



THE PHYSIOLOGY OF YOGA AND WEIGHT LOSS ACCORDING TO AYURVEDA

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Article Received on 24/08/2018

Article Revised on 13/09/2018

Article Accepted on 04/10/2018

ABSTRACT

Yoga is a traditional and cultural science of India. Ayurveda includes Yoga as an ideal lifestyle for maintenance of health (Swastha Vritta). Yoga is a part of ancient Indian lifestyle and obesity is a lifestyle disorder spreading all over the world due to modern lifestyle therefore Yoga can successfully bring the weight loss. Yoga is a mind body practice corresponding to Pranayama (breathing exercise), Asanas (postures) and meditation which is very useful in the management of obesity with the benefits of weight loss. Yogasanas are psychophysiological in nature. Physiologically Yogasanas having static and dynamic effect on body. The mechanism of Yogasanas includes central nervous system which uses its lower centers of integration for the maintenance of posture and equilibrium. According to Ayurveda obesity known as Sthoulya. The term Medoroga is generally considered to mean obesity. Medoroga is a disorder of Meda Dhatu correlates with the over nourishment of Adipose tissue and disturbed fat metabolism which makes undesirable constitution. Yoga is helpful in the management of all aspects of obesity i.e. physical, emotional and mental conditions of person. Regular practice of Yoga, Suryanamaskara, Asanas (Yoga poses), Pranayama, cleansing process makes the difference and reduces the weight magically. Yogasanas or Yoga poses like Kapala Bhati Pranayama, Paschimottanasana, Veerabhadrasana, Dandasana, Poorvottanasana, Naukasana, Shalabhasana, Halasana, etc. brings permanent changes in weight loss by nature but one can need to practice it regularly with the devotion.

KEYWORDS: Yoga, obesity, weight loss, Yogasanas etc.

INTRODUCTION

The term 'Yoga' is derived from Sanskrit word Yuja which means 'to combine'.^[1] Yoga is a science of physical, mental and spiritual approach by which human being can achieve harmonious development of health of body mind complex. According to Patanjali, Yoga means 'Chitta Vritti Nirodha'.^[2] Yoga has the solution for a healthy life style. It is a complete package with wonderful cardio, dynamic workout, meditative posture and influence on one's behavior and life style. Regular practice of asana, pranayama and kriya lead to a holistic life style. Obesity could be due to some hormonal malfunction of the endocrine glands. There should be a proper balance between metabolic and hormonal function of the body. Yoga has all the therapeutic benefits to reduce obesity and prevent related diseases. Yogic kriyas (cleansing) are of great benefit for internal cleansing of the entire digestive system. Kriyas like Vamana Dhauti, Vastra Dhauti and Basti Kriya are a few techniques to cleanse the digestive tract and the rectum. Kriyas are specially intended to get rid of the bodies of

excess toxins and fat. Asana and Pranayama keep the whole body in a proper condition. Regular practice of asanas is useful to reduce fat in various parts of our bodies. This will help reduce weight and maintain the body in proper health in the long run. Various postures, especially forward bending, twisting and backward bending, help reduce fat near abdomen, hips and other areas. Regular practice of asana helps achieve ideal weight. Complimented by a proper diet, this is an important part of a healthy lifestyle to maintain a body weight in the long term.

PHYSIOLOGY OF YOGA

In most of the Asanas, the abdominal region is influenced. During maintenance phase of the Asanas the pressure in the abdominal cavity changes, which is reflected on the visceral organs like stomach, colon, urinary bladder etc. If normal breathing is continued while maintaining the Asanas there is an alternate positive and negative pressure on these visceral organs. This not only changes the blood circulation in that area but also

stimulates the visceroreceptors due to stretching of the walls of these organs. This helps to maintain optimum muscle tone. We know that emotions can also influence the muscle tone of these organs. But now muscle tone is improved so emotional stability also established. Now the emotions are unable to disturb the tone of visceral organs and hence digestive power is regained.

Through proper digestion, fat metabolism can take place properly so do not produce excessive fat and it also helps to reduced weight. P A Balaji et al stated that during yoga exercise there is rejuvenation/regeneration of cells of pancreas due to abdominal stretching, which may increase utilization and metabolism of glucose in peripheral tissues, liver, and adipose tissues through enzymatic process.^[3] Pranayama modified various inflatory and deflatory lung reflexes and interact with central neural element to bring new homeostasis in the body. Regular practice of Yoga causes muscular relaxation, development and improved blood supply to muscles might enhance insulin receptor expression on muscles causing increased glucose uptake by muscles and thus reducing blood sugar.

