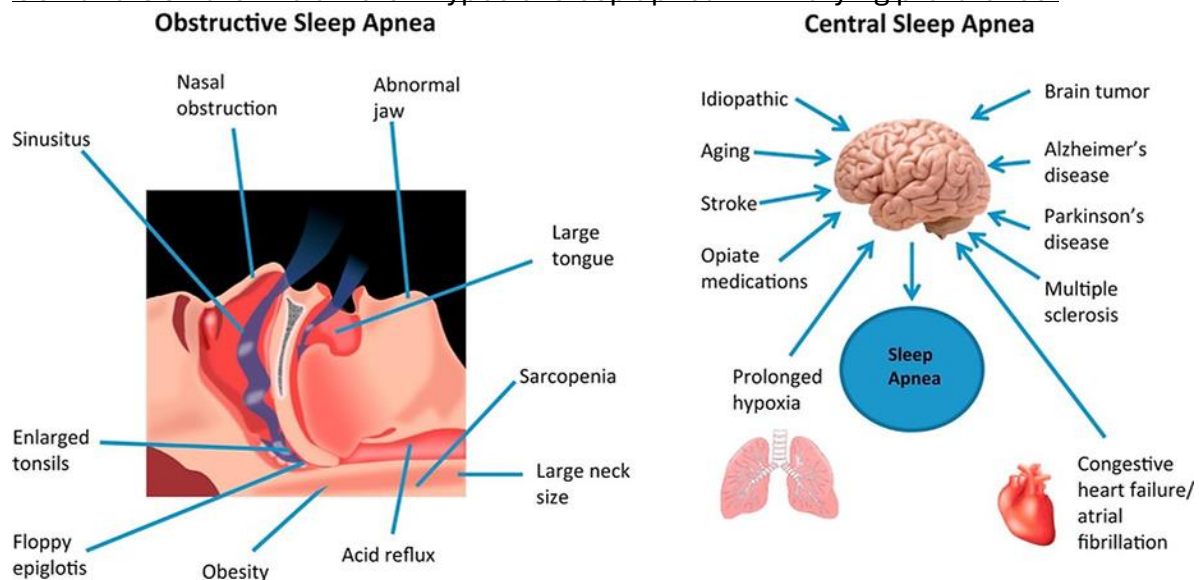


2. What is the prevalence of Obstructive Sleep Apnoea verses Central Sleep Apnoea and the role of Software Monitoring Solutions

In blog 1 of these series, we explored why it's important for Sleep Medicine Clinicians to differentiate between Obstructive Sleep Apnoea (OSA) and Central Sleep apnoeas (CSA) and Hypopnoeas? In this 2nd blog we will explore recent understanding of OSA and CSA reported prevalence, software management methods of detection of these events and tailoring treatment parameters based on remote monitoring data.

CSA and OSA are two different types of sleep apnea with varying prevalence:



1. OSA is thought to affect up to 1 billion people globally and is a frequent condition marked by recurrent instances of partial or total blockage of the upper airway during sleep, resulting in diminished or halted airflow. The estimated prevalence of OSA in the general population ranges from approximately 9% to 38%, with variations influenced by factors such as age, sex, and obesity 1-2.

2. CSA is less common compared to OSA. It occurs when the brain fails to send the appropriate signals to the muscles that control breathing. The prevalence is lower, and is estimated to affect 5-10% of the general population, but it is more common in individuals with certain conditions such as heart failure or those using certain medications 3.

The prevalence of CSA can be higher in certain populations.

Central sleep apnea (CSA) is when there is a reduction or cessation in breathing during sleep due to the brain failing to signal the body to breathe. Here's an overview of the different forms:

1. CSA with Cheyne–Stokes Breathing (CSB): Often linked with heart failure, this type involves a pattern of breathing where periods of deep breaths alternate with shallow or no breaths. This fluctuation is caused by delayed respiratory system feedback, occurring frequently in individuals with heart problems.

2. CSA due to a Medical Disorder without CSB: This form results from other medical conditions that don't show the Cheyne-Stokes pattern. Conditions such as neurological disorders, including brainstem lesions or strokes, can affect the brain's ability to manage breathing during sleep.

3. CSA due to High-Altitude Periodic Breathing: At high altitudes, lower oxygen availability can lead to periodic breathing changes. This results in cycles of over breathing followed by pauses in breathing due to altered brain control.

4. CSA due to a Medication or Substance: Certain drugs, particularly those impacting the central nervous system like opioids, can suppress the drive to breathe. This disruption in normal breathing regulation because of medication effects can lead to CSA.

5. Treatment-Emergent CSA (TE-CSA): This arises when someone treated for obstructive sleep apnea develops central sleep apnea during their therapy, typically with positive airway pressure (PAP). Initially, obstructive events occur, but central apneas may develop as these are treated.

These distinct but often overlapping phenotypes may require diagnostic strategies and treatment plans based on their specific characteristics and underlying causes 3-4.

