



Diabetes Mellitus: Genesis Causes and Remedies through Yoga

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Abstract

Diabetes is one of the major health problems affecting about 5% of Indian population. Complications involved in management of diabetes and increasing prevalence of diabetes every year have been emphasized on the need for efficient control. Diet control, exercises and meditation with insulin and / or antiglycemic drug are the presently available treatment procedures. Stress management is also important in preventing the onset as well as controlling diabetes. Yoga includes moderate exercise, diet restriction, relaxation techniques etceteras, is a very good stress management system. Yoga brings harmony in body and mind, and keeps the person health, both physically and mentally.

Keywords: Diabetes, Yoga, Genesis, Causes.

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Introduction

Diabetes is a constantly growing health problem in all over the world today. Diabetes mellitus has been clinically identified as a disorder / health hazard. The first written record of diabetes was discovered on an ancient Egyptian papyrus dated back to 1500 BC, which describe excessive urination, polyuria, one of the main symptoms of diabetes. The Indian text Susruta, written in approximately 400 BC, notes the diseases and calls it *madhu meh*, honey in the urine. In the west, Willis first noticed the disease and was characterized by sweetness of the urine in 1675 AD. Today there is an estimation that approximately 9% of the populations have diabetes. The number of cases is said to be rising 6% each year. The disease is not just a case of having too much sugar in the blood; it affects nearly every organ in the body. An estimated 300,000 people die from diabetes and its complications such as heart attack, stroke and kidney failure. It is also the leading cause of blindness in America, as well as causing high blood pressure, impotence, gangrene and chronic infections, which often necessitate amputation. After cancer and heart disease, diabetes is the third most common cause of death in America. The American Diabetes Association has used a poster requesting funds for research with the slogan: "Every 60 seconds another American is diagnosed as diabetic". However, ancient Indian physicians "Charaka" and "Susrutha" have given description of diabetes in their traditional text. They recommended doing physical exercises and ensuring proper diet for the control of diabetes.

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Diabetes is one of the major health problems affecting about 5% of Indian population. Complications involved in management of diabetes and increasing prevalence of diabetes every year have been emphasized on the need for efficient control. Diet control, exercises and meditation with insulin and / or antiglycemic drug are the presently available treatment procedures. Stress management is also important in preventing the onset as well as controlling diabetes. Yoga includes moderate exercise, diet restriction, relaxation techniques etceteras, is a very good stress management system. Yoga brings harmony in body and mind, and keeps the person health, both physically and mentally. Literature survey indicates that effective control of diabetes; both Insulin Dependent Diabetes Mellitus and Non Insulin Dependent Diabetes Mellitus can be achieved by yoga practice, which can be explored by further experimental researches. The science of yoga is an ancient one. It is a rich heritage of our culture. Several older books make a mention of the usefulness of yoga in the treatment of certain diseases and preservation of health in normal individuals. The effect of yogic practices on the management of diabetes has not been investigated well. We carried out well designed studies in normal individuals and those with diabetes to assess the role of yogic practices on glycaemic control, insulin kinetics, body composition exercise tolerance and various co-morbidities like hypertension and dyslipidemia.

These studies were both short term and long-term. These studies have confirmed the useful role of yoga in the control of diabetes mellitus. Fasting and postprandial blood glucose levels came down significantly. Good glycaemic status can be maintained for long periods of time. There was a lowering of drug requirement and the incidence of acute complications like infection and ketosis was significantly reduced.

There were significant changes in the insulin kinetics and those of counter-regulatory hormones like cortisol. There was a decrease in free fatty acids. There was an increase in lean body mass and decrease in body fat percentage. The number of insulin receptors was also increased. There was an improvement in insulin sensitivity and decline in insulin resistance. All these suggest that yogic practices have a role even in the prevention of diabetes. There is a beneficial effect on the comorbid conditions like hypertension and dyslipidemia.

Classification of Diabetes

The classification adopted by World Health Organisation is given in clinical classification of diabetes mellitus.

