

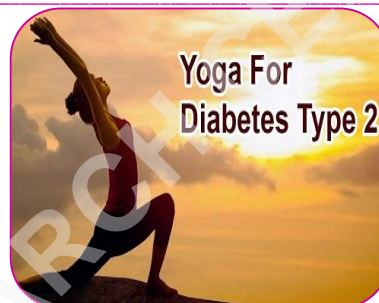


## ROLE OF SKY YOGA IN TYPE 2 DIABETES

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### ABSTRACT

Modern life style is a sedentary life style with wrong eating habits, less physical activity, and increased psychological stress which affects wellbeing and also accelerates the process of aging. In this Diabetes mellitus and Hypertension are the common consequences. Yoga is the combination of body, soul and mind. Yoga offers several practices that help in mastery over the modifications of the mind through the process of calmness of mind to reach balanced functioning of the mind, body complex.

**KEY WORDS:** sedentary life style , less physical activity, and increased psychological stress.

### INTRODUCTION:

Yogiraj Vethathiri Maharishi after years of intense research had systemized a series of exercise that was suitable for all climates and all sections of human in the contemporary age. Simplified Physical exercise was designed by Vethathiri Maharishi to regulate the flows of Air, Heat, Blood and Bio magnetism leading to better health and general wellbeing. These comprises of Hand exercises, Leg exercises, Neuro- muscular breathing exercises, and Eye exercises Kapalabhati, Makarasana, Acupressure, Massaging and Relaxation. Swamiji introduced Kaya kalpa Yoga (Kaya means body and Kalpa means immortal of physical body). Kayakalpa yoga is a complete science which integrates Physics, Biology, Physiology, Philosophy, Genetics and Yoga. Vethathiri Maharishi's Kayakalpa philosophy includes Body, Life-force, Bio-magnetism, Mind, and Sexual vital fluid. Diabetes mellitus is reaching potentially epidemic proportions in India. Diabetes is a complex condition with a multitude of metabolic imbalances involving the regulation and utilization of insulin and glucose (sugar) in the body. Diabetes is currently considered an epidemic disease that is largely preventable and treatable through diet, exercise and lifestyle changes. Vethathiri Maharishi's physical exercise and Kayakalpa Yoga is effective in preventing and treating diabetes to balance the endocrine system, massage and tone the abdominal organs, stimulate the nervous and circulatory systems, and reduce Stress. Sky Physical exercise and Kayakalpa yoga are considered to be a promising, cost-effective option in the treatment and prevention of Type -2 diabetes. This response helps to regulate cortisol and other stress hormones, which increases blood pressure and blood glucose levels. Both play a big role in the development of type 2 diabetes and related complications. This research study is aimed to control the Biochemical changes in TYPE-II DIABETES MELLITUS men by practicing Vethathiri Maharishi's Simplified Physical exercise and Kayakalpa Yoga regularly.

**YOGA: ``Yoga is a complete process of perfection of an individual by developing consciousness to its fullness``- Vethathiri``**

Yoga has for thousands of years had a holistic understanding of the human being its subtle physiology and the connection between mind and body. Yoga views the human body as a composite of Mind, Body, Sprit, and supplies unique techniques, that create a harmony between these increasingly more refined

aspects of our total personality and the world around us. Promotion of positive health by a holistic approach to correct the basic imbalances at the Mind, Prana and body level with regular daily practice of the techniques recommended by our ancient gurus is the best way to prevent these life style diseases.

**Yoga and Health:** Physical well-being is absolutely necessary, but it is only a beginning. In yoga, it is said that the physical body is one of the sheaths of our beings. We have five sheaths or koshas-Annamaya kosha refers to the gross physical body, Manonmaya kosha refers to the mental body (thoughts), Pranamaya kosha refers to the subtle energy body, Vignanamaya kosha refers to the psychic body, Anandamaya kosha refers to the transcendental, blissful body. One can be healthy only if all these levels of being are pure. Hence, we can conclude that our health is also determined by what we think and how we feel about our self and our life. The process of being healthy is, in other words, an ongoing process of growth.

