

# Yoga and Diabetes : The Impact of Yoga Practice on Diabetic Symptoms

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**Abstract:** *“Diabetes mellitus”, is one of the most common non-communicable diseases worldwide. India faces several challenges in diabetes management, including a rising prevalence in urban and rural areas, lack of disease awareness among the public, limited health care facilities, high cost of treatment, suboptimal glycaemic control and rising prevalence of diabetic complications. Insulin therapy for diabetes is most commonly delivered via subcutaneous injections, up to four times a day. Long-term insulin therapy, compounded by the invasive nature of its administration, has caused problems with patient compliance, ultimately influencing patient outcomes. There is an increase in the prevalence of type 1 diabetes also, but main cause of diabetic epidemic is type 2 diabetes mellitus, which accounts for more than 90 percent of all diabetes cases. Type 2 diabetes is a serious and common chronic disease resulting from a complex inheritance- environment interaction along with other risk factors such as obesity and sedentary lifestyle.*

**Keywords:** Diabetes mellitus

## I. INTRODUCTION

Gestational diabetes, is the third main form and occurs when pregnant women without a previous history of diabetes develop a high blood glucose level. Prevention and treatment involves a healthy diet, physical exercise, not using tobacco, and being a normal body weight. Blood pressure control and proper foot care are also important for people with the disease. Type 1 diabetes must be managed with insulin injections. Type 2 diabetes may be treated with medications with or without insulin. Insulin and some oral medications can cause low blood sugar. Weight loss surgery in those with obesity is an effective measure in those with type 2 DM. Gestational diabetes usually resolves after the birth of the baby Type 2 DM begins with insulin resistance, a condition in which cells fail to respond to insulin properly. As the disease progresses a lack of insulin may also develop. This form was previously referred to as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes". The primary cause is excessive body weight and not enough exercise. Type 1 DM results from the body's failure to produce enough insulin. This form was previously referred to as "insulin-dependent diabetes mellitus" (IDDM) or "juvenile diabetes". The cause is unknown Diabetes mellitus (DM) also known as simply diabetes, is a group of metabolic diseases in which there are high blood sugar levels over a prolonged period This high blood sugar produces the symptoms of frequent urination, increased thirst, and increased hunger. Untreated, diabetes can cause many complications. Acute complications include diabetic ketoacidosis and nonketotic hyperosmolar coma. Serious long-term complications include heart disease, stroke, kidney failure, foot ulcers and damage to the eyes. Diabetes is due to either the pancreas not producing enough insulin, or the cells of the body not responding properly to the insulin produced.

### 1.1 Some Key Aspects of Diabetes

- Diabetes is a long-term condition that causes high blood sugar levels.
- In 2013 it was estimated that over 382 million people throughout the world had diabetes.
- Type 1 Diabetes - the body does not produce insulin. Approximately 10% of all diabetes cases are type 1.
- Type 2 Diabetes - the body does not produce enough insulin for proper function. Approximately 90% of all cases of diabetes worldwide are of this type.
- Gestational Diabetes - this type affects females during pregnancy.
- The most common diabetes symptoms include frequent urination, intense thirst and hunger, weight gain,

unusual weight loss, fatigue, cuts and bruises that do not heal, male sexual dysfunction, numbness and tingling in hands and feet.

- If you have Type 1 and follow a healthy eating plan, do adequate exercise, and take insulin, you can lead a normal life.
- Type 2 patients need to eat healthily, be physically active, and test their blood glucose. They may also need to take oral medication, and/or insulin to control blood glucose levels.

## **1.2 Types of Diabetes**

### **A. Type 1 diabetes**

The body does not produce insulin. Some people may refer to this type as insulin-dependent diabetes, juvenile diabetes, or early-onset diabetes. People usually develop type 1 diabetes before their 40th year, often in early adulthood or teenage years. Type 1 diabetes is nowhere near as common as type 2 diabetes. Approximately 10% of all diabetes cases are type 1. Patients with type 1 diabetes will need to take insulin injections for the rest of their life. They must also ensure proper blood-glucose levels by carrying out regular blood tests and following a special diet. diabetes, juvenile diabetes, or early-onset diabetes.

