The Importance of Good Sleep

Whilst we have been asked to write this article focussing on the Hope2Sleep Charity's speciality of Sleep Disordered Breathing, it's important to highlight how important good sleep is for everyone, and not just limited to the following reasons, as every organ and tissue requires good sleep to function correctly:-

- Whilst we sleep our bodies are busy restoring the function of muscles and other organs.
- Lack of good sleep affects mental health, making us more prone to anxiety and depression, as well as stress.
- Good restorative sleep leads to a healthy immune system.
- Lack of sleep causes weight gain as we reach for food for energy (very often the wrong type of food).
- Daytime tiredness causes clumsiness, cognitive problems and a risk of traffic accidents; it also impacts our social interactions with friends and family.
- Sleep deficiency leads to many chronic health problems and worsens existing ones.

Sleep Disordered Breathing with Previous Polio or Post-Polio Syndrome

It has been established in the world of respiratory and sleep medicine that there is a higher risk of Sleep Disordered Breathing in patients with previous polio or Post-Polio Syndrome (PPS).

Symptoms that are frequently attributed to the pre-existing conditions may actually be caused by another one. Naturally, in the previous polio or PPS population tiredness and fatigue can be a common symptom, but this may sometimes mask another co-existing cause, such as Obstructive Sleep Apnoea.

In a French [1]Research Study by Léotard et al (2020), 166 studies were identified relating to older polio survivors, and they used 41 of them in their review. 65% of patients with previous polio or PPS were identified as suffering from Sleep Apnoea, 20% with Hypoventilation (which may require non-invasive ventilation), and 63% with Restless Legs Syndrome (RLS, which is also known as PLMD - periodic limb movement disorder when asleep), and sometimes can be improved and/or cured with iron supplements.

Their conclusion states the ***"(…) follow-up of polio survivors should include systematic screening for sleep disorders because they are associated with adverse consequences. Sleep disorder evaluation and management should improve the long-term survival and quality of life of polio survivors."***

In 2021, a group from the Lane Fox Unit at Guy's & St Thomas NHS Foundation, presented a [2]study at the European Respiratory Society conference, and one of the medical advisors of our Hope2Sleep Charity, Professor Joerg Steier, was part of the study team. 356 patients with PPS were included in the analysis and 35.7% reported general fatigue. 40.1% reported sleep disruption and/or sleep disorders of any type, the most frequent being sleep-disordered breathing (27.2%) and 13.8% had Obstructive Sleep Apnoea.

Their conclusion states that ***"(…) patients with PPS commonly experience sleep disruption and sleep disorders. A holistic approach towards these patients should include screening for sleep-related conditions, as sufficient treatment of sleep-related problems may improve health-related quality of life."***

Could some of the symptoms of Previous Polio or PPS be an overlap of undiagnosed Sleep Apnoea?

The Hope2Sleep Charity specialises in raising awareness of and supporting patients with Sleep Apnoea, as well as giving support to patients on non-invasive ventilation (NIV) for all causes of sleep disordered breathing, for which many of these patients receive NIV therapy with previous polio or PPS and other previous polio or PPS patients we support are treated with CPAP for the co-existing condition of Obstructive Sleep Apnoea (OSA).

What is Sleep Disordered Breathing (SDB)?

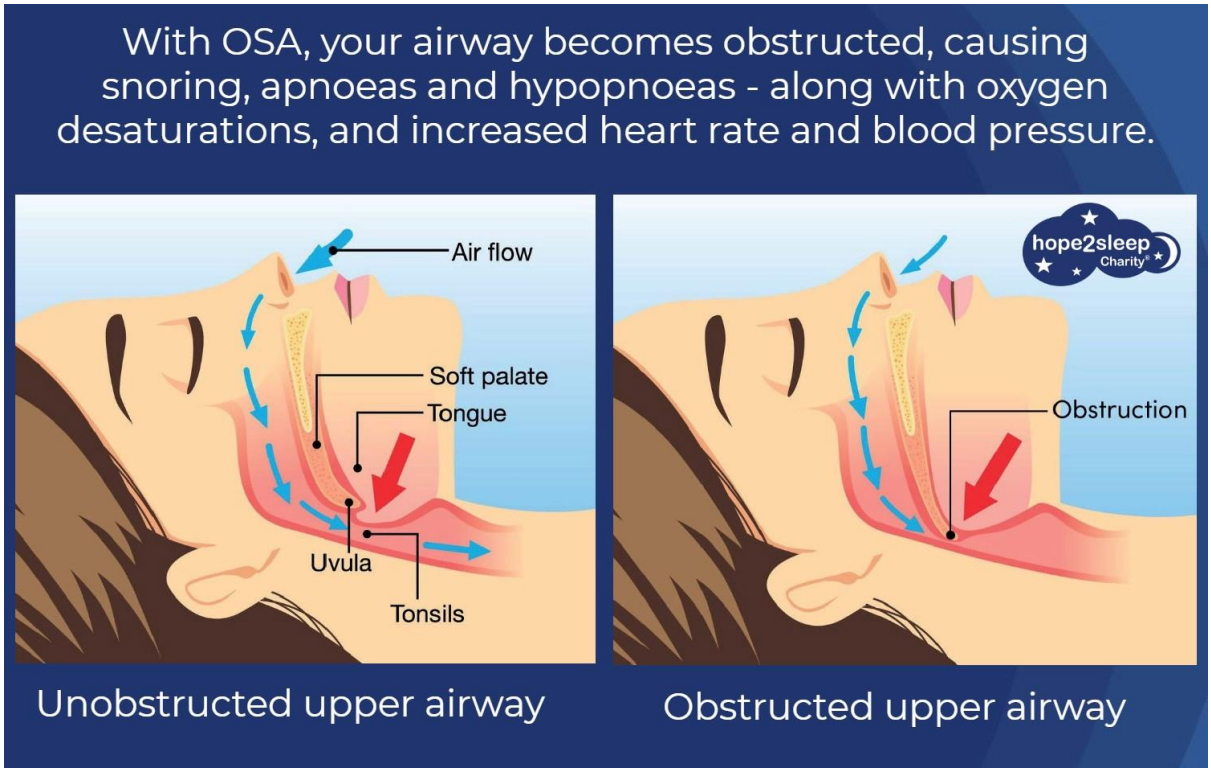
- Obstructive Sleep Apnoea (OSA / OSAS)*
- Central Sleep Apnoea (CSA)
- Mixed/Complex Sleep Apnoea
- Upper Airways Resistance Syndrome (UARS)
- Sleep-Related Hypoventilation
- Sleep-Related Hypoxia
- Snoring

