



# **Sleep Apnoea**

## **The Story of a 'Pause'**

A hand-drawn word cloud centered around the terms 'sleep' and 'apnoea'. The words are drawn in various sizes and colors (green, brown, red, orange) on a white background. A hand is visible in the bottom right corner, holding a green marker. The word cloud includes terms related to sleep disorders, anatomy, and medical treatments.

**sleep**  
**apnoea**  
**pillow**  
**man**  
**health**  
**problem**  
**respiratory**  
**breathing**  
**insomnia**  
**noisy**  
**male**  
**nasal**  
**sick**  
**heal**  
**patient**  
**exhausted**  
**female**  
**waking**  
**disorder**  
**morning**  
**asleep**  
**lying**  
**healthy**  
**tired**  
**unhappy**  
**sleeping**  
**lifestyle**  
**nightmare**  
**stress**  
**healthcare**  
**adult**  
**night**  
**mouth**  
**obstruction**  
**head**  
**diagram**  
**frustration**  
**tongue**  
**medicine**  
**machine**  
**breath**  
**bed**  
**disease**  
**worried**  
**anatomy**  
**throat**  
**sleepy**  
**care**  
**bedroom**  
**people**  
**awake**  
**person**  
**mask**  
**treatment**  
**snore**  
**medical**  
**hangover**  
**therapy**  
**disturbed**  
**nose**  
**sleepless**  
**human**  
**home**  
**depression**

*There is almost zero awareness in India that many amongst us maybe living with **Sleep Apnoea**, which left untreated could be life threatening tomorrow. This largely undiagnosed and untreated sleeping disorder puts both adults and children at risk of developing behavioural and medical problems with far reaching consequences. At MIOT International, we strive to raise awareness on little known conditions such as Sleep Apnoea, the hazards of which can be minimised with proactive care.*

# What is APNOEA?

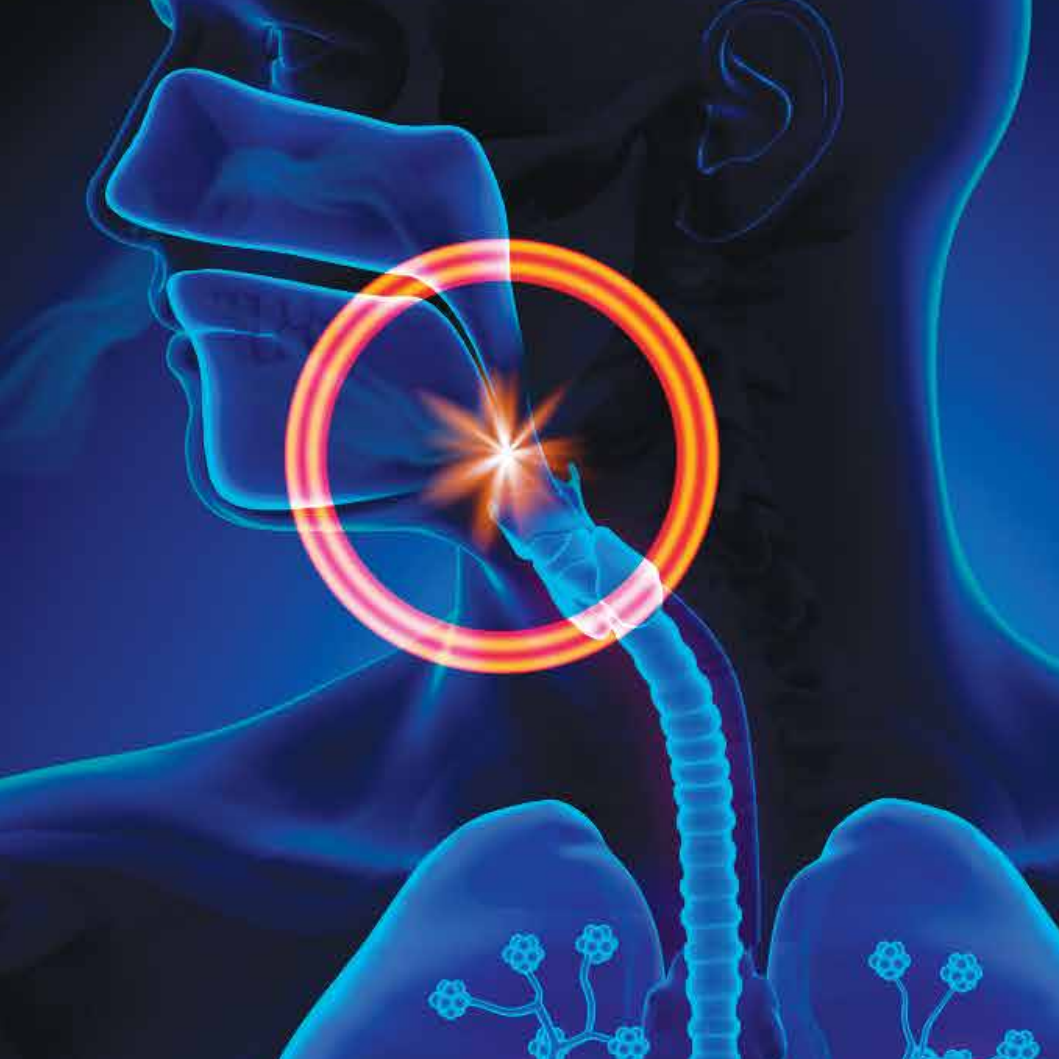
**Apnoea is a disorder where there is an  
ABNORMAL PAUSE in breathing while asleep.**