### **B. Type 2 diabetes**

The body does not produce enough insulin for proper function, or the cells in the body do not react to insulin (insulin resistance). Approximately symptoms by losing weight, following a healthy diet, doing plenty of exercise, and monitoring their blood glucose levels. However, type 2 diabetes is typically a progressive disease - it gradually gets worse - and the patient will probably end up have to take insulin, usually in tablet form. Overweight and obese people have a much higher risk of developing type 2 diabetes compared to those with a healthy body weight. People with a lot of visceral fat, also known as central obesity, belly fat, or abdominal obesity, are especially at risk. Being overweight/obese causes the body to release chemicals that can destabilize the body's cardiovascular and metabolic systems.

Being overweight, physically inactive and eating the wrong foods all contribute to our risk of developing type 2 diabetes. The scientists believe that the impact of sugary soft drinks on diabetes risk may be a direct one, rather than simply an influence on body weight. The risk of developing type 2 diabetes is also greater as we get older. Experts are not completely sure why, but say that as we age we tend to put on weight and become less physically active. Those with a close relative who had/ had type 2 diabetes, people of Middle Eastern, African, or South Asian descent also have a higher risk of developing the disease. Men whose testosterone levels are low have been found to have a higher risk of developing type 2 diabetes.

### **C. Gestational Diabetes**

This type affects females during pregnancy. Some women have very high levels of glucose in their blood, and their bodies are unable to produce enough insulin to transport all of the glucose into their cells, resulting in progressively rising levels of glucose. Diagnosis of gestational diabetes is made during pregnancy. The majority of gestational diabetes patients can control their diabetes with exercise and diet. Between 10 to 20 percent of them will need to take some kind of blood-glucose-controlling medications. Undiagnosed or uncontrolled gestational diabetes can raise the risk of complications during childbirth.

## **1.3 Symptoms of Diabetes**

People can often have diabetes and be completely unaware. The main reason for this is that the symptoms, when seen on their own, seem harmless. However, the earlier diabetes is diagnosed the greater the chances are that serious complications, which can result from having diabetes, can be avoided. Here is a list of the most common diabetes symptoms:

- Frequent urination
- Disproportionate thirst
- Intense hunger

- Weight gain
- Unexplained weight loss
- Slow healing cuts and wounds
- Skin discoloration

**Effect of diabetes on daily life and role of yogic activities on diabetes:**

Diabetes is a demanding disease, so it can affect life in many ways. Managing diabetes can be stressful. The way we feel when our blood glucose levels are low or really high adds to the stress. On top of that, there are the worries that we might develop complications, and the burden of dealing with any complications we may already have. It is no wonder that many people feel that diabetes affects their quality of life. Regular exercise patterns can be extremely beneficial to older patients with diabetes. In their case, the condition is partly due to lack of physical activity. A few minutes of brisk walking and joint movements, coupled with some gentle yoga postures—Triangle Pose, Standing Spinal Twist, and Butterfly Pose—followed by relaxation in yoga Nidra can help.

Some specific Yogic activities to tackle diabetes better: Supta Matsyendrasana, Dhanurasana, Paschimottanasana, Ardha Matsyendrasana, Shavasana, Kati chakra asana, Pawan mukat asana, Trikon asana, Vajar asana, Mandukasana, Gomukh asana, Ardha matsyendrasana & Shavasana Kriya: Neti, Om Chanting, Kapalbhati, Kunjal Kriya, Agnisara.

**II. CONCLUSION**

Yoga and pranayam reduces the severity of the disease and the long term complications of diabetes. In effect, a well-planned and-regular practice of asana and pranayam regimen can be very beneficial if made a part and parcel of everyday life, more so if one has diabetes. Yoga and pranayam has the advantages of controlling the blood sugar levels without taking additional medications.

Overall regular yoga and pranayam cannot only help in better control of blood sugar but also helps with control of weight and blood pressure as it lowers the bad cholesterol and raises the level of good cholesterol in the blood. Yoga can reduce the risk of heart disease and nerve damage, the risks of which are higher with diabetes.