Obstructive Sleep Apnea (OSA) is a complex syndrome occurring during sleep as a result of repetitive occlusion of the upper airway. This results in transient but repetitive hypoxemia and sub-clinical arousals with sleep fragmentation and consequently excessive daytime sleepiness. Risk factors for sleep apnea include male gender, aging, obesity, congenital diseases (such as Down's syndrome), endocrine problems (such as hypothyroidism), big tonsils and adenoids (especially in children), and craniofacial factors (such as receding chin). Sleep apnea can adversely affect the daily life of the patient. Sufferers may experience headaches, tiredness, loss of recent memory, difficulty in concentration, reduced libido, more irritable, anxious and poor judgment. Studies showed that of drivers with sleep apnea had much higher chance of car accident compared to those without. Besides these, obstructive sleep apnea has been confirmed to be a risk factor for development of hypertension, probably increased the chance of ischemic heart disease, cerebrovascular diseases and diabetes mellitus as well.

Lifestyle modification can help to improve sleep apnea. For instance, weight control for overweight patients, lie lateral for those who have sleep apnea while lying supine, and avoiding alcohol and sleeping pills before sleep. The standard treatment for obstructive sleep apnea is to use continuous positive airway pressure (CPAP) machine which delivers pressurized air via the nasal mask to keep the airway patent. For patients who cannot tolerate CPAP, and if their OSA are not severe, oral appliance (a plastic put in the mouth) can be an alternative. Surgical treatments are useful for children with enlarged tonsils and adenoids. More invasive surgical procedures such as mandibular-maxillary advancement have been shown to e effective as well.