

## Yoga: a tool for amelioration of obesity

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### KEY WORDS

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### ABSTRACT

In this study the case of overweight/obese participant is presented. The participant is a resident of Panjab University, Chandigarh, India. She voluntarily enrolled herself in the Yoga camp which was conducted at Gymnasium Hall, Panjab University, Chandigarh. The patient performed the Diabetic Yoga protocol for one month. The weight of the patient before joining the Yoga camp was 96 kg and the height was 170 cm. During the conversation, the patient revealed that during the practice of one month Diabetic Yoga protocol she lost 6 kg of her weight. This case report is an attempt to provide Yoga as safe, economical and simple technique for weight reduction.

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## Introduction

The problem of Obesity is increasing globally and has emerged as a precursor of major health problems. Obese individuals are at a greater risk of developing comorbidities like Diabetes Mellitus, Cardiovascular Diseases, respiratory and psychological Problems etc. (1). According to World Health Organization, obesity is an exaggerated buliding up of fat which presents risk to health (2). Body Mass Index (BMI) is used to measure body fat by using the measurements of height and weight. An individual is found to be overweight and obese if he/she had a BMI of  $\geq 25$  kg/m<sup>2</sup> and  $\geq 30$  kg/m<sup>2</sup> respectively (3). According to the National Family Health Survey (NFHS) it was found that the prevalence of overweight and obesity was more than 3 times higher among urban population in comparison with rural population (4). Moreover, overweight and obesity are more among women population as compared to males. The maximum proportion of overweight and obese female population was found in Punjab (30%) followed by Kerala (28%) and Delhi (26%) (4). We argue that India can achieve healthy weight by convenient and home based Yoga, meditation and exercise programs (5). Life modification such as Yoga has been used as one of the effective ways as management of weight (6). Yoga is a mind body practice which focuses upon overall well being of an individual viz. physical, mental, emotional and spiritual (7). Various studies have shown the efficacy of Yoga in reduction of weight (8) (6).

## Case presentation

The participant is a resident of Panjab University, Chandigarh, India. She was enrolled in the Yoga camp which was conducted

at Gymnasium Hall, Panjab University, Chandigarh by a Yoga instructor. As per the conversation with the participant she revealed that she was struggling with consistent weight gain and wanted to manage her weight without taking any medications. She further added that she started gaining her weight after her pregnancy. During her pregnancy she was diagnosed with thyroid. She also took medication for the same. At present, she had no associated illness with obesity and didn't take any kind of medications. Moreover, the participant had no family history of obesity and its associated cormobidities. The participant was trained for the Diabetic Yoga Protocol for one month and after that she continued to perform the same at home for 2 months. The weight of the patient, before joining the Yoga camp, was 96 kg with a height of 170 cm. Her BMI was 33.2 kg/m<sup>2</sup>. This falls in the category of Obese I.

The three month Yoga camp was conducted in Panjab University, Chandigarh. The detailed Diabetic Yoga protocol was shown in our previously published paper (18). The height and weight measurement were taken pre and post Yoga practices. The weight was measured by electronic weighing machine and height was measured by using Stadiometer. Furthermore, written informed consent was taken from the participant. In addition, sociodemographic characteristics of the participant are shown in Table 1.

According to World Health Organization, obesity is a disproportionate or exaggerated accumulation of fat which further results into several consequences to the well being of the individuals. Body Mass Index ((BMI – kg/m<sup>2</sup>) was used for assessment of overweight and obesity in the individuals by using the formula weight in the Kilograms divided by the square of the height in meters. Furthermore, the recommended values for the

**Table 1:** Socio demographic characteristics of the study participant

Sociodemographic Characteristics	Values
Age (Years)	31 Year
Previous Yoga Experience	No
Marital Status	Married
Education Level	Senior Secondary School
Occupation	Home maker

**Table 2:** Characteristics of baseline and after one month DYP and home based values of BMI

Variable	Baseline	One month DYP with Instructor	Two month Home Based DYP
BMI	33.2 kg/m <sup>2</sup>	31.1 kg/m <sup>2</sup>	29.4 kg/m <sup>2</sup>
Weight	96 kg	90 kg	85 kg
Height	170	170	170
Category (According to WHO guidelines)	Obese Class – I (30.00–34.99)	Obese Class – I (30.00–34.99)	Overweight (25.00–29.99)

assessment of overweight and obesity in the individuals were BMI  $\geq 25$  (overweight) and BMI  $\geq 30$  (Obesity) respectively (9).

The one month diabetic Yoga Protocol training with instructor and two month home follow up resulted in a significant reduction of weight. The participant experienced reduction weight from the 96 kg to 85 kg. This results in the reduction of BMI values from 33.2 kg/m<sup>2</sup> (obese I) to 29.3 kg/m<sup>2</sup> (overweight) are shown in Table 2.

## Discussion

Obesity is a metabolic disorder (10) and the problem of obesity is widely prevalent. However, obesity is also considered as modifiable risk factor (6, 11) and Integrative approaches are used popularly all around the world for its management. Yoga is also one of them. Due to modern inactive lifestyle, the risk of obesity has been increasing among the masses (12). By performing the routine physical activity, one can manage and prevent obesity (13). Yoga might be considered as a simple and convenient way for weight management (14). In this case study, the participant performed regular Yoga practice adherent to the training regime which further helped her in weight loss. Furthermore, she was also able to perform all *asanas* (postures) with enthusiasm resulting in energy consumption and prevent increase in body weight. Additionally, the participant also undertook some dietary changes which included light food at night and excluded fried, sweet and rice from the diet. Besides the physical benefits, Yoga practice is also helpful in giving mental relaxation thus modulating leptin and HPA axis (15)(16)(17).

## Conclusion

Yoga intervention is considered to be an adjuvant therapy in treatment and prevention of weight gain in obese and

overweight individuals. However, the results also depend on various factors like age, adherence, frequency and adaptation to the training regime. The DYP protocol which was specifically designed for Prediabetics and Diabetics may be useful for obese and overweight individuals. With reduction in weight, Yoga can provide risk management of Diabetes.

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## Author contributions

NK: Writing, Data Collection, Analysis and Interpretation of Data.

NM: Co-Conceptualization and Design of the study.

PS: Participant

AA: Conceptualization and Editing of the manuscript.

## Informed consent

Yes. Study was carried out at the center from where report has been communicated.

## Conflict of interest

The authors declares no conflict of interest.

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