*[(3)]the most common disorder is Obstructive Sleep Apnoea (OSA/OSAS) with the latest statistics estimating there are 8 million sufferers of OSA in the UK alone.

Hope2Sleep Charity, 85 Ings Road, HULL, HU8 0SD
support@hope2sleep.co.uk | 0300 102 9711 | 07862 000930

What is Sleep Apnoea?

Apnoea is Greek for 'without breath' and, therefore, Sleep Apnoea is a medical condition involving stopping breathing (apnoeas) or struggling to breathe (hypopnoeas) during sleep from 5-14 times an hour in mild cases, 15-30 in moderate and 30+ per hour when severe.



Many people are unaware they have Sleep Apnoea as it happens during sleep, although in the case of Obstructive Sleep Apnoea a big clue is regular snoring. In fact it is often a bed partner who may notice the signs of Sleep Apnoea and observe their partner pausing breathing during sleep. They may be alarmed by this and will often give them a nudge which interrupts the breathing events, and breathing will return to normal – only for the same thing to continue to happen through the night. Thankfully the brain sends messages to the body to start breathing again, when the bed partner is off-duty and asleep themselves.

The sufferer will often wake up feeling unrefreshed, but will not put this down to lack of sleep, as they are often under the false impression they have slept well. Some people do wake up gasping or choking though.

During apnoea/hypopnoea events, this most often causes oxygen levels to drop, carbon dioxide levels to raise and the heart becomes stressed - increasing both blood pressure and heart rate. This obviously causes untold constant damage to the body, which is why it is important to treat Sleep Apnoea and any warning signs should not be ignored!

Causes of Obstructive Sleep Apnoea (OSA)

- Nasal Blockages, due to deviated septum, narrow nose passages, congestion, allergies, swollen turbinates etc
- Large Uvula
- Large Neck Size
- Obesity
- Overuse of Alcohol
- Medications, such as tranquillisers, opioids and other sedating medication
- Large Tonsils and/or Adenoids
- Large Soft Palate
- Receding Jaw
- Large Tongue
- Smoking
- Hereditary factors due to craniofacial issues

Causes of Central Sleep Apnoea

Central Sleep Apnoea is where the brain fails to send messages to the muscles to breathe. Conditions which may be associated with Central Sleep Apnoea include, but are not limited to, the following:

- Congestive heart failure
- Hypothyroid Disease
- Kidney failure
- Damage to the brainstem caused by encephalitis, stroke, injury, or other factors
- Certain sedating medications, such as opioids like Morphine etc
- Cheyne-Stokes Breathing which is commonly associated with heart failure or stroke
- Neurological diseases, such as Parkinson's, Alzheimer's and Amyotrophic Lateral Sclerosis (ALS)
- Idiopathic - no known cause

Symptoms of Sleep Apnoea

- Daytime tiredness or chronic fatigue.
- Snoring.
- Sudden awakenings from sleep – often with a gasp or choking sound, and sometimes with heart racing (but not always as many sufferers are unaware of waking up).
- Night sweats, restless sleep and nightmares
- Insomnia
- Regular night-time bathroom trips.
- Lack of concentration, poor work or school performance and possibly memory problems or confusion.
- Depression, anxiety and panic attacks or irritability.
- Morning headaches and/or waking up groggy.
- Dry mouth and/or sore throat on waking.

