



## A SURVEY ON DIABETES MELLITUS

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**ABSTRACT:** Diabetes occurs when our blood glucose, also called blood sugar is very high. blood glucose is our main source of energy and comes mainly from the food we eat. Insulin ,a hormone made by the pancreas, helps the glucose in our blood get into our cells to be used for energy. In most persons with type1 diabetes the body's immune system, which normally fights infection, attacks and destroys the cells in the pancreas that make insulin. As a result our pancreas stops making insulin. without insulin, glucose can't get into our cells and our blood glucose rises above normal.

**KEYWORDS:** [Diabetic mellitus, insulin]

### I. INTRODUCTION

Diabetes mellitus (DM), defined as diabetes, is a group of metabolic disorders with high blood sugar levels over a long-drawn-out period. Symptoms of high blood sugar include common urination, increased thirst, and increased hunger. If left unprocessed, diabetes can effect many complications. Serious continuing complications include cardiovascular disease, stroke, kidney disease, foot ulcers, and it will effect to the eyes. Several pathogenic processes are included in the improvement of diabetes; Deficient action of insulin on target tissues and hyperglycemia are the basis of the abnormalities in carbohydrate, fat, and protein metabolism, causing diabetes' characteristic clinical features, micro and-macro vascular complications and increased risk of cardiovascular disease.

### 2. CATEGORIES OF DIABETES

Diabetes is occurs due to either not producing sufficient insulin or the nerves of the body not responding properly .we have 3forms of diabetes mellitus

The outcome of Type 1 DM is the pancreas's breakdown to produce sufficient insulin. Earlier it was called as "insulin-dependent diabetes mellitus" (IDDM) or "juvenile diabetes". The cause is not known.

The Type 2 DM starts with insulin resistance which is a situation in which some of nerves are stop working insulin properly. As the disease increases a lack of insulin may also developed. This form was previously referred to as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes". The more effective reason is heavy weight weight and not performing sufficient exercise.

The third form of diabetes is Gestational diabetes which occurs when pregnant women

without a previous history of diabetes develop high blood sugar levels.

Now a day's number of patients suffered with diabetes mellitus they are either Type 1 diabetes (which is immune-mediated or idiopathic) Type 2 DM (formerly known as non-insulin dependent DM) is the majority form of DM characterized by hyperglycemia, insulin resistance, and relative insulin deficiency.

### TYPE 1:

Symptoms of type 1 diabetes are very serious and happen fastly.

These symptoms can includes:

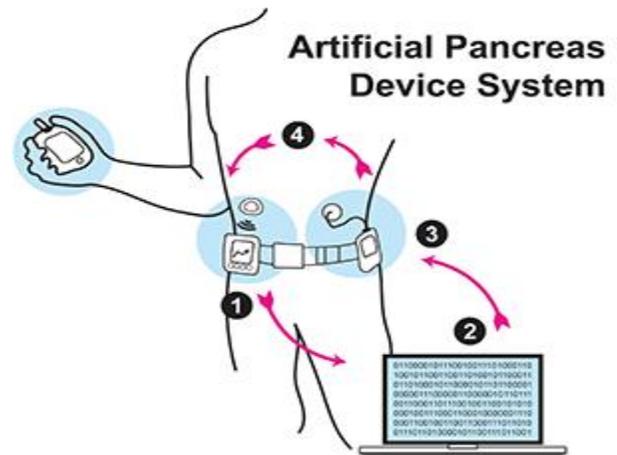
- improved thirst and urination
- increased food shortage
- Blurred vision
- low energy
- Weight loss

### MEDICINE FOR TYPE-1:

If a patient have type 1 diabetes, he/she must take insulin because his/her body is no longer makes this hormone. There are many types of insulin start to work at more speeds, and the effects of each last a different length of time. You may need to use more than one type. You can take insulin a number of ways. Common options include a needle and syringe, insulin pen, or insulin pump.

Some people who have problem to reaching their blood glucose targets with insulin alone also might need to take another type of diabetes medicine that works with insulin, such as pramlintide . Pramlintide, given by injection which helps to keep blood glucose levels from going too high after eating. Few people with type 1 diabetes take pramlintide, however. Another diabetes medicine, metformin, may help decrease the amount of insulin you need to take, but -more studies are needed to confirm this. Reseachers are also studying other diabetes pills that people with type 1 diabetes might take along with insulin.

The illustration below shows the parts of a type of artificial pancreas system.



1. Continuous Glucose Monitor
2. Computer-Controlled Algorithm
3. Insulin Pump
4. Patient Effect

An artificial pancreas system uses a continuous glucose monitor, an insulin pump, and a control algorithm to give you the right amount of basal insulin.

Type 2 DM generates from communication between genetic, **environmental** and behavioral risk factors. Diabetes also can be related to the **gestational** hormonal environment, genetic defects, other infections, and certain drugs.

Symptoms of diabetes include

- improved thirst and urination
- increased food shortage
- feeling tired
- blurred vision
- numbness or tingling in the feet or hands
- sores that do not heal
- unexplained weight loss

The Symptoms of type 2 diabetes includes , it develops very slowly,it is of several year and can be so soft that we may not find them. Many people have no symptoms. Some people do not find out they have the disease until they

have diabetes-related health problems, such as blurred vision or heart disease.

