**Brief Report**
Volume 10:2, 2022

Journal of Health Education Research & Development

ISSN: 2380-5439 Open Access

# Overview on Type 2 Diabetes

**Nicolos John***

*Head of Department, University of Health Education, Bolivia*

## Brief report

Type 2 diabetes is a condition in which the body's ability to control and utilise sugar (glucose) as a fuel is impaired. Too much sugar circulates in the bloodstream as a result of this long-term (chronic) disease. High blood sugar levels can eventually cause problems with the circulatory, neurological, and immunological systems. There are basically two connected problems at work in type 2 diabetes. Your pancreas does not create enough insulin, a hormone that controls the transport of sugar into your cells, and your cells do not respond well to insulin, resulting in decreased sugar intake. Type 2 diabetes was previously referred to as adult-onset diabetes, however both type 1 and type 2 diabetes can start in childhood or maturity. Type 2 diabetes is more common in older persons, but the number of cases is rising.

Type 2 diabetes has no cure, but decreasing weight, eating healthily, and exercising can help you manage it. If diet and exercise aren't adequate to control your blood sugar, diabetes medicines or insulin therapy may be required. Type 2 diabetes symptoms and signs usually appear gradually. In fact, you could have type 2 diabetes for years without realising it. When signs and symptoms are present, they may include:

- Frequent urination
- Increased hunger
- Unintended weight loss
- Fatigue
- Blurred vision
- Slow-healing sores

### Causes

- Type 2 diabetes is primarily the result of two interrelated problems:
- Cells in muscle, fat and the liver become resistant to insulin. Because these cells don't interact in a normal way with insulin, they don't take in enough sugar.
- The pancreas is unable to produce enough insulin to manage blood sugar levels.
- Exactly why this happens is unknown, but being overweight and inactive are key contributing factors.
- Insulin is a hormone that comes from the gland situated behind and below the stomach (pancreas). Insulin regulates how the body uses sugar in the following ways:
- Sugar in the bloodstream triggers the pancreas to secrete insulin.
- Insulin circulates in the bloodstream, enabling sugar to enter your cells.
- The amount of sugar in your bloodstream drops.
- In response to this drop, the pancreas releases less insulin.

### The role of glucose

- Glucose — a sugar — is a main source of energy for the cells that make up muscles and other tissues. The use and regulation of glucose includes the following:
- Glucose comes from two major sources: food and your liver.
- Glucose is absorbed into the bloodstream, where it enters cells with the help of insulin.
- Your liver stores and makes glucose.
- When your glucose levels are low, such as when you haven't eaten in a while, the liver breaks down stored glycogen into glucose to keep your glucose level within a normal range.

This technique does not work effectively in those with type 2 diabetes. Sugar builds up in your bloodstream instead of flowing into your cells. The insulin-producing beta cells in the pancreas produce more insulin when blood sugar levels rise. These cells eventually become compromised and are unable to produce enough insulin to meet the body's needs.

The immune system incorrectly destroys the beta cells in type 1 diabetes, leaving the body with little to no insulin.

### Risk factors

Factors that may increase your risk of type 2 diabetes include:

- **Weight:** Being overweight or obese is a main risk.
- **Fat distribution**: Storing fat mainly in your abdomen — rather than your hips and thighs — indicates a greater risk. Your risk of type 2 diabetes rises if you're a man with a waist circumference above 40 inches (101.6 centimeters) or a woman with a measurement above 35 inches (88.9 centimeters).
- **Inactivity**: The less active you are, the greater your risk. Physical activity helps control your weight, uses up glucose as energy and makes your cells more sensitive to insulin.
- **Family history**: The risk of type 2 diabetes increases if your parent or sibling has type 2 diabetes.
- **Race and ethnicity**: Although it's unclear why, people of certain races and ethnicities — including Black, Hispanic, Native American and Asian people, and Pacific Islanders — are more likely to develop type 2 diabetes than white people are.
- **Blood lipid levels**: An increased risk is associated with low levels of high-density lipoprotein (HDL) cholesterol — the "good" cholesterol — and high levels of triglycerides.
- **Age**: The risk of type 2 diabetes increases as you get older, especially after age 45.
- **Prediabetes**: Prediabetes is a condition in which your blood sugar level is higher than normal, but not high enough to be classified as diabetes. Left untreated, prediabetes often progresses to type 2 diabetes.
- **Pregnancy-related risks:** Your risk of developing type 2 diabetes increases if you developed gestational diabetes when you were

***Address for Correspondence:** Nicolos John, Head of Department, University of Health Education, Bolivia; E-mail: john.n@yahoo.com*



**Received:** 05 February, 2022, Manuscript No. JBHE-22-55985; **Editor Assigned:** 07 February, 2022, PreQC No. P- 55985; **Reviewed:** 19 February, 2022, QC No. Q- 55985; **Revised:** 23 February, 2022, Manuscript No. R- 55985; **Published:** 01 March, 2022, DOI: 10.4172/2380-5439.100010

pregnant or if you gave birth to a baby weighing more than 9 pounds (4 kilograms).