Each PAUSE (Apnoea) can extend from 5 to 10 seconds or more and could occur 5 to 30 times in one hour.

Apnoea may or may not be accompanied by snoring.  
All snorers need not have Apnoea.

25% of Apnoea patients are estimated to be silent sleepers!

Apnoea can only be detected through a '**Sleep Study**'  
at a specialised centre.



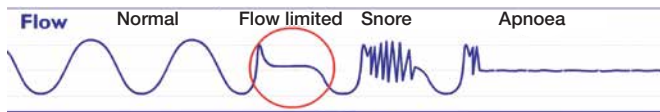
# Immediate Result of APNOEA

The **PAUSE** in breathing **REDUCES** your overall oxygen intake.

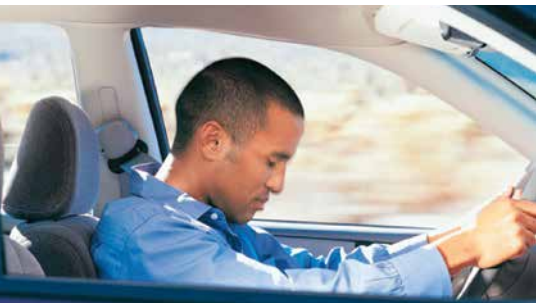
REDUCED levels of oxygen circulate within the body  
along with HIGHER levels of carbon monoxide.  
This is an unhealthy combination.

The reduced oxygen intake happens EVERY time you sleep -  
so it ends up affecting you everyday, if left untreated.

The reduced oxygen intake will affect EVERY organ system  
over time, if left untreated.



Reduced Oxygen flow in an Apnoea patient





# What is an Apnoeic episode?

An Apnoeic episode starts as the patient falls asleep and the MUSCLES IN THE BACK OF THE THROAT RELAX.

These muscles support his palate, uvula, tonsils, side walls of throat and tongue.

When these muscles RELAX, the surrounding soft tissue collapses and the tongue falls back.

It NARROWS the airways and OBSTRUCTS his air passage.

This CHOKES the sleeper, forcing him awake.

