

## “Role of Yoga in Managing Obesity: A Review”

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### **Abstract:**

Obesity rates are rapidly increasing worldwide, posing significant health risks. The number of overweight and obese individuals, especially children, is projected to reach alarming levels. The human body consists of fat-free mass and body fat, with essential and non-essential fats playing different roles. Yoga, with its practical applications and centuries of testing, has gained scientific attention in the 21st century. Research has shown that yoga principles and techniques synchronize the body's psycho-neuro-immuno-glandular mechanisms, promoting positive physical and mental health.

### **Introduction:**

Obesity has become prevalent in modern society, characterized by excessive and abnormal weight gain due to the accumulation of body fat. It is a condition that affects both the body and mind, and its understanding has evolved over time. Obesity is associated with health problems and increased risks, primarily caused by consuming more calories than burned through physical activity. Ayurveda defines obesity as "Atisthula," a condition where fat and muscular tissues excessively increase, impairing metabolism. Obesity is defined as a 20% or more increase in body weight above the ideal level and is classified based on severity. It is considered a disease with links to various associated conditions such as diabetes, cardiac problems, and coronary heart disease.

### **Description:**

Obesity is recognized as a neglected public health problem globally, with significant morbidity and mortality rates. It is often associated with metabolic disorders and increases the risk of various diseases, including diabetes, hypertension, dyslipidemia, cardiovascular disease,

and certain cancers. The prevalence of obesity is rising rapidly, especially in developing countries undergoing industrialization and urbanization. India, as the second most populous country, is also experiencing this epidemiological transition. Studies have indicated a growing prevalence of obesity, particularly in urban areas, where sedentary lifestyles prevail, such as among individuals working in the corporate sector. The busy schedules of corporate employees make it challenging to manage their lifestyle, contributing to sedentary behaviors and obesity.

Yoga has emerged as a potential tool for managing obesity. Its holistic approach helps individuals adopt a balanced lifestyle, addressing sedentary habits and dietary patterns. Various yoga asanas (poses) stimulate specific organs and endocrine glands, regulating metabolic functions. The positive effects of yoga on obesity management have been researched by scientists in the fields of physiology, medical research, and psychology. The synchronization of psycho-neuro-immuno-glandular mechanisms through yoga principles and techniques promotes positive physical and mental health. Further exploration of yoga's specific effects on obesity management is warranted, considering its potential as a practical and effective approach in combating this global health issue.

Overwhelming lifestyle and sedentary habits have contributed to the global rise in obesity. Obesity has nearly tripled worldwide since 1975. In 2016, more than 1.9 billion adults aged 18 years and older were overweight, with over 650 million of them being obese. About 39% of adults were overweight, and 13% were obese. Shockingly, in most countries, overweight and obesity-related complications cause more deaths than underweight conditions. The good news is that obesity is preventable.

There are several common signs and symptoms associated with obesity, including excess body fat, especially around the waist, shortness of breath, increased sweating, snoring, trouble sleeping, skin problems due to moisture in skin folds, difficulty performing simple physical tasks, fatigue ranging from mild to extreme, pain in the back and joints, and psychological issues such as negative self-esteem, depression, shame, and social isolation.

#### • Cause of obesity

The causes of obesity are complex, and it is considered one of the major health problems worldwide. It is often associated with metabolic syndrome, a collection of related conditions such as high blood pressure, elevated blood sugar, and an unfavorable blood lipid profile. People with metabolic syndrome face a higher risk of heart disease and type 2 diabetes compared to those within a normal weight range. While eating behavior and lifestyle choices play a significant role in weight gain, it is essential to understand that factors such as genetics and hormones can also contribute to overeating and weight gain. Some individuals may have a genetic predisposition to gaining weight, but lifestyle changes can help overcome these disadvantages. However, it is incorrect to solely attribute weight gain to willpower. Behavior is influenced by various factors, and it is overly simplistic to assume that willpower alone determines eating habits.

Here are ten leading causes of weight gain, obesity, and metabolic diseases, many of which are unrelated to willpower:

1. Genetics: Certain genetic factors can influence an individual's susceptibility to obesity.
2. Hormonal factors: Hormonal imbalances can disrupt appetite regulation and contribute to weight gain.
3. Sedentary lifestyle: Lack of physical activity and prolonged sitting are significant contributors to weight gain.
4. Caloric imbalance: Consuming more calories than the body requires leads to weight gain.
5. Unhealthy diet: Diets high in processed foods, sugary beverages, and unhealthy fats contribute to obesity.
6. Environmental factors: The availability and accessibility of unhealthy food options and sedentary environments can promote weight gain.
7. Lack of sleep: Inadequate sleep disrupts hormones that regulate hunger and fullness, leading to increased appetite and weight gain.
8. Stress: Chronic stress can trigger emotional eating and promote weight gain.
9. Medications: Certain medications, such as antidepressants and corticosteroids, can contribute to weight gain.
10. Socioeconomic factors: Limited access to healthy food options, lower education levels, and socio-economic disparities can impact weight and contribute to obesity.