PHYSIOLOGY OF WEIGHT GAIN

First we have to consider the causes of obesity or weight gain from the physiology point of view. Ayurveda considers body is made up of Tridosha, Saptadhatu and Trimala.^[4] When all these are at their optimum level each of them contributes towards the health of the body.^[5] But when there is vikriti in Dosha, Dhatu, Mala Pramanatah or Gunatah then it surely affects body and mind. Obesity or Sthoulya is caused due to Pramanatah Vriddhi of Meda dhatu. The term “Medoroga” generally considered to mean or denote Sthoulya (commonly known as obesity) but there are many other diseases which caused due to vitiation of Medovaha Srotas. Meda Dhatu and its Karmas (Functions)^[6] - Meda Dhatu gives oilyness,

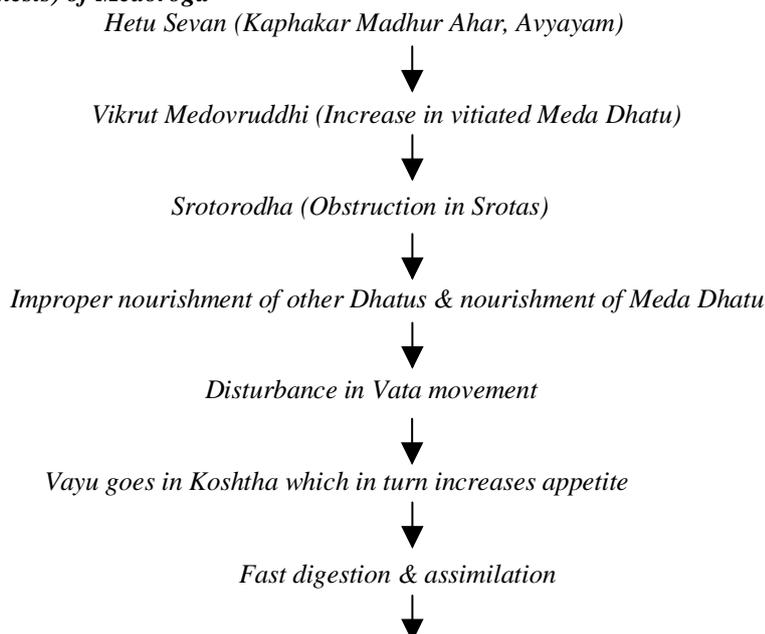
softness and lubrication to body parts. It helps in proper sweating due to which temperature of body remains in controlled. It also provides nourishment to Asthi Dhatu for proper functioning. It also provides strength to the body. Proper functioning of Meda Dhatu is very necessary for lubrication & smooth frictionless operation of all activities of bones & muscles in the body.

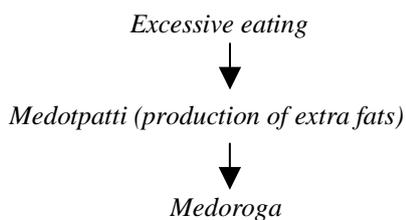
Symptoms of Meda Vruddhi^[7] - Due to Vikrut Medo-Vruddhi there is excessive slimy skin, difficulty in breathing with less exertion, bulging of abdomen, breasts and hip becomes pendulous, foul odour in body. Medoroga or obesity is not mentioned as a separate entity but in Charak Samhita Sootrasthana Chapter 21 it is mentioned under Nindita Purusha.^[8]

Medovaha Srotas Moolasthana (Origin)^[9]- Vrukka (kidney), Vapavahana (omentum) Causes of vitiation of Medovaha Srotas^[10] - Lack of exercise, Sleeping during day time, Working in sedentary lifestyle, Excessive intake of fatty heavy, cold, sweet and oily food, Excessive intake of alcohol, Intake of Kaphakar Dravyas, Beeja Dosha. Symptoms of vitiation of Medovaha Srotas - Accumulation of Mala on places like teeth etc. Burning sensation in palms & soles excessive perspiration, Stickyness of skin, Obesity or Emaciation. Diseases of Medovaha Srotas vitiation - Atisthoulya (Obesity), Atisweda (Excessive perspiration), Prameha, Madhumeha and Medogranthi.

Causes of Medoroga^[11] – According to Madhavanidana, Apathyakara Ahara-Vihara is the main cause of Sthoulya (obesity). Madhur Ahara, Kaphakara Ahara means excessive intake of heavy sweet, cold & unctuous food leads to Medoroga. Apathyakara Vihara which includes Avyayama (lack of exercise), Divaswpna (sleeping in day time).

Samprapti (Pathogenesis) of Medoroga





What is obesity ?

According to WHO, the worldwide prevalence of obesity nearly tripled since 1975. In 2016, 39 % of adults aged 18 years and over (40 % women and 39 % men) were overweight and 13 % were obese. It counts 1.9 billion adults, age 18 years and over were overweight and of these over 650 million were obese.^[12] Being obese is different from being overweight when Body Mass Index (BMI) greater than or equal to 25 considered as overweight and BMI greater than or equal to 30 falls under the obese category.