He goes back to sleep and **the next episode starts.**



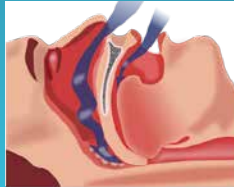
# What causes APNOEA?

Apnoea is the result of any event that causes the throat muscles to RELAX or COLLAPSE leading to narrowed or obstructed airways. Its reasons could be **anatomic** or **lifestyle related**.

## Anatomic Causes



Excess throat tissue



Poor muscle tone in the tongue & throat



Irregular structure of face/nose



Large neck circumference



Obesity

## Lifestyle Factors

A Sedentary Lifestyle, Obesity, Cigarette Smoking, Recreational Drug Usage, Alcohol Consumption and Sedative Usage can all aggravate anatomical causes for Sleep Apnoea by causing throat muscles to relax.





# The Two Types of APNOEA

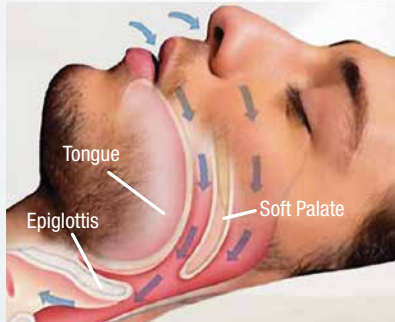
## CENTRAL SLEEP APNOEA (CSA)

The brain DOES NOT SEND THE SIGNAL to the muscles to take a breath and hence there is no muscular effort to take a breath.

## OBSTRUCTIVE SLEEP APNOEA (OSA)

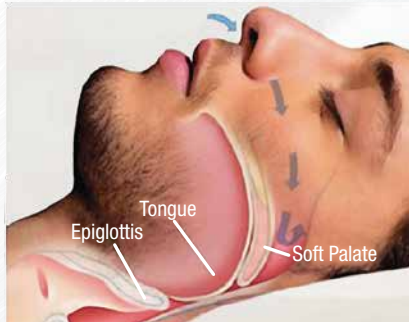
The brain SENDS THE SIGNAL to the muscles and the muscles make an effort to take a breath to take a breath.

However, the muscles are unsuccessful because the AIRWAY IS OBSTRUCTED and prevents an adequate flow of air.



### Normal breathing

During sleep, air can travel freely to and from your lungs through your airways.



### Obstructive Sleep Apnoea

Your airway collapses, stopping air from traveling freely to and from your lungs and disturbing your sleep.

# Effects of Untreated Apnoea

Frequent DROP in oxygen levels affect different parts of the brain causing **behavioural changes in everyday activity**:

- Daytime sleepiness • Fatigue & reduced energy levels
- Memory and speech problems • Increased anxiety & anger levels
- Moodiness & irritability • Reduced sexual drive



**It affects you at your work place.**

- Slower information processing & reaction time • Reduced attention span & quality of attention • Adverse effect on initiative taking and planning.

*Apnoea eventually leads to depression.*

# Health risks of Untreated Apnoea

Disturbed sleep cycles produce  
HORMONES & CHEMICALS which  
cause INJURY to body cells.  
They increase the risk of  
**developing several diseases**  
without symptoms or cause.

Heart disease  
(+ Risk: 3 fold )

Blood pressure  
(+ Risk: 20-40%)

Arythmia  
(+ Risk: 20-40%)

Affects bone health  
(weakening of bones)

Stroke  
(+ Risk: 1.5 fold)

Skin allergies,  
Ear irritations

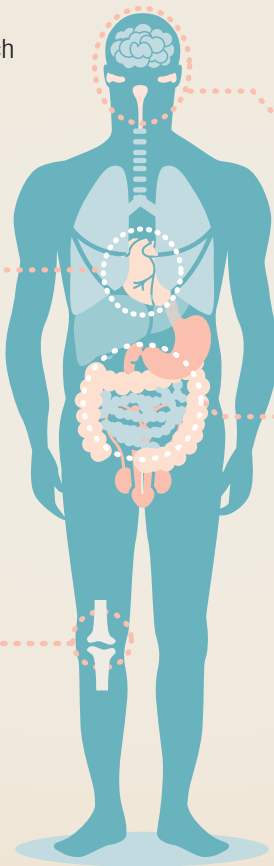
Vision problems

Type 2 diabetes  
(+ Risk: 40%)