#### **VETHATHIRI MAHARISHI AND YOGA PSYCHOLOGY:**

Guru Vethathiri Maharishi analyses about human psychological condition throughout their family, social and environmental basics. In his self-introspection techniques he introduced very most important parts of human life. They are Thought analyzing, desire reconstruction, anger management and dissolute sorrows. Apart from the four major parts Maharishi researched many of the major basics of human life and psychology. The Physical exercises, mental exercises and Soul practices have designed by Vethathiri Maharishi. All of the practices have been changed our mental and physical ability towards happiest life. The universal Yoga practices are modified and simplified to all common people has done by our Vethathiri Maharishi. Particularly in the term kundalini yoga has been attain very easily by the practice of Vethathiri maharishi. In ancient times the kundalini yoga and the initiation (Theeksha) were very difficult to the practitioner of yoga towards Mukthi or enlightenment (Gnanam). There is four ways to get enlightenment, they are Bakthi yoga, karma yoga, raja yoga and gnana yoga. Based on our purified knowledge (wisdom) the Gnana yoga has been taught and practiced by Vethathiri Maharishi's simplified Kundalini Yoga (SKY). That is very prominent practice of yoga sutras. Then Kayakalpa a top most yogic practise designed by Maharishi based on the Tamil Siddhar way of life is very effective for healthy and long life span. In short Yoga Psychology has important applications in managing psychological, psychosomatic and social problems as well as in promoting and transcending the self. It provides theoretical models and practical tools and techniques for their verification. Selection of Yogic techniques for different purposes and individuals is a different task.

#### **SKY ACTIVITIES IN SKY YOGIC HEALTH CAMP:**

1. Teaching physical exercises and Kayakalpa yoga.
2. Teaching a universal system of meditations and Introspections and self-realizations.

#### **PHYSICAL EXERCISE:**

There are two types of simplified physical exercises - 1. Body postures, 2. Movements.

Physical exercise ensures the proper flow of blood, heat, air, energy and bio- magnetic circulation leading to better health and general wellbeing. This physical exercise comprises seven sections dealing with every part of the body.

**KAYAKALPA YOGA:** Through this sexual energy is transmuted to spiritual energy by directing it to the crown chakra and beyond.

**SKY MEDITATION:** This is a form of meditations to merge the mind with the subtle life force. This practice reduces the frequency of brain waves, enhances awareness, intelligence and understanding.

**INTROSPECTION:** Meant for purification of the self, it includes self – analysis to sublimate the personality.

**TYPE 2 DIABETES:**

Diabetes mellitus (DM) is a group of metabolic disturbances characterized mainly by hyperglycemia, and finally resulting in the appearance of various complications (macro and micro – angiopathyetc). These complications relate basically to the heart, the vessels, the eyes, the kidneys and the nervous system. Hyperglycemia is a result of defect in the secretion or action of insulin, or both.As of today, modern medicine says that there is no positive system of cure for diabetes. It says that diabetes is an incurable disease that can only be managed. Medicines can only control the symptoms of diabetes, but the disease is not really affected by this mode of treatment, and may even develop in severity. In contrast, yoga therapy for diabetes begins on a positive note that the disease can be managed successfully and perhaps, even eliminated. Yoga works successfully in the management of diabetes because it taps the body’s innate regenerative ability. Rather than approaching the disease from the outside, yoga approaches it from within, relying on re-balancing of the nervous system, re-stimulation of the endocrine glands and pancreas, and improvement of the physical organism and its energy flow. All these together with meditation set the stage for the patient’s recovery and a deeper understanding of himself, which is the key to eliminating psychosomatic diseases. Practicing yoga causes an enhanced state of relaxation, improving stamina and immunity towards disease. An overall improvement of physical health and mental well-being is seen.

**UNDERSTANDING DIABETES:**

Diabetes (diabetes mellitus) is a disease caused by the presence of abnormally high levels of blood glucose in the body. Glucose is the fuel for the cells of the body. When we eat food, the carbohydrates present in what we eat get converted into glucose inside the body. This glucose is then absorbed as a fuel by the cells of the body. The absorption is facilitated only by insulin, which is a hormone secreted by the beta cells of our pancreas. When glucose enters the body, it triggers the release of insulin from the pancreas, thus ‘pushing’ glucose into the cells of the body and also into the liver and fat cells, where it is stored. Hence, without insulin any amount of glucose in the body is useless, as it cannot get absorbed by the cells.

The balance is maintained in the body by a hormone called glucagon which is secreted by the alpha cells in the pancreas. It works contrary to insulin and is released when the body is starved or undergoes strenuous exercise. Glucagon triggers the release of stored glucose in the body in order to feed the cells. Diabetes occurs due to a deficiency in insulin production or insulin action, causing blood glucose levels to rise dangerously and leading to serious complications and, maybe even, premature death.