Symptoms of Central Sleep Apnea

- Difficulty concentrating
- Frequent awakenings during the night
- Shortness of breath upon waking
- Insomnia (difficulty staying asleep)

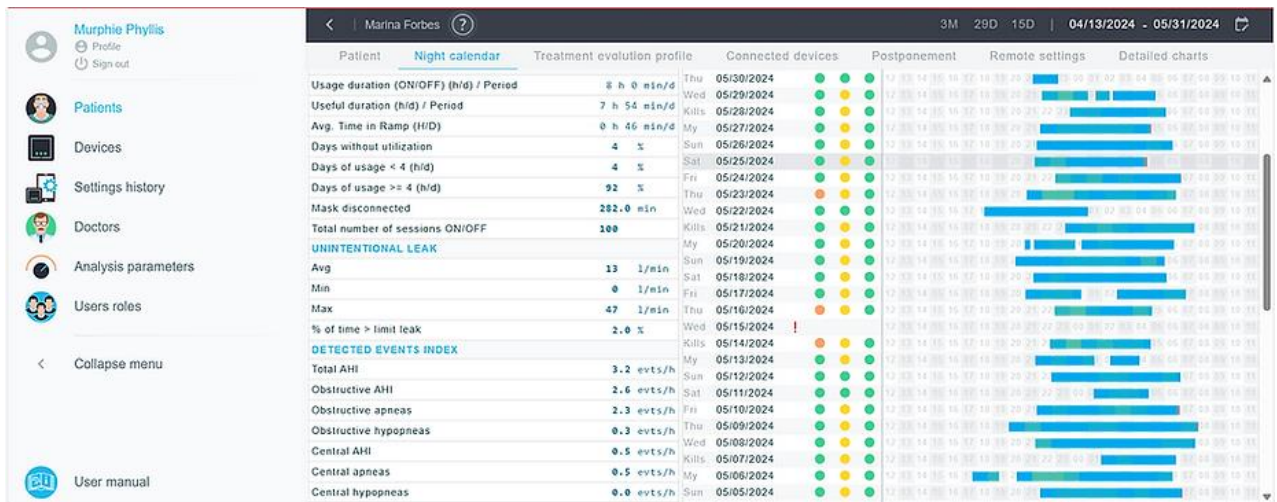
- Excessive daytime sleepiness
- Mood changes
- Morning headaches

Detection of CSA is challenging due to several factors:

1. **Symptom Overlap:** CSA shares symptoms with obstructive sleep apnea (OSA), such as daytime sleepiness and snoring, leading to potential misdiagnosis.
2. **Intermittent Nature:** CSA can occur sporadically during sleep, making it difficult to capture in a single sleep study.
3. **Complex Diagnosis:** Diagnosis requires overnight polysomnography (PSG), which is costly with long waiting times and logistically challenging. Home tests typically lack sufficient monitoring for CSA.
4. **Clinical Awareness :** Healthcare providers may be less familiar with CSA, leading to underdiagnosis or misdiagnosis.
5. **Coexisting Conditions:** CSA often occurs with other health issues, complicating evaluation and understanding the underlying cause.
6. **Variation in Responses:** Different patients may respond variably to treatment, necessitating trial-and-error approaches.
7. **Limited Access to Specialists:** Availability of sleep specialists can be restricted, delaying diagnosis and treatment.

The diagnosis of CSA requires careful evaluation, highlighting the need for collaboration between sleep specialists and the wider multi-disciplinary team to improve patient outcomes 3.

Role of Management Software in Sleep Apnea - Sefam Connect V 2.9



Management software plays a pivotal role in the ongoing treatment and monitoring of treatment efficacy by equipping Sleep medicine clinicians and their patients with innovative software and apps to have oversight of therapy and optimise treatment plans.

With features such as real-time data collection from CPAP/APAP devices these software solutions enable precise tracking of sleep patterns, apnoea events, mask leakage and therapy adherence. This facilitates the early detection of treatment issues, enhances patient compliance through timely reminders and alerts, and provides comprehensive data analysis for clinicians to tailor treatment strategies. Telemonitoring software helps improve patient therapy adherence, is cost effective and supports more effective and personalised care for people with sleep apnoea 5-6. reduce words here.

Differentiating between OSA and CSA is vital for accurate diagnosis and effective management. While OSA is more prevalent, CSA presents various phenotypes that complicate assessment.

Advancements in management software are transforming how sleep apnea is monitored and treated. These tools enable real-time data tracking, enhance patient compliance, and allow for personalised treatment plans. By leveraging technology, we can significantly enhance the quality of life for those with these disorders.

In blog 3 of these series, we will share the findings of a large "Real World Study" about why failing to distinguish between central and obstructive hypopneas may lead to an underestimation of the severity of CSA which may misguide treatment choices.

1. [Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis - PubMed \(nih.gov\)](#)

2. [Prevalence of obstructive sleep apnea in the general population: A systematic review - PubMed \(nih.gov\)](#)
3. [Central sleep apnoea: not just one phenotype \(ersjournals.com\)](#)
4. [Rules for Scoring Respiratory Events in Sleep: Update of the 2007 AASM Manual for the Scoring of Sleep and Associated Events: Deliberations of the Sleep Apnea Definitions Task Force of the American Academy of Sleep Medicine: Journal of Clinical Sleep Medicine: Vol 08, No 05](#)
5. [Remote consulting with telemonitoring of continuous positive airway pressure usage data for the routine review of people with obstructive sleep apnoea hypopnoea syndrome: A systematic review - PubMed \(nih.gov\)](#)
6. [Virtual consultations for patients with obstructive sleep apnoea: a systematic review and meta-analysis | European Respiratory Society \(ersjournals.com\)](#)