Type 2 diabetes factors, including

- heavyweight and fatness
- not being physically active
- insulin resistance
- genes

### MEDICINES FOR TYPE -2:

The medicine for type 2 includes tablets or medicines which we give to our skin such as insulin. Moreover we need additional one diabetes medicine to handle our blood glucose. yet if we don't take insulin, we need to take it at special times, such as pregnancy time or we are in the hospital with illness.

We also need medicines for high blood pressure, high cholesterol, or other conditions.

### Gestational

It happens by hormones the placenta makes or by too little insulin. more glucose levels from the mother causes more glucose levels in the child. Which can then lead to development problem and to problem of children's growth.

The problems of gestational diabetes include:

- **Obesity or heavyweight.** overweight can lead to gestational diabetes.
- **Glucose intolerance.** Having more glucose intolerance or gestational diabetes in the past makes you more likely to get it again.
- **Family history.** If a mother or child had gestational diabetes, there is more chance of getting it.
- **Age.** The persons who have age 25 or above and that person get conceived, there is a more chance of getting diabetes are more..
- **Ethnic background.** Nonwhite women have a greater chance of developing it.

## 3. FACTORS OF DIABETES:

### Risk factors for type 1 diabetes

- **Family history.** If a mother or child has type 1 diabetes then the percentage of risk will be increased.

- **Environmental factors.** In some areas the people may experience the problem of attacking viral infections.

- **The presence of damaging immune system cells (auto antibodies).** At times some of the family members are sufferers with type 1 diabetes and are checked for the occurrence of auto antibodies. If the people have these auto antibodies, they are faced a more problem of type 1 diabetes. But not everyone who has these auto antibodies develops diabetes.

- **Dietary factors.** These include low vitamin D consumption, early exposure to cow's milk or cow's milk formula, and exposure to cereals before 4 months of age. .

- **Geography.** In some areas like Finland and Sweden, have increased rates of type 1 diabetes.

### Risk factors for prediabetes and type 2 diabetes

- **Weight.** If body contains the full of fat tissue, the heavy resistant our cells become to insulin.

- **Inactivity.** The person is less active then the risk will be more. Physical activity helps you control your weight, uses up glucose as energy and makes your cells more sensitive to insulin.

- **Family history.** Your risk increases if a parent or sibling has type 2 diabetes.

- **Race.** Although it's unclear why, people of certain races — including blacks, Hispanics, American Indians and Asian-Americans — are at higher risk.

- **Age.** As our age get older then our risk increases. it may be because you tend to exercise less, lose muscle mass and gain weight as you age. But type 2 diabetes is also increasing among children, adolescents and younger adults.

- **Gestational diabetes.** If we developed gestational diabetes when you were pregnant, you may get a chance of developing prediabetes and type 2 diabetes later increases. If you gave birth to a baby weighing more

than 9 pounds (4 kilograms), you're also at risk of type 2 diabetes.

- **High blood pressure.** Having blood pressure of more than 140/90 millimeters of mercury (mm Hg) is linked to an increased risk of type 2 diabetes.
- **Abnormal cholesterol and triglyceride levels.** If you have low levels of high-density lipoprotein (HDL), or "good," cholesterol, your risk of type 2 diabetes is higher. Triglycerides are another type of fat carried in the blood. persons with more levels of triglycerides have an increased risk of type 2 diabetes.

### Risk factors for gestational diabetes

Any pregnant woman can develop gestational diabetes, but some women are at greater risk than are others. Risk factors for gestational diabetes include:

- **Age.** Women older than age 25 are at increased risk.
- **Family or personal history.** Your risk increases if you have prediabetes — a precursor to type 2 diabetes — or if a close family member, such as a parent or sibling, has type 2 diabetes. You're also at greater risk if you had gestational diabetes during a previous pregnancy, if you delivered a very large baby or if you had an unexplained stillbirth.
- **Weight.** Being overweight before pregnancy increases your risk.
- **Race.** For reasons that aren't clear, women who are black, Hispanic, American Indian or Asian are more likely to develop gestational diabetes.

## 4. TREATMENT FACTS:

### Diabetes type 1 and type 2 treatment facts

Controlling sugar(glucose)levels is the main feature of diabetes treatment, in order to prevent complications of the disease.

Type 1 diabetes is managed with insulin as well as dietary change and exercise.

Type 2 diabetes is managed with non-insulin medications ,insulin ,weight reduction, or dietary changes.

The selection of medication for type 2 diabetes is measured , which includes:

- The effectiveness and side effect profile of each medication,
- The patients underlying health status,
- Any medication compliance issues, and cost to the patient or health –care system
- Medications for type 2 diabetes are to control low blood glucose levels. They may:
  - increase insulin sensitivity,
  - increase glucose excretion,
  - decrease absorption of carbohydrates from the digestive tract, or
  - Work through other mechanisms.
- Medications for type 2 diabetes are often used in combination.
- Different methods of delivering insulin include:
  - syringes,
  - pre-filled pens, and
  - the insulin pump.
- Proper nutrition is a part of any diabetes care plan.

## CONCLUSION

Diabetes mellitus is a disease caused by the people who have high glucose levels and less insulin.In this paper we study the different categories of diabetes, some of the facts of diabetes and it also includes the treatment of diabetes. The out come of Type 1 DM is the pancreas's breakdown to produce sufficient insulin. The Type 2 DM starts with insulin resistance which is a situation in which some of nerves are stop working insulin properly. As the disease increases a lack of insulin may also developed. While proper maintaining the blood sugar levels and by maintaining proper food the patient will leave the problems of diabetes.

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