**Type 2 Diabetes: (Adult Onset Diabetes)**

Type 2 diabetes accounts for 90-95 per cent of all diabetes cases. Here insulin is produced by the body but in very small amounts, which is insufficient or the insulin produced is not utilized by the cells properly, leading to insulin resistance. As the need for insulin increases, the pancreas needs to overwork and may gradually lose the ability to produce insulin. Type 2 diabetes is usually associated with people over 40 years of age (although these days), it is seen even in people who are 25 years of age. Patients of Type 2 diabetes are often overweight, lack physical exercise and have a family history of diabetes or of gestational diabetes.

**BLOOD GLUCOSE LEVELS FOR DIABETES:** According to the NDIC, the following glucose measurements for a normal fasting adult are as follows:

Glucose Plasma Reading (mg/dL)	Diagnosis
99 or lower	Normal
100 to 125	Pre-Diabetes
126 or above	Diabetes

**Diabetes and the Fasting Plasma Glucose Test:** The fasting plasma glucose test (FPG) is the preferred method for diagnosing diabetes, because it is easy to do, convenient, and less expensive than other tests,

**PATHOPHYSIOLOGY OF TYPE 2 DIABETES MELLITUS:**

Type 2 diabetes mellitus is a heterogeneous syndrome with a complex interaction of genetic and environmental factors which affect multiple phenotypic manifestations in the body such as insulin secretions and action, pancreatic  $\beta$  cell mass, distribution of body fat, and development of obesity.

Type 2 DM is generally characterized by two main pathophysiologic entities.

1. Resistance to the action of insulin
2. Insufficient secretion of insulin from the  $\beta$  cells of the pancreas

Both of these pathophysiologic disturbances (insufficient secretion and peripheral insulin resistance) are thought to be necessary for the development of the disease.

**RESEARCH STUDY:**

**OBJECTIVE OF THE STUDY:** The major objective of the study is to know about the importance of simplified kundalini yoga meditations, exercise and Kayakalpa and its therapeutic values on TYPE 2 diabetic patients.

**STATEMENT OF THE PROBLEM:**

To assess the effect of SKY YOGA meditations, exercise and Kayakalpa yoga on Fasting blood sugar levels of type 2 diabetic patients.

**SIGNIFICANCE OF THE STUDY:**

This study was unique in suggesting the sky yoga exercise and Kayakalpa yoga on Fasting blood sugar levels of type 2 diabetic patients.

**HYPOTHESIS:**

It was hypothesized that there would be any significant difference on Fasting blood sugar level of type 2 diabetic patients due to sky yoga meditations, exercises, and Kayakalpa yoga.

**DELIMITATIONS:**

- \*This study was delimited to type 2 diabetic patients only.
- \*Age of subjects was ranged from 40 to 65.
- \*The independent variable was SKY YOGA exercises, and Kayakalpa yoga.
- \*The dependent variable was Fasting blood sugar level.

**LIMITATIONS:**

The changes in climatic conditions such as temperature, atmospheric pressure, taken by the subjects are not considered.

**SKY INTERVENTION MODULE:** \*Simplified Physical Exercise \*Simplified Kayakalpa \*Simplified Kundalini Meditation \*Introspection

**RESEARCH DESIGN AND METHODS:**

The study includes 30 patients. All the pts are around the age between 40 to 65. All the patients are from residential SKY yogic health camp program held in aliyar. None of whom were alcoholic or smokers; daily they do the practices of SKY health camp program schedule with saathvic diet. Throughout the program, monitor glucose levels and under the supervision of a physician, and take appropriate medicinal dosages as and when required. After some days weeks one may be able to reduce such dosages. Practice in the morning and the evening for 40 to 60 minutes the recommended series of postures according to one's capacity. Practice before meals, but after consuming glucid liquids. Regulate the diet throughout the program. Avoid simple sugars such as white sugar, honey, glucose and sweets, and eat complex

carbohydrates such as wheat, oatmeal, buckwheat, corn, brown rice and beans. Avoid processed food and eat foods with lots of fiber and nutrients.

**CONCLUSION:**

Exercise (physical or muscular activity) is defined as every physical movement produced by skeletal muscles resulting in energy consumption. During the moderate intensity exercise in non – diabetic people, blood glucose levels remain essentially stable .This is due to the fact that hepatic glucose production increases 2-4 fold to compensate for the increased needs of the exercising muscles. Hepatic glucose production during and after the exercise session is under the direct control of glucagon and insulin and is mainly determined by the molecular relationship of glucagon/insulin in the portal vein circulation. If moderate intensity exercise continuous for several hours hepatic glucose production can no longer compensate for the increased muscular utilization and plasma glucose levels tend to decrease. This is conjugation with the increased insulin sensitivity that exercise produces leads to a decrease in insulin secretion by the pancreas. In contrast, glucagon levels increase (which promotes glycogenolysis and gluconeogenesis in the liver and lipolysis in the adipose tissues).If exercise is more prolonged secretion of other compensatory hormones in addition to glucagon (epinephrine , nor – epinephrine , growth hormone and cortisol) starts to play an increasingly primary role .These hormones promotes lipolysis and stimulate hepatic glucose production. Adipose tissues triglycerides are hydrolyzed to FFAs and glycerol, used as fuel in the muscles and as glucose production substrate in the liver respectively. Consequently, prolonged exercise (for several hours0 accompanied by a reduction in insulin secretion and increased secretion of compensatory hormones, ultimately results in decrease of glucose utilization and increase of FFA utilization by the exercising muscles.

