

Sleep Well: Exploring the Effectiveness of Physiotherapy for Sleep Apnea in the Obese"

Md Salman Shamsh^{1*}

¹Final Year BPT Student, Department of Physiotherapy, Galgotias University
Gautam Budh Nagar, Noida, UP, India

***Corresponding Author:** Md Salman Shamsh, Final Year BPT Student
Dept of Physiotherapy, Galgotias University, Gautam Budh Nagar, Noida, UP,
India.

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Figure a

Obesity statistics from 2021 reveal that over 1.9 billion adults are overweight, with 650 million classified as obese. Additionally, childhood obesity affects more than 340 million children and adolescents globally.

Physiotherapy's efficacy lies in its holistic approach, combining exercise plans with lifestyle modifications and behavioural support. This comprehensive strategy aids in sustainable weight loss and encourages individuals to adopt healthier habits. As obesity's prevalence persists, physiotherapy's impact remains a crucial component of the broad effort to overcome this complex and persistent health challenge, ultimately leading to a better quality of life and reducing associated health risks.

Physiotherapy plays a significant role in addressing obesity, offering a multifaceted approach to its management. By incorporating tailored exercise regimens, physiotherapists help individuals enhance their physical fitness, promote weight loss, and improve overall well-being. These interventions not only contribute to shredding excess weight but also mitigate obesity-related complications, such as musculoskeletal issues and cardiovascular risks.

The efficacy challenges in coping with sleep apnea among overweight people stem from the problematic interaction between weight problems-associated factors and the sleep disorder itself. Obesity can result in anatomical adjustments like elevated neck

circumference and fat deposits across the airway, contributing to the airway crumbling at some point in sleep. Reduced muscle tone and continual irritation, in addition, exacerbate the problem. While weight reduction is individually recommended, it could be tough for overweight individuals to achieve and hold. Additionally, continuous advantageous airway strain (CPAP) therapy, a well-known remedy, might be less powerful due to mask soreness or inadequate match. Surgical interventions are an option, however, the dangers associated with surgical operation in obese sufferers can limit their viability. Tailoring remedies to the particular desires of obese people, thinking about factors that include body position in the course of sleep, exploring opportunity treatments like bi-level high-quality airway strain), and addressing behavioural boundaries to weight reduction can collectively enhance the efficacy of managing sleep APNEA in this populace. Close collaboration between healthcare companies and sufferers is an important control-effective technique that improves both sleep high-quality and general fitness.

Traditional control techniques for sleep apnea contain a range of strategies aimed toward enhancing breathing and sleep first rate. Lifestyle adjustments, together with weight reduction via weight-reduction plans and workouts, are regularly advocated, as extra weight can make contributions to airway obstruction. Continuous nice airway stress (CPAP) remedy is a widely used approach where a gadget promises a consistent movement of air thru a mask to maintain the airway open in the course of sleep. Oral appliances that reposition the movement jaw and tongue can also assist save your airway from disintegrating. In some instances, positional therapy encourages napping in specific positions to reduce obstructions. Surgical alternatives, along with uvula palate pharynx plasty (UPPP) or genioglossus development (GA), are considered for intense cases while other tactics show useless. Personalized treatment plans, crafted in collaboration with healthcare specialists, provide the satisfactory threat of effectively dealing with sleep apnea and assuaging its capacity fitness consequences.



Figure b

Physiotherapy can play a sizeable position in addressing sleep apnea, especially in overweight individuals. A tailor-made physiotherapy routine can goal each of the underlying causes of sleep apnea and its effects. Exercise programs designed to sell weight loss and enhance cardiovascular fitness can assist lessen extra fat deposits across the airway, easing airflow and probably decreasing the severity of apnea episodes. Strengthening sports focused on the muscular tissues of the top airway can decorate their tone and decrease the chance of disintegrating in the course of sleep. Additionally, physiotherapists can manual patients in adopting superior snoozing positions that reduce airway obstruction. Techniques that include deep respiration sports and myofascial launch might also be useful resources in relaxation and alleviating muscle tension that contributes to sleep apnea. Collaborating with healthcare experts allows obese people to gain from a complete approach that combines physiotherapy with other interventions, including nutritional changes and non-stop effective airway pressure (CPAP) remedy, ultimately enhancing the management of sleep apnea and improving typical properly-being.

Recent studies have targeted exercise applications for sufferers with OSA because they constitute a low-cost, easy-to-use treatment modality and were shown to be effective in mitigating several harmful effects of OSA, along with cardiovascular problems, glucose intolerance, and fatigue.

The mechanisms whereby physical exercising attenuates OSA have not begun to be well defined. It changed into long believed that the useful results of physical workouts on patients with OSA have been related to a reduction in body weight; however, experimental and clinical studies have shown that the benefits of exercise are impartial to weight reduction. Several hypotheses were proposed to explain the useful consequences of bodily workouts on sufferers with OSA.

Increased higher airway dilator muscle tone Maintenance of airway patency requires the coordinated interest of upper airway and thoracic respiratory muscle mass. Inspiratory muscle contraction results in a sub-atmospheric stress gradient that allows the air to go into the respiration machine and predisposes it to pharyngeal collapse. This trend closer to pharyngeal collapse is compensated by using the activation and contraction of several top airway dilator muscular tissues, consisting of the sternohyoid and omohyoid muscle tissues, and pharyngeal lumen regulators, including the genioglossus and digastric muscle tissues.

The consequences of exercise on the characteristics and hobbies of the aforementioned muscle groups stay uncertain. During physical activity, the breathing muscle tissues, especially the diaphragm, work at an expanded charge. This results in metabolic and structural diversifications that enhance fatigue resistance. On the idea of the know-how that exercise increases respiration muscle recruitment, it appears attainable that patient exercising may result in elevated upper airway muscle activation to increase upper airway diameter, reduce airway resistance, and oppose pharyngeal disintegration at some point of sleep.

Benefits of exercise in the treatment of OSA

In five recent studies, Iftikhar, *et al.* found significant reductions in AHI and daytime sleepiness, as well as increases in sleep activity and peak oxygen consumption (VO₂peak), in older patients with OSA. 2, authors found that OSA patients who exercised regularly had a 32% reduction in AHI (reduction of 6.27 events/h) and a 28% reduction in daytime sleepiness, as well as an increase of 5.8% of sleep. efficiency and an increase of 17.65% in VO₂peak, they did not find a significant decrease in BMI (VO₂peak = -1.37; 95% CI: -2.81 to 0.07; p = 0.06, I² = 76.92%). Another important point is that even if exercise does not have a significant impact on the severity of OSA, the indirect benefits of exercise include lower blood pressure, improved metabolic rate, and reduced risk of heart disease and stroke. arteries of the heart. More lately, Aiello, *et al.* 59 completed a meta-analysis of nine research and confirmed the findings of Iftikhar, *et al.* which have located a reduction inside the AHI and in daylight hours sleepiness after exercising as the only remedy for OSA.

There is a loss of research evaluating the position of exercising as the sole remedy for OSA. In addition, there are differences across studies concerning exercise protocols; however, aerobic workout (either in isolation or in a mixture with resistance exercising) has been used in all research.