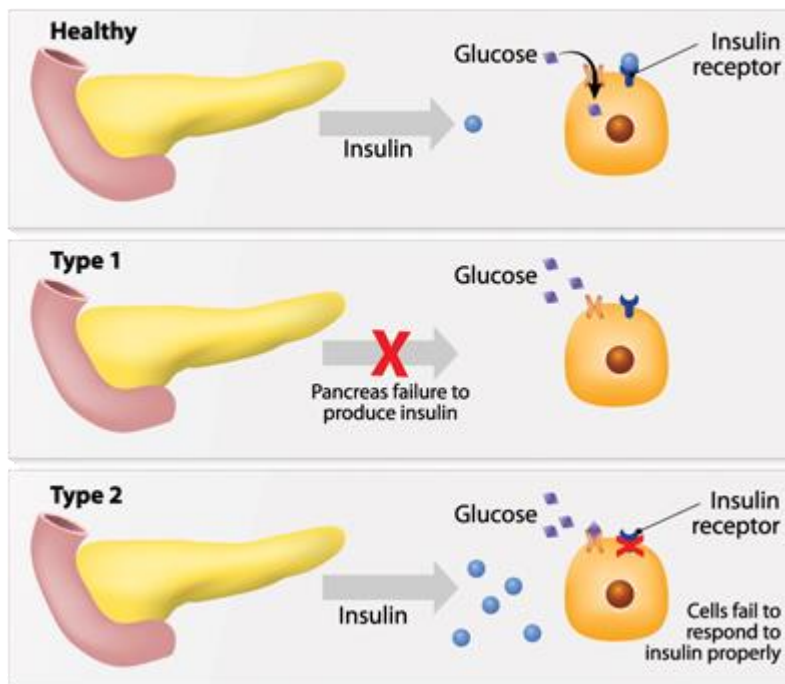


# Diabetes Mellitus (Type 2)

## Diabetes Mellitus (Type 2)

Diabetes mellitus is an irreversible medical condition of compromised insulin production of the pancreas; insulin is a hormone that helps absorb and metabolite sugar and is formed by the pancreas. Impaired sugar absorption in the cells of the body causes hyperglycemia or “high blood glucose level.” Early manifestations of high blood sugar levels include increased thirst (polydipsia), the excessive appetite for food (polyphagia), and increased frequency of urination (polyuria). Around 1.2 million (6%) of Australian Adults aged 18 years on wards reported that they have diabetes last 2015; moreover, it caused 1 million hospitalizations in 2014-15. As compared to Type 1 Diabetes Mellitus, Type 2 diabetes is a condition where the pancreas is still able to produce insulin, and the problem, however, is that the body becomes resistant to insulin due to obesity or above average body weight, the produced insulin becomes inadequate to meet the demand. As type 2 diabetes advances, the insulin produced in the pancreas also weakens. Common significant complications of diabetes are blindness due to a condition called retinopathy, kidney damage, amputations and heart diseases.

## DIABETES MELLITUS



## Risk Factors and Causes

Causes of diabetes mellitus type 2 still are still poorly understood and complex . Nevertheless, it is observed to be common among individuals with above average weight and obese. Overall, the prevalence of type 2 diabetes mellitus has increased over the decades, and it is associated with the increased trend of obesity and sedentary lifestyle. Type 2 diabetes often occurs together with other medical conditions such as hypertension and elevated

cholesterol level. Below are specific risk factors that might increase your risk of developing type 2 diabetes mellitus.

- Above-normal weight and Obesity
- Sedentary lifestyle/Inactivity/lifestyle factors: it lowers the energy expenditure and burning of calories;thus it promotes weight gain and development of DM.
- Family History: Persons with a familial history of diabetes (first-degree relative) have a two to three-fold increased risk of developing diabetes.
- Race and,ethnicity: Asians, Hispanics,and African Americans are more predisposed to type 2 DM than whites
- Fat Distribution: People with more than normal abdominal fat (abdominal obesity) have an increased risk of developing DM type 2
- Smoking: it may impair insulin sensitivity
- Lack of sleep/disturbed sleep pattern
- Consumption of sugar-sweetened beverages: it may cause obesity particularly in children
- Poor diet (high fat, high carbohydrate diet, low in vegetables and fiber)
- Vitamin D deficiency

## Symptoms

Type 2 DM is the most frequent type of diabetes in adults. Often, it is asymptomatic or does not present any signs and symptoms at all. It may be diagnosed during routine checkups after your doctor checks your blood. In some cases, it presents itself with symptoms of hyperglycemia such as the classic symptoms of diabetes; increased thirst, excessive appetite, and frequent urination . It may also present with blurry vision and poor healing of wounds, fatigue, irritability and recurrent infections of gums, skin,and vagina. If you are asymptomatic and does not present any symptoms at all, the indications that you have diabetes are the following :

- Fasting plasma glucose (FPG) values of greater than or equal to 126mg/dl (7.0 mmol/L)
- Two-hour plasma glucose values of greater than or equal to 200mg/dl (11.1 mmol/L) during an oral glucose tolerance test (OGTT)
- A1C values of greater than or equal to 6.5 percent (48mmol/mol)

## Diagnosis

Your doctor checks the following laboratory values when they suspect that you have type 2 DM.