Addressing obesity requires a comprehensive approach that involves individual behavior changes, public health initiatives, and policy interventions to create an environment that supports healthy lifestyles.

Sure, I will continue in English. Here are some key points based on the information you provided:

- 1. Genetic Component:** Obesity has a genetic component, and children of obese parents are more likely to be obese themselves. However, genetic predisposition is not the sole determinant of obesity. Environmental factors, such as diet, can influence gene expression and play a significant role in weight gain.
- 2. Junk Food:** Heavily processed foods are often made with refined ingredients and additives. They are designed to be inexpensive, have a long shelf life, and be highly palatable to encourage overconsumption. Processed foods are engineered to be addictive and can lead to overeating.
- 3. Food Addiction:** Some junk foods, particularly those high in sugar and fat, can stimulate the reward centers in the brain, leading to addiction-like behaviors. People can lose control over their eating behavior and find it difficult to resist these foods, similar to individuals struggling with substance addiction.
- 4. Aggressive Marketing:** Junk food producers employ aggressive marketing tactics, sometimes even misleading consumers by marketing unhealthy products as healthy options.

They often target their marketing towards children, contributing to early-onset obesity and unhealthy eating habits.

**5. Insulin:** Insulin is a hormone that regulates energy storage. The Western diet, high in refined carbohydrates, can promote insulin resistance in overweight and obese individuals. Elevated insulin levels can lead to the storage of excess energy as fat, contributing to weight gain. Cutting back on refined carbohydrates and increasing fiber intake can help lower insulin levels.

**6. Medications:** Certain pharmaceutical drugs, such as antidepressants, diabetes medication, and antipsychotics, can cause weight gain as a side effect. These medications can alter the body's metabolic rate or increase appetite, leading to weight gain.

**7. Leptin Resistance:** Leptin is a hormone produced by fat cells that helps regulate appetite and fat storage. In individuals with obesity, leptin levels are high, but the hormone may not effectively cross the blood-brain barrier to signal satiety. This can contribute to increased appetite and overeating.

**8. Food Availability:** The abundance and easy access to food, especially junk food, have increased over the past few centuries. Shops strategically display tempting foods, and junk food is often cheaper than healthier options. Limited availability of fresh, whole foods in certain areas, particularly in lower-income neighborhoods, can contribute to poor dietary choices.

**9. Sugar:** Excess consumption of added sugars, which are composed of glucose and fructose, can negatively affect hormones and metabolism, leading to weight gain. Fructose, primarily obtained from added sugars, may contribute to insulin resistance and elevated insulin levels. Unlike glucose, fructose does not promote satiety effectively.

These factors interact with each other and with individual behaviors and lifestyle choices to contribute to obesity. It's important to consider a holistic approach to address obesity, focusing on healthy eating habits, physical activity, and overall well-being.

### **Complication of obesity-**

Complications of obesity include several potentially serious health problems. Here are some of them:

1. Heart disease and strokes: Obesity increases the risk of high blood pressure and abnormal cholesterol levels, which are risk factors for heart disease and strokes.

2. Type 2 diabetes: Obesity can affect insulin usage in the body, leading to insulin resistance and an increased risk of developing type 2 diabetes.

3. Certain cancers: Obesity is associated with a higher risk of various cancers, including uterine, cervical, endometrial, ovarian, breast, colon, rectal, esophageal, liver, gallbladder, pancreatic, kidney, and prostate cancer.

4. Digestive problems: Obesity increases the likelihood of developing heartburn, gallbladder disease, and liver problems.

5. Sleep apnea: People with obesity are more likely to experience sleep apnea, a disorder characterized by repeated breathing interruptions during sleep.
6. Osteoarthritis: The excess weight associated with obesity puts increased stress on weight-bearing joints, leading to complications such as osteoarthritis.
7. Diagnosing obesity typically involves measuring a person's body mass index (BMI), which is a calculation based on weight and height. Other measures of body fat and fat distribution, such as skinfold thickness tests and waist-to-hip comparison, can provide more accurate assessments. Additional diagnostic tests may include blood tests to examine cholesterol and glucose levels, liver function tests, diabetic screenings, thyroid tests, and heart tests like electrocardiograms (ECG or EKG). The measurement of waist circumference is also a useful predictor of obesity-related health risks.