- Decreased sex drive.
- Difficult to manage or worsening of diabetes, thyroid, high blood pressure, cardiac problems like atrial fibrillation (A-Fib), angina, arrhythmia.
- Body aches and pains.
- Reflux (GORD, gastro-oesophageal reflux disease)

Many other symptoms can be present due to sleep deprivation, and please note not everyone will have all the above symptoms.

Associated Conditions

Untreated Sleep Apnoea exacerbates and/or causes and is linked to:

- Heart Attacks and other Cardiovascular Disorders
- Strokes and TIA's
- High Blood Pressure (Hypertension)
- Type 2 Diabetes
- Driving Accidents
- Obesity
- Anxiety and Depression
- Hypothyroidism
- ADHD
- Brain Confusion and memory problems
- Fibromyalgia
- Chronic Fatigue Syndrome (CFS)
- Menopause
- Dementia, particularly Alzheimer's
- Floppy Eyelid Syndrome (FES)
- Glaucoma
- Asthma
- Sleep Paralysis
- Erectile Dysfunction Syndrome

- Parkinson's
- Heartburn and Gastrointestinal Reflux
- Vitamin D and/or B12 Deficiency
- Previous polio or Post-Polio Syndrome

Research is ongoing and more links to other medical conditions are likely.

Treatment for OSA

- **CPAP (Continuous Positive Airway Pressure)** where filtered air is delivered from a CPAP Machine via a hose/tube and into a nasal or full face mask, preventing the airway from collapsing. There are different forms of CPAP machines, such as APAP, BiPAP and VPAP etc., but your sleep consultant will advise the most appropriate treatment for you.

- **Dental Appliances and Oral Devices** can sometimes be a suitable option - especially in milder cases of OSA and it is important these are made by a dentist.

- **Surgery** is sometimes a consideration, although at the time of publishing it is rare to get a complete cure, but surgery can help. Children do have a good success rate for a cure from Sleep Apnoea by tonsillectomy and/or adenoidectomy, but the same high success rate is not evident in adults.

- **BiPAP/BiLevel or Adaptive Servo-Ventilation (ASV)** are usual treatments for Central Sleep Apnoea.

- **Lifestyle Changes** and especially for milder cases, such as changing sleeping position can help (supine sleeping is usually worse), refraining from alcohol within 3-4 hours of bedtime and nicotine, ensuring a large meal is not eaten close to bedtime. Weight loss can also improve the Sleep Apnoea, and in a small minority even cure it, although it must be said that losing weight whilst suffering from untreated Sleep Apnoea is more difficult, but once on good therapy it is usually easier to lose weight.

What to do if you suspect Sleep Apnoea may be causing some of your symptoms?

The study researchers from another [4]study 'Sleep in Post-Polio Syndrome' went on to say that due to their research ***"sleep studies should be performed on post-polio patients with excessive daytime sleepiness and respiratory complaints."***

If you suspect you may be suffering from Sleep Apnoea or any other sleep disordered breathing condition, please contact your GP to be referred to your local NHS sleep clinic.

If you meet resistance and need any support, or even wish to book our own Private Home Sleep Study, please contact us at the Hope2Sleep Charity where it will be our pleasure to support you.

See also the British Polio Fellowship Respiratory factsheet which gives more detail on breathing and sleep. This can be found on their website: www.britishpolio.org.uk/factsheets

Kath Hope, Founder & CEO – Hope2Sleep Charity

Reviewed by Professor Joerg Steier, Consultant in Respiratory and Sleep medicine at St Thomas' Lane Fox Centre and King's College, London. Also Medical Advisor of the Hope2Sleep Charity

References

(1) Antoine Léotard, Jonathan Lévy, Sarah Hartley, Avril Pages, François Genet, Frédéric Lofaso, Hélène Prigent, Maria Antonia Quera-Salva, Sleep disorders in aging polio survivors: A systematic review, Annals of Physical and Rehabilitation Medicine, Volume 63, Issue 6, 2020, Pages 543-553

(2) Curtis A, Lee JS, Kaltsakas G, Auyeung V, Shaw S, Hart N, Steier J. The value of a post-polio syndrome self-management programme. J Thorac Dis 2020;12(Suppl 2):S153-S162. doi: 10.21037/jtd-cus-2020-009

(3) Benjafield AV, Ayas NT, Eastwood PR, Heinzer R, Ip MSM, Morrell MJ, Nunez CM, Patel SR, Penzel T, Pépin JL, Peppard PE, Sinha S, Tufik S, Valentine K, Malhotra A. Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis. Lancet Respir Med. 2019 Aug;7(8):687-698. doi: 10.1016/S2213-2600(19)30198-5. Epub 2019 Jul 9. PMID: 31300334; PMCID: PMC7007763

(4) Darlene G. Steljes; Meir H. Kryger; Brian W. Kirk; Thomas W. Millar. Sleep in Postpolio Syndrome: Chest, ISSN: 0012-3692, Vol: 98, Issue: 1, Page: 133-140 Publication Year 1990