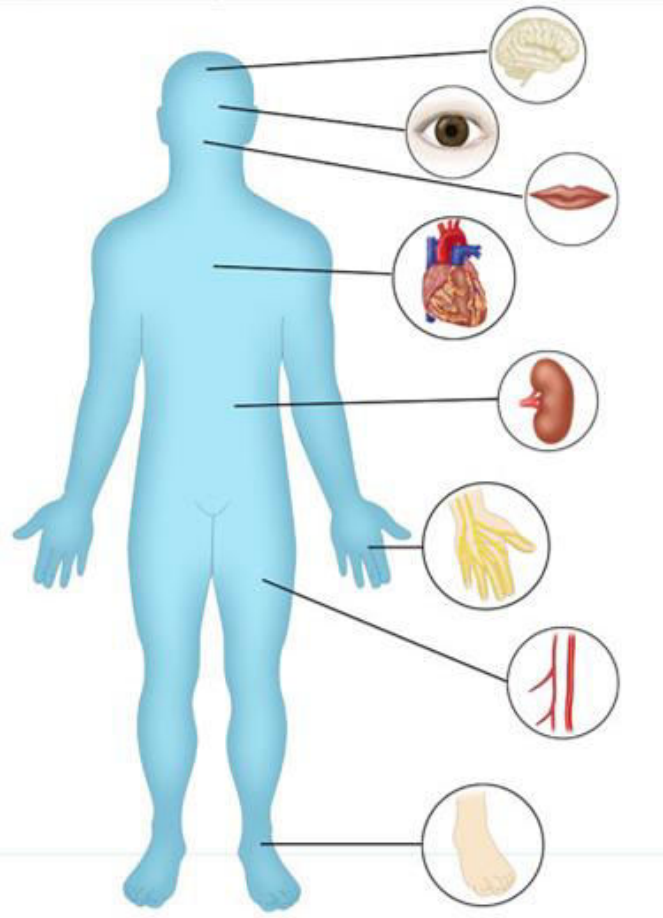
Advanced Stages:

- Blurred vision/failure
- Pain
- Numbness of limbs
- Proteinuria (presence of protein in urine)



Diet and Diabetes

Diet plays the most crucial role in the management of DM.

Rationale for Dietary Management:

- Maintain blood glucose level to normal.
- Improve health by attaining & maintaining optimum nutrition.
- Attain and maintain desirable body weight.
- Prevent/delay the onset of chronic complications and modify diet, if required.
- Diet should be as attractive and realistic as possible.

