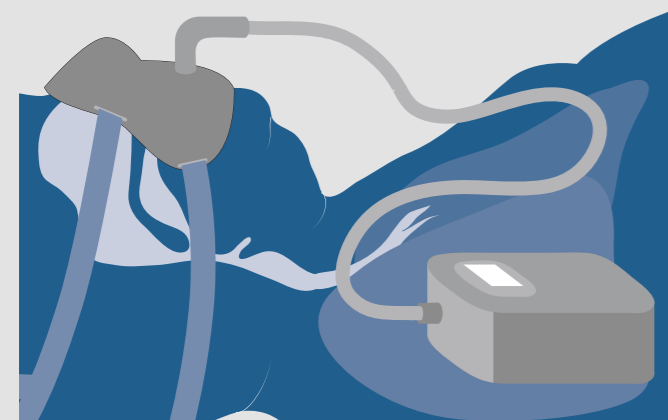


For the Primer, visit [doi:10.1038/nrdp.2015.15](https://doi.org/10.1038/nrdp.2015.15)

➔ **Obstructive sleep apnoea syndrome (OSAS) is a respiratory condition in which the airway collapses repeatedly during sleep, leading to intermittent hypoxia, increased respiratory effort and recurrent arousals. Excessive daytime sleepiness and cardiovascular and metabolic co-morbidities are the main consequences.**

Rx MANAGEMENT

Management of OSAS should be tailored to the severity of the condition. Severe OSAS (>30 apnoeic events per hour) always requires treatment. Continuous positive airway pressure (CPAP) is the first-line option to prevent collapse of the pharynx. Upper airway surgery can be considered when the patient has craniofacial abnormalities. Mild to moderate OSAS should only be treated when the patient is symptomatic. If feasible from a dental point of view, oral devices that relocate the jaw (such as a mandibular advancement device) are preferred. Weight loss, either by conventional (caloric restriction, exercise) or medical (bariatric surgery, medication) means should always be encouraged. Although these treatments improve daytime sleepiness, adherence is an issue and whether they reverse the chronic co-morbidities remains to be determined.



🔍 DIAGNOSIS

! Sleep apnoea events without symptoms are not considered as OSAS except if ≥ 15 events per hour are recorded



OSAS is characterized by ≥ 5 apnoeic-hypoaepnoeic events per hour of sleep accompanied by clinical symptoms such as excessive daytime sleepiness, fatigue, waking up while gasping, snoring and others

OSAS is diagnosed based on medical history (including reports from the partner about snoring and gasping), clinical examination and sleep recordings (polysomnography or respiratory polygraphy)

🚲 OUTLOOK

The exact mechanisms underlying OSAS remain to be elucidated — in particular, the role of neuropathy, changes in fibre composition of the muscle, fluid shift from the legs to the neck and the

contribution of high leptin levels. Also, compensatory mechanisms associated with intermittent hypoxia might increase angiogenesis and thereby exert protective effects. Finally, drugs

(including intranasal glucocorticoids, cholinesterase inhibitors and potassium channel blockers) or treatments (hypoglossal nerve stimulation) to prevent upper airway collapse are being developed or tested.

⚙️ PATHOPHYSIOLOGY

The cause of the pharyngeal collapse is multifactorial and includes an inadequate neuromuscular response and a reduction in the upper airway dimensions owing to obesity and/or anatomical changes. OSAS is associated with cardiovascular (hypertension, atrial fibrillation, cardiac events), vascular (atherosclerosis, endothelial dysfunction) and metabolic (diabetes mellitus) co-morbidities in up to 50% of patients. These are directly caused by the obstructive apnoeic events that activate several stressors. For example, increased intrathoracic pressure stretches the internal organs, and intermittent hypoxia results in oxidative stress, activation of the sympathetic nervous system and inflammation.

! OSAS is the most prevalent chronic respiratory disorder, affects 5–15% of the population and is especially prevalent in men and postmenopausal women

Obesity, in particular fat accumulation in the neck, is a major risk factor

⚖️ QUALITY OF LIFE

Excessive daytime sleepiness, caused by unnoticed microarousals that lead to sleep fragmentation, is one of the major consequences affecting quality of life in patients with OSAS. Importantly, sleepiness and accompanying attention deficits increase the risk of traffic accidents. Treatment improves sleepiness and, accordingly, quality of life. However, OSAS might also be completely asymptomatic, especially in patients with mild disease.