### **Yogic concept of obesity-**

Obesity in yogic view, which is not able to do asana pranayama, there is no flexibility in the body. Yoga, as per yogic scriptures, is a spiritual discipline that aims to bring harmony between the mind and body. It is an art and science of healthy living, focusing on the union of individual consciousness with universal consciousness. Yoga is considered a path to self-realization and liberation from suffering. It encompasses various methods through which individuals can achieve mastery over their destiny. Yoga has been practiced for thousands of years and is believed to contribute to both physical and spiritual well-being.

### **Pathogenesis of diseases in yoga as per yoga shastra-**

The pathogenesis of diseases in yoga, according to yoga shastra, involves three main causes:

1. Purva janma vritti (deeds of previous birth): Yoga believes in the process of rebirth and considers that past actions in previous lives can influence the occurrence of diseases in the present life.
2. Manasika karma (psychological measures): This cause encompasses mental and emotional factors that contribute to the manifestation of diseases. Negative mental states such as attachment (raga), aversion (dwesha), and fear (abhinivesha) can lead to disturbances in the mind (chitta vikshepas) and give rise to various psychological disorders like anger (krodha), greed (lobha), ego (ahankara), and delusion (moha). These mental imbalances play a significant role in the development of physical ailments (sharirika vyadhi).
3. Sharirika karma (physical measures): This cause involves physical factors that contribute to the onset of diseases. Improper dietary habits (mithya ahara), suppression of natural urges (vegadharana), and a sedentary lifestyle can lead to the progression of diseases like obesity.

### **Beneficial yoga procedures for obesity-**

For the management of obesity, yoga recommends various beneficial procedures:

**1. Preventive aspects:** Yama (ethical principles), Niyama (self-discipline), Asana (physical postures), and Pranayama (breathing techniques) help in developing behavioral adaptations and self-control.

**2. Curative aspects:** Asana and Pranayama are emphasized for their therapeutic benefits in obesity management. Asanas, through specific postures and stretches, stimulate organs and endocrine glands, regulating metabolic functions. Pranayama exercises help in purification and balancing of the vital energy (prana) in the body.

Additionally, specific yogic practices are mentioned in different yoga texts for obesity management:

**Shatkarma:** Practices like Neti (nasal cleansing) and Kapalabhati (skull-shining breath) are recommended for reducing imbalances related to the kapha dosha, which is associated with obesity.

**Asanas** (physical postures) promote stability, health, and lightness in the body, while Pranayama helps in purifying the nadis (energy channels). Shatkarmas like Medasleshmahara (reducing fat) and Kapalabhati are also mentioned.

In addition to the above practices, yoga emphasizes the importance of Sukshma Vyayama (loosening exercises) to warm up the body, improve blood circulation, reduce muscle tension, and increase flexibility.

**Surya Namaskar (Sun Salutation)** is another beneficial practice in obesity management. It consists of a series of twelve asanas that awaken the chakras (energy centers) in the body, release vital energy, and stimulate metabolism. It helps reduce fat throughout the body and provides holistic therapy for prevention and treatment of obesity.

**Meditation** - Meditation is considered a consciousness-altering technique with numerous benefits for psychological well-being. By focusing the mind and achieving a mentally clear and emotionally calm state, meditation promotes relaxation and tranquility. It can help reduce stress and improve overall well-being.

It's important to note that while yoga practices can be beneficial for overall health and well-being, they should be practiced under the guidance of a qualified yoga instructor or healthcare professional.

## **Conclusion**

In conclusion, regular practice of yoga offers numerous benefits in maintaining a healthy body weight and preventing obesity. It promotes positive physical and mental health, reduces the risk of heart diseases and hypertension, and keeps the bones, muscles, and joints healthy. Additionally, yoga helps reduce anxiety and depression.

The study found that sedentary lifestyle and faulty dietary habits are major factors contributing to the development of obesity. Many literature reviews have demonstrated the positive impact of yoga on obesity prevention. This review emphasizes the crucial role of yoga in preventing

obesity and promoting overall health. Yoga not only maintains physical health but also supports mental well-being.

Therefore, incorporating regular yoga practice into daily life is beneficial for preventing various diseases and leading a healthy lifestyle.

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