

# SLEEP APNOEA & YOUR HEART



**“SLEEP APNOEA HAS BEEN SHOWN TO PLAY A MAJOR ROLE IN CAUSING SEVERAL TYPES OF HEART DISEASE”**



## SLEEP and Heart Disease

Sleep is a time of rest for the entire body. Even the heart, which works day and night, naturally slows down during sleep. Scientific studies have shown a direct connection between sleep, sleep disorders, and heart disease. People with sleep apnoea (OSA) are more likely to develop high blood pressure, heart disease and stroke. Effective, safe treatments are available and can decrease a person's chances of developing certain heart diseases.

### HYPERTENSION (*High Blood Pressure*)

Several studies have shown that OSA can lead to the development of hypertension. People with OSA have repeated interruptions in breathing during sleep. This is caused by collapse of the main breathing passage in the back of the throat. Every time this happens and breathing stops, oxygen is used up. After some time (usually 10-20 seconds) a brief awakening (arousal) relieves the restricted breathing and normal breathing resumes. The awakenings are often so short that the person is unaware of this interruption. The patient gets back into sleep and the cycle repeats, often hundreds of times per night. The drop in oxygen level from not breathing, and the increase in heart rate and blood pressure caused by the sudden arousals, causes stress for the heart. These nightly increases in blood pressure eventually lead to permanent increases in blood pressure, even during the day.

is an unrecognized sleep disorder. Hypertension medications may not work well. Treatment of OSA can improve hypertension. For this reason, it is important for your healthcare professional to investigate all of the possible causes of your hypertension, including sleep disorders.

### CORONARY ARTERY DISEASE

There is a direct association between OSA and cardiovascular disease. People with OSA, have higher rates of coronary artery disease (CAD). There are several reasons why this may occur:

- 1) OSA can increase the risk for hypertension, which is a known cause of CAD; and
- 2) the events occurring during OSA can put excessive stress on the heart - the drop in blood oxygen levels and rise in heart rate and blood pressure. As a result, the amount of oxygen supplied to the heart decreases and the work at the same time increases.

OSA is very common in (up to 70%) of patients who have had heart attacks, and this may decrease chance of a full recovery. Studies have shown that having OSA increases the risk of death from CAD. However, if recognized, treatment of OSA reduces the risks.

Hypertension is a known risk factor for the development of major cardiovascular disease such as heart attack, heart failure, and stroke. But treating hypertension may not be enough if the key reason for a person's high blood pressure

**SleepMed Australia**

L18 Central Park

152 St Georges Tce

Perth WA 6000

**1300 484 707**

## CONGESTIVE HEART FAILURE

This occurs when the heart is damaged and unable to pump blood effectively. Disorder of sleep such as OSA can both cause heart failure and develop as a result of heart failure. Studies have shown that OSA is a significant risk factor for the development of heart failure. In addition, people who have heart failure from another condition, risk worsening their congestive heart failure if they develop OSA. The heart muscle, already in a weakened state, is unable to handle the additional stress caused by the OSA. However, treating OSA can improve heart function.

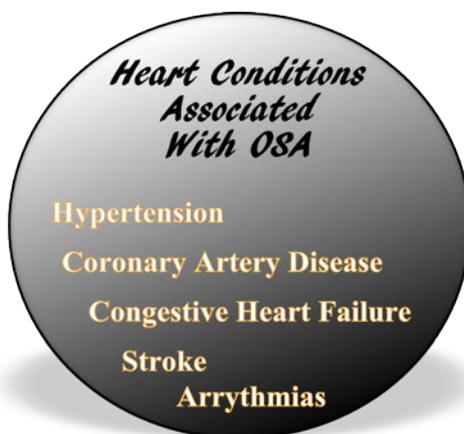
About 30% of people with heart failure also have another sleep-related breathing disorder called central sleep apnea. Here, the interruptions in breathing during sleep, is due to a lack of brain signals to make the effort to breathe. Frequent awakenings and drops in the level of oxygen in the blood, raise heart rate and blood pressure, which can worsen heart failure.

New technology has been developed which is available, through a sleep specialist, allowing effective control of central sleep apnoea which will improve heart function as well as improve sleep.

## STROKE

During a stroke the brain is damaged when the supply of blood and oxygen is reduced or cut off. Hypertension is the most common cause, and OSA can lead to the development of hypertension. In addition, OSA may cause strokes directly since the level of oxygen drops during apneas.

Abnormal breathing patterns during sleep especially OSA are also more common following a stroke. Other effects of OSA, such as excessive sleepiness from disrupted sleep and impaired thinking, may hamper a person's recovery.



## ARRHYTHMIAS

Arrhythmias are irregular rhythms that may develop within a diseased heart. A common example is atrial fibrillation. Arrhythmias are more common in patients with OSA. This may be due to direct effects of OSA on the heart, or

indirectly through associations with hypertension, coronary heart disease, and congestive heart failure. OSA treatment may help decrease arrhythmias.

## Effects of Heart Disease on SLEEP

As outlined above, sleep-related breathing disorders can directly cause heart disease. Yet, there are effects of heart disease on sleep that, though more subtle, are also important to address. For instance, patients with congestive heart failure often report difficulty falling asleep or staying asleep. This may be due to shortness of breath that often accompanies heart failure. This shortness of breath is often worse when the patient lies down because blood in the leg flows back into the heart and can overwhelm its ability to pump. If your healthcare professional thinks that you have a sleep disorder, he or she may suggest you have a sleep study, or refer you to a sleep medicine specialist. Sleep studies can be performed in a clinic or in the comfort of your home. Small sensors are placed on your body to measure your sleep, breathing, heart rate, and oxygen level. The sleep specialist will be able to determine whether you have any abnormalities in the quality of your sleep. Sleep disorders are treatable, and treatment can lead to a more healthy heart.