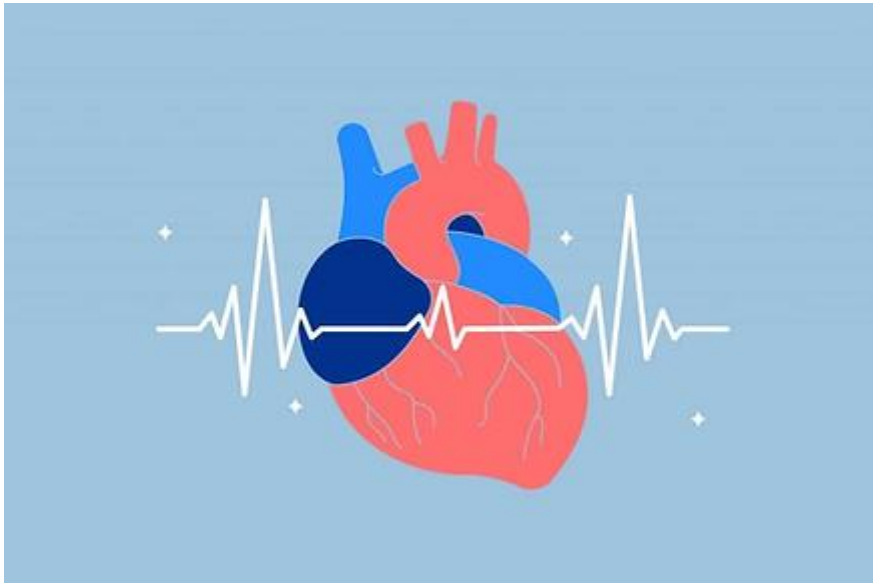


4. Sleep apnoea and heart rate variability and exercise

This is the fourth blog in a series of 5 that explores the concept of personalised sleep medicine.



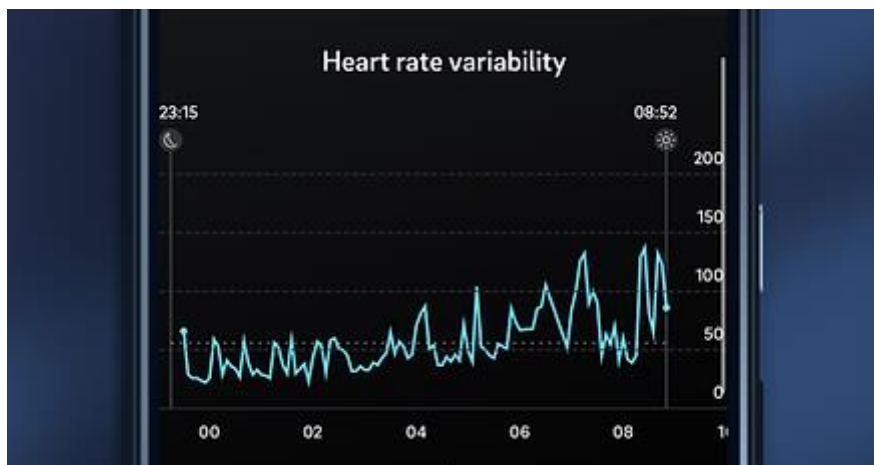
The Hidden Dangers of Sleep Apnoea

If you frequently feel excessively tired, sleepy or exhausted during the day regardless of how many hours of sleep you get, you might be one of the millions of people globally experiencing sleep apnea. This common condition causes repeated breathing pause throughout the night due to narrowing of the upper airway during sleep, depriving your body of essential oxygen (1).

While excessive daytime sleepiness is the most recognised symptom, sleep apnoea is linked to more serious health issues such as high blood pressure, heart disease, stroke, diabetes and metabolic disorders (2).



Sleep Apnoea's Impact on Heart Rate Variability



Heart rate variability (HRV) refers to the variation in time between each heartbeat. A high HRV is considered healthy, enabling your heart to adapt to various situations and stressors. Conversely, low HRV is associated with a higher risk of cardiovascular disease and other chronic conditions.

Studies indicate that sleep apnoea can significantly reduce HRV. The repeated dips in oxygen levels during sleep and subsequent nocturnal arousals from sleep place extra stress on the body, causing the heart to work harder. Over time, this can lead to inflammation, high blood pressure, and an elevated resting heart rate— all risk factors for heart disease (3-4).

How Can Exercise Help

While CPAP therapy is the primary recommended treatment for sleep apnoea, lifestyle changes such as regular exercise can also offer significant benefits. Here's how exercise may improve both sleep apnoea and HRV:

Weight Loss

Carrying excess weight is a major risk factor for sleep apnoea. Combining exercise with a healthy diet can help achieve and maintain a healthy weight, reducing the fatty tissue around the upper airway that can the breathing pauses seen in people with Sleep Apnoea (5-6). Connected devices that can assist with activity tracking, heart rate variability and weighing scales are available and can be recommended to take a more personalised approach to weight loss in people with OSA and overweight.

Enhanced Cardiovascular Health



Aerobic exercise strengthens the heart muscle, allowing it to pump blood more efficiently with less effort. This can help lower blood pressure levels and improve HRV by reducing the strain on the heart (7).

Improved Sleep Quality

Exercise can promote better sleep by reducing stress, anxiety, and symptoms of insomnia. Higher quality sleep means fewer disruptions from sleep apnoea and more consistent oxygen levels throughout the night (7).

Increased Oxygen Levels

During exercise, your body works harder to supply oxygen to working muscles. This increased oxygen demand can improve respiratory fitness over time, making it easier to breathe while sleeping.

The bottom line? Don't ignore potential sleep apnoea symptoms like snoring, witnessed breathing pauses, gasping for air, nighttime choking episodes, morning headaches, and excessive daytime sleepiness. Get evaluated by a doctor, who may recommend a sleep study. Consider incorporating regular exercise into your routine — it might save your heart in more ways than one!

In the last blog we will show you technology that can help you with considering a more personalised approach to the co-management of people with Sleep apnoea.

1. [Hidden Dangers of Severe Obstructive Sleep Apnea - PMC \(nih.gov\)](#)
2. [Bidirectional relationships of comorbidity with obstructive sleep apnoea | European Respiratory Society \(ersjournals.com\)](#)
3. [Nocturnal heart rate variability in obstructive sleep apnoea: a cross-sectional analysis of the Sleep Heart Health Study - Bradicich - Journal of Thoracic Disease \(amegroups.org\)](#)
4. [Frontiers | The Different Facets of Heart Rate Variability in Obstructive Sleep Apnea \(frontiersin.org\)](#)
5. [Weight Loss Is Integral to Obstructive Sleep Apnea Management. Ten-Year Follow-up in Sleep AHEAD - PMC \(nih.gov\)](#)
6. [Effect of an Interdisciplinary Weight Loss and Lifestyle Intervention on Obstructive Sleep Apnea Severity: The INTERAPNEA Randomized Clinical Trial | Pulmonary Medicine | JAMA Network Open | JAMA Network](#)
7. [Effects of Exercise to Improve Cardiovascular Health - PMC \(nih.gov\)](#)