Dietary Advice

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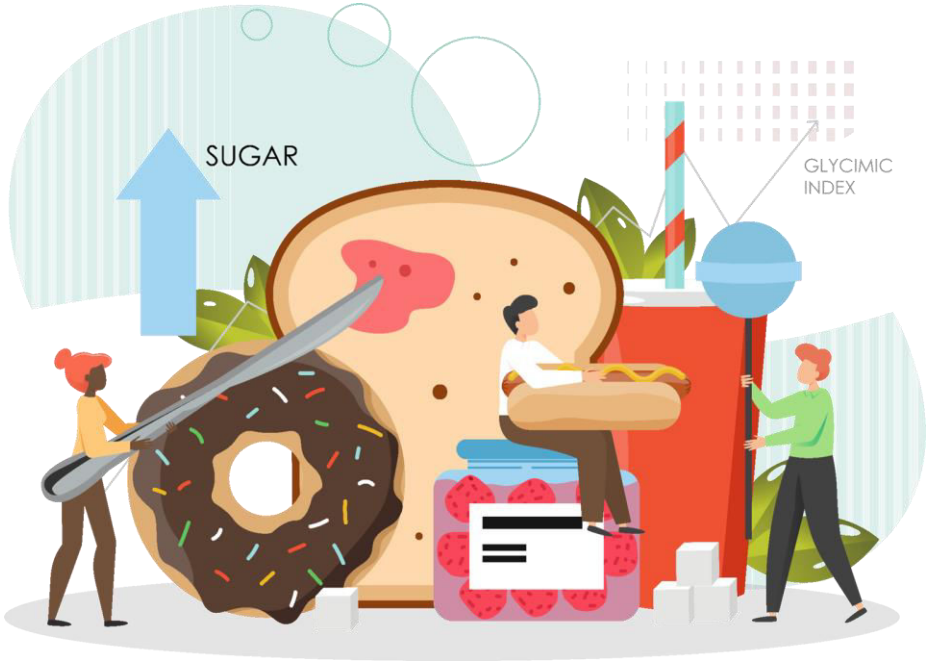
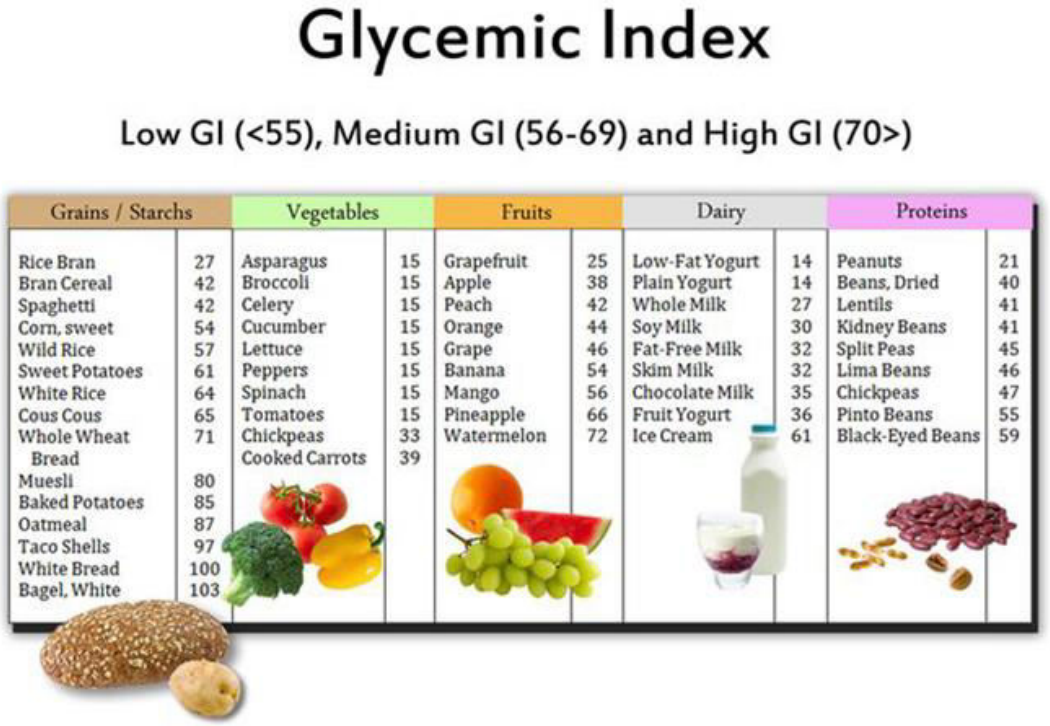
- **Include a lot of fiber** in the diet through whole cereals and pulses, other vegetables and fruits with skin & seeds.
- **Avoid refined cereals**, washed pulses, legumes and simple sugar.
- **Avoid fried & fatty foods** eg. egg yolk, organ meats etc
- **Space carbohydrates** in meals according to treatment advised.
- **Avoid** "**feasting**" and "**fasting**."
- **Remove table sugar** from your diet. If required, sweeteners (natural eg. Stevia) can be used moderately.
- **Avoid alcohol**.
- In case of complications and associated diseases, the diet may be modified accordingly.



Glycemic Index



Glycemic index (GI) is a value used to measure how much specific foods increase blood sugar levels.

The glycemic index is a tool that is often used to promote better **blood sugar management**.

Foods are classified as low, medium, or high glycemic foods and **ranked on a scale of 0–100**.

The **lower the GI** of a specific food, **the less it may affect your blood sugar levels**.

Glycemic Index

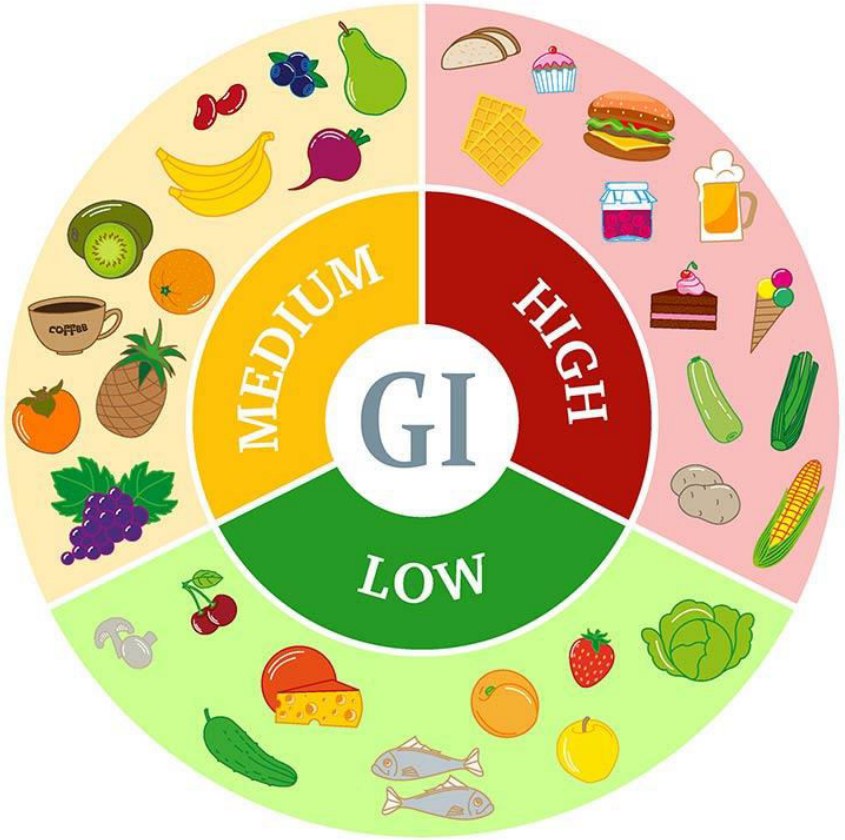
The three GI ratings:

Low: 55 or less

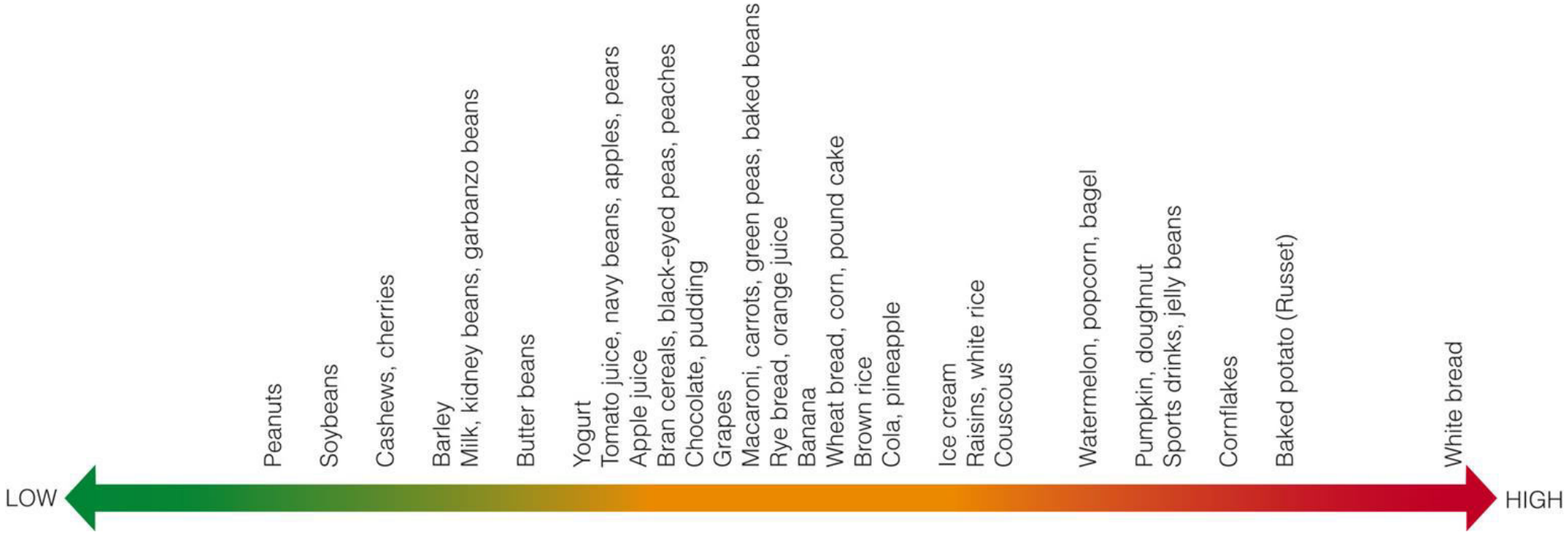
Medium: 56–69

High: 70 or above

- Foods high in **refined carbs and sugar** are digested more quickly and often have a **high GI.**
- Foods **high in protein, fat, or fiber** typically have a **low GI**.
- Foods that contain **no carbs are not assigned a GI** and include meat, fish, poultry, nuts, seeds, herbs, spices, and oils.



Glycemic Index of Selected Foods



Lifestyle Advice

Regular physical activity is important.

Take care of foot hygiene.

Always carry an ID card indicating name, age, address, contact number, nature of the problem, and type of problem (hyper or hypoglycemia).