It has been able to confirm that SKY Yoga can be used as an effective therapy in reducing Fasting blood sugar levels in type 2 diabetic. There also improvement in the sense of physical and mental well – being and the overall quality of life. Attendance was verified through direct observation 97% attendance rate was maintained. Hence diabetes is largely preventable and treatable through saathvic diet, and sky yogic practices. The results of this study showed clearly that sky yogic practices have a positive effect on Fasting blood levels with type 2 diabetes. Hence this sky yogic practices was a great contribution given by Vethathiri maharishi to the society.

**ONE MONTH RESIDENTIAL CAMP INCLUDES....**

SKY ACTIVITIES IN SKY YOGIC HEALTH CAMP:	
DAILY SCHEDULE	
Timings	Programme
05:30 AM to 06:30 AM	Exercise
06:30 AM to 07:15 AM	Walking
07:15 AM to 08:00 AM	Breakfast
08:00 AM to 09:30 AM	Rest
09:30 AM to 10:00 AM	Meditation
10:00 AM to 11:00 AM	Lecture 1
11:00 AM to 11:30 AM	Tea Break
11:30 AM to 12:30 PM	Lecture 2
12:30 PM to 01:00 PM	Lunch
01:00 PM to 03:00 PM	Rest
03:00 PM to 03:15 PM	Tea Break
03:15 PM to 03:30 PM	Meditation
03:30 PM to 04:30 PM	Lecture 3
04:30 PM to 05:00 PM	Free Break

05:00 PM to 06:00 PM	Exercise
06:00 PM to 07:00 PM	Walking
07:00 PM to 07:30 PM	Dinner
07:30 PM to 05:00 AM	Rest

**PRE AND POST TEST VALUES:**

<b>Blood Sugar (Fasting)</b>				
S.No.	Name	Age	Pre test	Post test
1	K S Radhakrishnan	54/M	210	97
2	K V Guhan	54/M	109	87
3	K K Krishnamoorthy	63/M	123	50
4	A Maruthachalam	63/M	77	58
5	A Krishnan	57/M	284	153
6	S Soundrapandian	43/M	161	74
7	A Varadharajan	52/M	182	149
8	N Pandurangan	55/M	146	111
9	K.Premkumar	50/M	94	101
10	N.Lakshmanan	53/M	82	79
11	K.Mohanachandran	42/M	182	99
12	M.B.Gopal	49/M	161	264
13	A.Nagaraj	40/M	349	129
14	S.Anantharoopan	60/M	336	152
15	R.Gopal	55/M	153	68
16	P.Ganapathi	59/M	193	157
17	Thirunavukkarasu	57/M	97	111
18	S.N.Baskar	41/M	118	93
19	Ramamoorthi	54/M	112	91
20	P.Mani	65/M	111	109
21	S.Rammohan	55/M	86	76
22	N.Murugaiyan	49/M	80	72
23	J.Karunakaran	43/M	122	76
24	B.K.Ravi	49/M	118	112
25	S.Nagarajan	57/M	156	111
26	Palaniyappan	60/M	69	53
27	P.Jayamani	61/M	115	103
28	D.Velayutham	64/M	114	75
29	J.Srinivasan	31/M	127	91
30	R.Arunachalam	60/M	102	80

**Paired Samples Statistics:**

	Mean	N	Std. Deviation	Std. Error Mean
Blood sugar fasting	1.4563	30	70.56349	12.88307
Pretest values	1.0270	30	42.03623	7.67473
Posttest values				

**Paired Samples Test:**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 blood sugar fasting - posttest	4.29333E1	61.11884	11.15872	20.11118	65.75548	3.848	29	.001

**Result:** From the above table it was identified that sig (2-tailed value)  $0.01 < 0.05$  (probability value). So the null hypothesis was rejected. Since the null hypothesis was rejected, we may conclude that the given treatment is effective.