High cholesterol  
levels

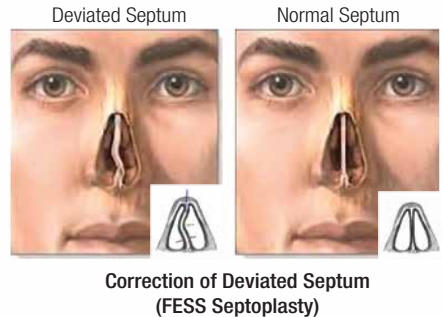
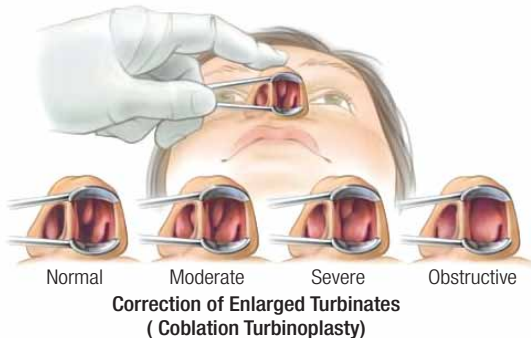
Gastroesophageal  
reflux disease  
(+ Risk: 65%)

Endocrine imbalances  
(+ Risk: 50%)



# Can Apnoea be Medically Treated ?

**Surgery** can be performed to remove OBSTRUCTIONS that are likely to be blocking the free passage of air.



**Surgeries** to reduce or strengthen soft tissue that collapses within the uvula, tonsils and palate (Coblation Uvulopalatoplasty).

**Procedures** to reduce thickness of tongue (Coblation of tongue base).

**Surgeries** to correct birth or accident related deformities of face, jaws and surrounding structures.

**Procedures for weight reduction** (Liposuction and Bariatric surgery).

# Other Modes

## Mechanical Devices

to keep AIRWAYS open during sleep:

**CPAP Machine**  
(Continuous Positive  
Airway Pressure)



**Tongue Retaining  
Devices**



**Dental Devices**  
(Mouth Guard)



**Position Pillows**



**Implantable  
Devices**



## Comprehensive Solutions at



As we now know, Apnoea could be caused by several conditions and a successful outcome is possible only with accurate diagnosis and customised treatment. MIOT International is one of the few centres in the country today offering comprehensive diagnostic facilities and specialised expertise to correct the entire range of factors causing Apnoea.

Our solutions include the latest surgical treatments at the **Department of ENT- Head & Neck & Skull Base Surgery**. The Department is supported by state-of-the-art facilities and surgeons experienced in Reconstructive procedures, Maxillofacial surgeries, Craniofacial techniques and Weight Loss surgeries.

We also offer lifestyle change solutions through our Nutrition & Weight Loss Clinic.

**To know more, contact: 044-4200 2288 Extn: (61336) Email: [ent@miothospitals.com](mailto:ent@miothospitals.com)**

# Behaviour & Life Style Change

- **Weight loss** through exercise & diet changes  
(weight loss of 15 kgs or more is seen to cause a **50% drop** in sleep apnoea symptoms).





Symptoms of Apnoea can also be significantly controlled or eliminated through the following practices:



- **Regular, regulated diet to reduce Acid Reflux**
- **Avoid Smoking**
- **Alcohol Consumption Pattern Change**  
(stop 3 hours before sleep, reduce strength of drink, avoid dehydration)
- **Sleep Mode Alteration**  
(8 hours sleep, maintain regular sleep times, sleep on side, sleep with upper body raised, avoid soft pillows)







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