

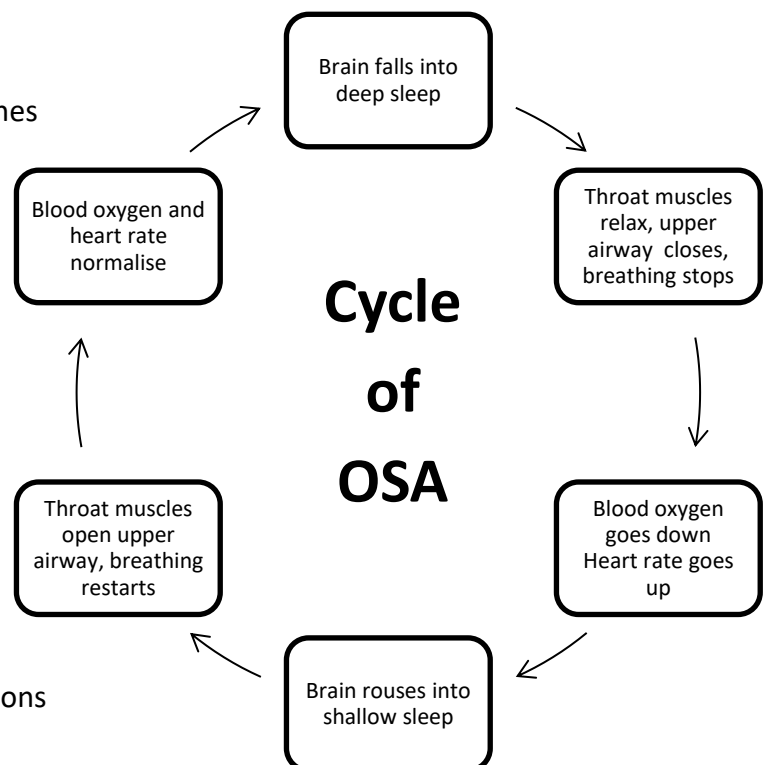
Untreated Obstructive Sleep Apnoea (OSA)

About Sleep, OSA, and CPAP

The body needs sleep to survive. We spend roughly a third of our lives asleep, and ideally need about two hours a day of deep restful sleep and another four or so hours of lighter sleep to keep the brain and body working at their best.

What happens during sleep?

- Digestion and metabolism of food
- Regulation of metabolism & appetite hormones
- Rest & relaxation for muscles & heart
- Decrease in blood pressure
- Decrease in cortisol, the stress hormone
- Processing of learning & memories
- Creation of neural connections in the brain
- Processing of cellular waste, especially in the brain
- Linking of frontal cortex with amygdala – applying reason to emotions
- Boosting of positive neurochemicals which improve mood, drive, and optimism
- Repair of body and healing of wounds
- Creation of proteins for body repair and immune strengthening
- Building of immune responses to fight infections
- Reduction of inflammation
- Replenishing of skin & internal membranes



OSA is a condition where breathing is blocked and restarted in a cycle, up to hundreds of times per hour during sleep. It is commonly associated with loud snoring. Every time the cycle occurs, deep restful sleep is interrupted, and the benefits of sleep are reduced.

CPAP therapy holds the airway open with extra air provided by a machine via a hose and facemask. When using CPAP during sleep, the throat muscles can relax entirely, but the airway will be held open so you can breathe normally. It only works when it's worn (like a seatbelt) so it's a treatment, not a cure, and if you sleep without CPAP, you'll have OSA cycles just the same as before you started treatment.

Short Term Impact of Untreated OSA

In the short term, untreated OSA mostly creates symptoms related to sleep deprivation.

While these symptoms may seem trivial at first, over weeks and months they can have a significant impact on your wellbeing, particularly your performance at work, your relationships with family, friends, and colleagues, and your safety when driving or doing tasks which need concentration and patience.

Some people get so tired and unable to function that they lose their jobs and driving licences.

Untreated OSA

- ⇒ Waking up feeling as if you haven't slept at all
- ⇒ Struggling to get up and get going in the morning
- ⇒ Feeling sleepy, sluggish, or 'foggy' all day
- ⇒ Difficulty in concentrating on tasks
- ⇒ Having slower reaction times and taking longer to respond to urgent issues
- ⇒ Struggling to remember things & learning more slowly
- ⇒ Being less patient, more irritable, or more emotional
- ⇒ Feeling the need to take frequent daytime naps
- ⇒ Dozing off unintentionally, even when actively trying not to

Long Term Impact of Untreated OSA

In the long-term, poor-quality sleep impacts virtually every system of the body. When severe OSA is left untreated for decades, it can contribute to very serious medical issues in the long term.

- ⇒ Pauses in breathing during sleep
 - ⇒ Oxygen dips and heart rate rises during sleep
 - ⇒ Heart doesn't get time to beat slowly and rest
 - ⇒ Production of more red blood cells
 - ⇒ Increased blood pressure
 - ⇒ Thickening of the blood
 - ⇒ **Increased risk of stroke and blood clots**
 - ⇒ **Increased risk of heart disease, heart attack, and heart failure**
- ⇒ Interruption of deep restful sleep
 - ⇒ Disturbance of digestion, metabolism, and metabolic hormones
 - ⇒ Increased hunger and craving of high fat and high carb foods
 - ⇒ Weight gain and decrease in drive to exercise
 - ⇒ Decreased response to insulin
 - ⇒ **Development of Type 2 Diabetes**
 - ⇒ **Poor control of blood sugar and weight**
 - ⇒ Weaker connection between emotional and rational centres of the brain
 - ⇒ Stronger emotions, especially negative emotions
 - ⇒ Decrease in emotional processing
 - ⇒ **Increased likelihood of depression or other mental health issues**
 - ⇒ Decreased creation of neural connections
 - ⇒ Decreased processing of cellular waste, particularly in the brain
 - ⇒ **Increase in risk of memory issues, dementia, and Alzheimer's.**
 - ⇒ Interruption of protein production for healing and repair, and immune responses
 - ⇒ Build-up of unhealed wear-and-tear micro-injuries
 - ⇒ **Slower recovery from injury and wounds, including surgical wounds**
 - ⇒ Reduced immune response to pathogens
 - ⇒ **Greater risk of getting ill from infections**
 - ⇒ **Slower recovery from infections**

These things are not definitively caused by untreated OSA, but untreated OSA will contribute to the many factors that increase the risk of developing some or more of these issues in the long term.