OBESITY REASONS

- Excess consumption of fats, calories and sugar rich diet
- Consuming food all the time, which includes milk, butter, cheese, oily food, non- vegetarian food, tea, coffee, bakery products, rice etc.
- Not eating raw food, fruits, vegetables rich in fibers
- Obesity can be hereditary
- Digestive disorders may result in obesity
- Improper functioning of Endocrine gland system such as thyroid disorders
- Imbalance in emotional and mental activities
- Lack of exercise
- Consuming cold food from fridge all the time
- Obesity Symptoms
- Obesity increases weight, reduces physical movements, and also brings in slowness in emotional and mental activities. Food intake increases.
- Obesity can result in frustration. Depression is often associated with excess weight gain.
- Laziness increases, reducing overall efficiency.
- Sometimes obesity can create obstruction to breathing process.
- Obesity may result in heart problems, diabetes or blood pressure.

Obesity and Yoga

- Yoga works on all aspects of Obesity or excess weight (physical, emotional and mental).
- Regular practice of Yoga and controlled life style reduces obesity (weight is reduced).
- Yoga makes human being agile, efficient and slim.
- Yoga is suitable for people in any age group.
- Yoga helps achieve control over mind and behavior (one can easily control food habits and change life style to reduce the obesity.).
- Yoga has different effect on obesity, which is

permanent in nature than other techniques for obesity reduction. Weight loss is permanent but one needs to practice few important techniques regularly.

YOGA FOR WEIGHT LOSS

These are some most useful Yoga techniques, Yoga postures or breathing exercises which helps in weight loss.

Kapala Bhati Pranayama^[13]- This breathing technique increases rate of metabolism and thus helps in reducing weight. It also improves digestive tract functioning, absorption and assimilation of nutrients.



Fig. 1: Kapala Bhati Pranayama

Paschimottanasana^[14]- This Asana helps to tone the abdominal and pelvic organs. It also improves digestion and is highly effective in reducing obesity.



Fig. 2: Paschimottanasana

Veerabhadrasana- This pose improves balance in the body and builds up stamina. The abdominal organs are also stimulated by practicing this pose.



Fig. 3: Veerabhadrasana

Dandasana - This Asana is an excellent abdomen toner so helps in weight loss. It is good for upper part of body as it strengthens the wrists and arms.



Fig. 4: Dandasana

Poorvottanasana – This Asana stretches the intestine and abdominal organs. It also helps in toning the abdomen.



Fig. 5: Poorvottanasana

Naukasana – This Asana gives strength to the abdominal muscles, improves digestion and stimulates the intestine.



Fig. 6: Naukasana

Shalabhasana – This Asana massages and tones the abdominal organs. It also improves digestion and flexibility of body.



Fig. 7: Shalabhasana

Halasana^[15] – This Asana strengthens and stimulates the abdominal muscles. It also alleviates stress and fatigue.



Fig. 8: Halasana

DISCUSSION

Yoga has an important role to play in the treatment of Obesity. Yoga techniques affect body, internal organs, endocrine glands, brain, mind and other factors concerning Body - Mind complex. Various Yoga techniques can be practiced effectively to reduce the weight and achieve normal healthy condition of Body and Mind. Yoga positions or postures (Asanas) are especially useful to reduce the fats in various parts, especially forward bending, twisting and backward bending asanas help reduce the fats near abdomen, hips and other areas. Sun salutations (Suryanamaskara) are very beneficial in obesity management. Regular practice of sun salutation with breathing gives good exercise to the lungs.

The Pranayama can be classified in 2 types in terms of physiology, Hypo ventilation or vitalizing Pranayama and Hyper ventilation or relaxing pranayama. Kapalbhathi, Bhasrika and Fast breathing can be classified under Hyper ventilation (increases Oxygen and reduces carbon dioxide) and Deep breathing, Bhramari, Shitali, Sitkari can be classified as Hypo ventilation (oxygen level remains mostly same but the speed of respiration is lower, heart rate lower). Kapalbhathi, Bhasrika & fast breathing can be practiced by people suffering from obesity with good effects.

Shankha Prakshalana or Master cleansing technique

Drinking 2 glasses of water, performing special asanas, again drinking the water, followed by asanas to evacuate the bowels is the process of cleansing of entire GI tract. The process is completed when one has completely cleansed the intestinal tract. In Agnisara fast movement of abdominal muscles in and out, is very good exercise to get rid of the accumulated fats in the abdominal region also it helps in streamlining Digestive system. Bandhas like Uddiyan Bandha, Mula bandha are also useful for weight loss.

CONCLUSION

Yoga as an ideal lifestyle for maintenance of health (Swastha Vritta). Medoroga or obesity is a lifestyle disorder so Yoga can successfully bring the weight loss. Regular practice of Yoga, Suryanamaskara, Asanas (Yoga poses), Pranayama, cleansing process makes the difference and reduces the weight by nature.

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