- **Polycystic ovary syndrome**: Having polycystic ovary syndrome — a common condition characterized by irregular menstrual periods, excess hair growth and obesity — increases the risk of diabetes
- **Areas of darkened skin**: usually in the armpits and neck. This condition often indicates insulin resistance.

## Complications

Type 2 diabetes affects many major organs, including your heart, blood vessels, nerves, eyes and kidneys. Also,

factors that increase the risk of diabetes are risk factors for other serious chronic diseases. Managing diabetes and

controlling your blood sugar can lower your risk for these complications or coexisting conditions (comorbidities).

Potential complications of diabetes and frequent comorbidities include:

- **Heart and blood vessel disease**: Diabetes is associated with an increased risk of heart disease, stroke, high blood pressure and narrowing of blood vessels (atherosclerosis).
- **Nerve damage (neuropathy) in limbs**: High blood sugar over time can damage or destroy nerves, resulting in tingling; numbness, burning, pain or eventual loss of feeling that usually begins at the tips of the toes or fingers and gradually spreads upward.
- **Other nerve damage**: Damage to nerves of the heart can contribute to irregular heart rhythms. Nerve damage in the digestive system can cause problems with nausea, vomiting, diarrhea or constipation. For men, nerve damage may cause erectile dysfunction.
- **Kidney disease:** Diabetes may lead to chronic kidney disease or irreversible end-stage kidney disease, which may require dialysis or a kidney transplant.
- **Eye damage:** Diabetes increases the risk of serious eye diseases, such as cataracts and glaucoma, and may damage the blood vessels of the retina, potentially leading to blindness.
- **Skin conditions**: Diabetes may leave you more susceptible to skin problems, including bacterial and fungal infections.
- **Slow healing**: Left untreated, cuts and blisters can become serious infections, which may heal poorly. Severe damage might require toe, foot or leg amputation.
- **Hearing impairment:** Hearing problems are more common in people with diabetes.
- **Sleep apnea**: Obstructive sleep apnea is common in people living with type 2 diabetes. Obesity may be the main contributing factor to both conditions. It's not clear whether treating sleep apnea improves blood sugar control.
- **Dementia:** Type 2 diabetes seems to increase the risk of Alzheimer's disease and other disorders that cause dementia. Poor control of blood sugar levels is linked to more-rapid decline in memory and other thinking skills.

## Prevention

Healthy lifestyle choices can help prevent type 2 diabetes, and that's true even if you have biological relatives living with diabetes. If you've received a diagnosis of prediabetes, lifestyle changes may slow or stop the progression to diabetes [1-6].

## A healthy lifestyle includes:

- **Eating healthy foods:** Choose foods lower in fat and calories and higher in fiber. Focus on fruits, vegetables and whole grains.
- **Getting active:** Aim for 150 or more minutes a week of moderate to vigorous aerobic activity, such as a brisk walk, bicycling, running or swimming.
- **Losing weight**: Losing a modest amount of weight and keeping it off can delay the progression from prediabetes to type 2 diabetes. If you have prediabetes, losing 7% to 10% of your body weight can reduce the risk of diabetes.
- **Avoiding inactivity for long periods**: Sitting still for long periods can increase your risk of type 2 diabetes. Try to get up every 30 minutes and move around for at least a few minutes.

# References

1. Östenson, CG. "The pathophysiology of type 2 diabetes mellitus: an overview." Acta Physiologica Scandinavica 171 (2001): 241-247.
2. Srinivasan, K and P. Ramarao. "Animal model in type 2 diabetes research: An overview." Ind J Med Res 125 (2007): 451.
3. Vijan, Sandeep. "In the clinic. Type 2 diabetes." Ann Int Med 152 (2010): ITC31-15.
4. Davidson, Mayer B., and Anne L. Peters. "An overview of metformin in the treatment of type 2 diabetes mellitus." Am J Med 102 (1997): 99-110.
5. Ratner, Robert E. "Type 2 diabetes mellitus: the grand overview." Diabet Med 15 (1998): S4-S7.
6. Buse, John B. "Overview of current therapeutic options in type 2 diabetes: rationale for combining oral agents with insulin therapy." Diabet Care 22 (1999): C65.

**How to cite this article:** John, Nicolos. "Overview on Type 2 Diabetes". J Health Edu Res Dev 10 (2022): 10.