1. Diabetes mellitus (DM)
 - i) Insulin – dependent diabetes mellitus (IDDM, Type I)
 - ii) Non – insulin dependent diabetes mellitus (NIDDM, Type II)
 - iii) Malnutrition – related diabetes mellitus (MRDM)
 - iv) Other types (secondary to pancreatic, hormonal drug – induced, Genetic and other abnormalities)
2. Impaired glucose tolerance (IGT)
3. Gestational diabetes mellitus (GDM) 2

Thus, diabetes has been mainly classified clinically as IDDM (Insulin Dependent Diabetes Mellitus) and NIDDM (Non-Insulin Dependent Diabetes Mellitus). In fact IDDM is usually originated either in childhood or in adolescence and NIDDM is seen in adults. The complications are developed due to continuous elevation of blood glucose, which damages the blood vessels, heart, kidney, nervous system and even the eyes. The associated classical symptoms are frequent urination, excess hunger, weight loss, thirst, fatigue, weakness etcetera. Moreover, the IDDM patients are prone to ketoacidosis whereas NIDDM is associated with infection or stress ketosis. The economic impact of an increasing incidence of diabetes and the cost involved in treating it and its complications is considerably high. Diabetes affects an estimated 40 million people, greatly increasing the risk of premature death and disabling complications. The management of Type II (NIDDM) diabetes imposes an enormous burden on health care professionals. Fortunately, the pathogenic factors, which cause high blood sugar, can be controlled by exercise, diet, oral anti-diabetic drugs and, in a few instances, in combination with insulin. No oral anti-diabetic drug causes complications when used under medical supervision. With the onset of complications, insulin is desirable to prevent a worsening of the disease.

Since 1921 the discovery of insulin has saved millions of lives. However, even though the disease is one of the earliest recorded in history and despite the fact that hundreds of millions of dollars are being poured into its research all over the world, it is still poorly understood and remains the cause of untold suffering,

disability and premature mortality. Since the early pioneering work of Minkowski and the classical studies of Banting and Best, the intimate relationship between the secretion of insulin from the pancreas and clinical diabetes mellitus has been well established. However, insulin deficiency is not always the primary factor responsible for diabetes. Today there is a good deal of contention as to the exact mechanism involved. For example, some people have found altered tissue responsiveness to a normal amount of blood insulin, circulating insulin antagonists (chemicals which act against insulin), abnormalities in insulin binding probably some truth in all these factors. It appears, therefore that in diabetes one of two things can happen: either run out of insulin, now called Type I insulin dependent diabetes, or something goes wrong with the insulin glucose metabolism so that insulin is available but comes too late and does not work properly. This is called Type II diabetes, not dependent on insulin. The diabetes situation is complicated and difficult to research because sugar metabolism is so basic, all-pervasive, essential and complex. We do know that poor diet, sedentary lifestyle, obesity and mental tension are related factors, but what really goes on and how to cure it is still unknown.

Causes of Diabetes

Diabetes mellitus occurs when the pancreas doesn't make enough or any of the hormone insulin, or when the insulin produced doesn't work effectively. In diabetes, this causes the level of glucose in the blood to be too high. In Type 1 diabetes the cells in the pancreas that make insulin are destroyed, causing a severe lack of insulin. This is thought to be the result of the body attacking and destroying its own cells in the pancreas - known as an autoimmune reaction. It's not clear why this happens, but a number of explanations and possible triggers of this reaction have been proposed. These include:

- Infection with a specific virus or bacteria;
- Exposure to food-borne chemical toxins; and
- Exposure as a very young infant to cow's milk, where an as yet unidentified component of this triggers the autoimmune reaction in the body. However, these are only hypotheses and are by no means proven causes.

Role of Yoga in Diabetics

The practice of yoga is effective as a preventive measure and also to treat diabetes, where the causes are attributed to life style and stress. The following asanas and pranayamas are effective for diabetes. They should be learned with proper guidance, before putting them into practice:

- Vajrasana
- Mandukasan (the version with fists in stomach region)
- Supta Vajrasan

- Viprit karni – Sarvangasan – Halasan – Sarvangasan
- Lie down and relax for a minute
- Chakrasan
- Natrajasan (both legs on one side)
- Purna Shalabhasan
- Triyak Bhujangasan
- Dhanurasan
- Upward facing dog (Udharmukh swan asan)
- Child pose
- Udiyan Bandh
- Paschimottanasan
- Ardhmatsyendrasan
- Parvatasan-Yog Mudra
- Kapalbhathi Nadisodhan pranayam

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