- **Fasting plasma glucose (FPG) levels:** Your blood is taken commonly in the morning after fasting for 8-10 hours. The standard reading is less than 100mg/dl (5.6mmol/L), values of 100 to 125 mg/dl is considered as per-diabetes while 126 mg/dl above in two follow up tests are viewed as diabetes.
- **Glycosylated Hemoglobin (HbA1C):**your doctor or a nurse draw blood from you,but you don't need to fast. It presents your blood sugar level for the past three months. An A1C level of below 5.7 percent is normal while 5.7 to 6.4 is per-diabetes. Any values higher than 6.5 in a two separate test is conclusive of DM type 2.

- **Oral Glucose Tolerance Testing:** You are be required to fast for 8-10 hours, firstly, your blood is tested and measure the blood fasting blood glucose,after that, you need to drink a particular glucose solution,and your blood is retaken after 2 hours to determine the response of your body to glucose. If you're the level of your blood glucose is less than 140mg/dL (7.8mmol/L), then it is considered normal. Anything beyond that range is considered per-diabetes or diabetes.

## Management and Treatment

The primary goal of treatment for type 2 diabetes mellitus is to achieve long-term glycemic control to avoid chronic complications such as kidney damage, blindness, amputation, and cardiac diseases. Although your doctor chooses drug therapy to control your blood sugar, the emphasis of treatment complemented with nondrug management for type 2 diabetes such as:

- Dietary Modification
  - It plays an essential role in regulating your blood sugar. You can consult a clinical dietician about tailoring your diet based on your preferences. It includes a diet low in carbohydrates and low in fats. You are advised to avoid foods with simple sugar content such as soft drinks, desserts,and dried fruits. Increased intake of high fiber food and vegetables is also recommended,and you should give up eating process foods. If you are on insulin, you are asked to avoid skipping meals and instead eat frequently at regular intervals.
- Increased Physical Activity and Exercise
  - It is advisable to perform 30 to 60 minutes of moderate-intensity aerobic activity for 3-4 times in a week. Shorter duration form of intensive exercise can be taken by physically fit diabetic patients. Increased physical activity and exercise do not only contribute to weight loss,butit also improves glycemic/blood sugar control because it stimulates the body's response to insulin.
- Weight loss
  - Losing weight is beneficial for better glucose tolerance which is essential to operate insulin better in the body.
- Smoking Cessation
  - Smoking cessation may help you be reducing diabetes risks by reducing inflammation. Smoking is also associated with weight gain which on the other hand increases your danger of developing or aggravating type 2 diabetes.
- Less Alcohol intake
  - Alcohol is thought to cause spike or fluctuations of blood sugar level. It is best to avoid drinking alcoholic beverages, if occasional, it has to be done in moderation.
- Self-check of blood glucose level
  - Religious monitoring of blood sugar level is paramount to blood sugar control. It is the specific means to regularly monitor if your blood sugar level is within the normal range and if the treatment prescribed is working. People with type 2 diabetes may check the blood sugar level less frequently than the patient with type 1 diabetes unless you are put in insulin therapy by your doctor. The doctor will also ask you to have regularly; you're A1C and fasting blood glucose level check in laboratories. Regular monitoring of diabetes profile will help adjust or readjust the existing treatment regimen and avoid negative repercussions such as diabetic crisis or hypoglycemia.

- Regular vaccination
  - One of the side effects of diabetes is a weakened immune system. It is therefore recommended that you always keep your protection up-to-date to avoid infections. Among the recommended vaccinations are flu vaccine, pneumonia, and hepatitis b. It is best to prevent infection because infections may stimulate stress response in the body thus raising the blood sugar levels more.

The doctor's choice is anti-diabetic drugs that it prescribes to patients vary and is individualized depending on the health status and circumstances of the patients. Most likely, the doctor prescribes oral anti diabetic drugs first and adds insulin if the condition does not improve with oral glucose-lowering only medicines. Among the anti-diabetic drugs that your doctors prescribe are the following:

- Metformin
- Insulin
- Liraglutide
- Pioglitazone
- Rosiglitazone
- Lorcaserin
- Vitamin D

Your doctor will also prescribe other medicines to control your cholesterol and fat level which might not result in the normal thresholds