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# EFFECTS OF YOGA POSTURES AND PRANAYAMAS ON BLOOD GLUCOSE, LIPID PROFILE, AND HBA1C IN TYPE 2 DIABETIC PATIENTS

**Amit Kumar Shaw[1*],Dr. S. Murugesen[2],**

[1*]Full-Time PhD Scholar in Yoga Science, Faculty ofYoga Science and Therapy, Meenakshi Academy of Higher Education and Research, No.12,VembuliammanKoil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India. E- Mail ID: jaijaisitaram110@gmail.com
[2]Professor, Faculty of Yoga Science and Therapy, Meenakshi Academy of Higher Education andResearch,No.12, Vembuliamman Koil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India. E-Mail ID: murugesyoga@gmail.com.

***Corresponginds authors:** Amit Kumar Shaw
[*]Full-Time PhD Scholar in Yoga Science, Faculty ofYoga Science and Therapy, Meenakshi Academy of Higher Education and Research, No.12,VembuliammanKoil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India. E- Mail ID: jaijaisitaram110@gmail.com

**ABSTRACT** In addition to hyperlipemia and hyperglycemia, type II diabetes is characterized by decreased insulin secretion, obesity, and a significant risk to one's health. The purpose of this study was to determine whether pranayamas and yoga poses have any bearing on particular metrics. Two groups comprising one hundred individuals (aged 40 to 55) with type-II D.M. without complications were formed. those in group B practiced yoga in addition to conventional medicine, while those in group A received conventional medicine alone. The trial lasted for ninety days. HbA1C, lipid profile, and blood glucose baseline measurements were obtained during enrollment and again after 90 days of research. Results revealed that group B patients had a significant improvement in all biochemical indicators, with the exception of TG, whereas group A patients demonstrated

**KEYWORDS**: **-** Diabetes mellitus, lipid profile, HbA1C, Blood glucose, pranayamas and yoga asanas.

**INTRODUCTION.** Jan. 2013, Int J Pharm Bio Sci; 4(1): (B) 169–172 Chronic Type II Diabetes is a very common condition that is closely linked to obesity and the distribution of body fat.1,7. Several behavioral therapies, such as increasing physical activity, changing one's diet, and quitting smoking, have been proposed for the prevention and control of type II diabetes.2.

Mind-body therapies have been proposed as a means of controlling the stress psychology linked to obesity, hypertension, and insulin resistance8. In the present period, yoga is used in the therapeutic field9. Through a neuro-endocrine mechanism, it reduces oxidative stress and improves the glycaemic state of diabetes3, 4.
Yoga is meant to help people achieve mental equilibrium and relaxation, which in turn is meant to improve how they view life's circumstances. Patients with diabetes benefit from yoga by losing weight, preserving blood flow to different muscles, lowering stress hormones, and enhancing pancreatic insulin release. The aim of this study is to methodically examine and combine yoga therapies intended to prevent and manage type 2 diabetes.

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**MATERIALS AND METHODS** The study is being carried out at RAVINA HOSPITAL no99 Madurvoyal Chennai Department of DIABETIES and Biochemistry in collaboration with yoga There were two groups of 50 individuals each in the study design. Group A consists solely of traditional medication takers, while group B also includes conventional medication takers and yoga practitioners. Type II diabetic participants who were not using insulin were opportunistically recruited by general practice staff members who had had diabetes for no more than ten years. . Individuals who were unwilling to practice yoga, had pulmonary tuberculosis, cancer, rheumatoid arthritis, or myocardial infarction were not accepted. HbA1C was the first (Primary) outcome measure. Lipid levels, blood glucose levels, and diabetes-related quality of life were among the secondary end measures.

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**STATISTICS** All the values are expressed as Mean + SD. Paired students t-test was applied to assess the statistical significance in the change in mean values of biological parameters before and after yogic intervention. RESULTS Table I shows the lipid profile and other diabetic markers in type-II diabetes who were on conventional antidiabetic therapy and observed no statistical difference in mean values of lipid profile, fasting blood sugar and HbA1C, P>0.05 between two groups. Table II shows that the group who were on yoga with conventional medicine shows greater control on diabetic markers than the group who was on conventional therapy alone. P> 0.01 except triglycerides (P> 0.05)
Pre test Value of bio parameters

**Table 1**

| Parameters | GROUP A | GROUP B | P Value |
|---|---|---|---|
| Total Cholesterol | 187.06±33.42 | 6.85±1.19 | >0.05 |
| LDL | 117.56±33.87 | 112.35±26.48 | >0.05 |
| HDL | 37.48±4.73 | 39.83. ±3.95 | >0.05 |
| TRIGLYCERIDES | 159.16±23.99 | 169.38±30.9 | >0.05 |
| FBG | 156.77±29.93 | 161.03±32.93 | >0.05 |
| HbA1C | 6.85±1.19 | 7.07±1.34 | >0.05 |

Post test Value of bio- parameters

**Table 2**

| Parameters | GROUP A | GROUP B | P Value |
|---|---|---|---|
| Total Cholesterol | 187.06±33.42 | 169.95±26.16 | <0.01 |
| LDL | 117.56±33.87 | 94.93±26.44 | <0.01 |
| HDL | 37.48±4.73 | 42.31. ±3.59 | <0.01 |
| TRIGLYCERIDES | 159.16±23.99 | 156.72±31.02 | >0.05 |
| FBG | 156.77±29.93 | 139.65±30.89 | <0.01 |
| HbA1C | 6.85±1.19 | 6.30±0.95 | <0.05 |

**DISCUSSION** This study set out to determine whether yoga could effectively treat type II D.M. The goal is to conduct a methodical analysis of a yoga intervention trial intended to manage type 2 diabetes. individuals in group II showed a significant improvement in their HDL levels and a significant decrease in their blood glucose, cholesterol, LDL, and HbA1c levels when compared to conventional treatment alone; group I individuals showed no significant difference in any of these parameters.
**.** However, TG levels did not significantly alter. The parameters were collected twice: first at the start of the trial and again after ninety days. The blood glucose levels were significantly lowered following a 90-day yoga intervention. In response to yoga therapy, Jain et al.11, 15 discovered a significant drop in oral hypoglycemic medications for the maintenance of normoglycemia together with a reduction in hyperglycemia.
This study's observation of a lower lipid profile is consistent with certain past research. Significant decreases in LDL and free fatty acid levels were noted by Sahay et al. and Bajlani et al.12, while HDL levels increased. Furthermore, after yoga therapies, Sahay et al. have also documented a significant decrease in body fat and an increase in lean body mass in those with type 2 diabetes. This study found that 90 days of yoga practice significantly lowered HbA1c levels. HbA1c values were replicated by Monro R 13, 14, 15, et al. The mean differences showed that the HbA1c levels were decreased by yoga interventions.
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