

Diagnosis of Sleep Disorders

In an effort to accurately diagnose and treat your sleep disorder, your doctor may send you for a diagnostic sleep study or overnight polysomnogram.

Polysomnography is a test to diagnose numerous sleep disorders including sleep apnoea, periodic limb movements, narcolepsy, REM behaviour disorder, sleep walking and many more. A polysomnography requires an overnight stay in the sleep investigation unit. Trained staff will apply electrodes and sensors which record physiological signals during sleep, including:

- Electrical activity of the brain
- Snoring
- Eye movement
- Respiratory effort
- Muscle activity
- Body movements/Limb movements
- Airflow from the nose and mouth
- Heart rate
- Blood oxygen levels (non-invasively)

Medical condition reporting

Driver license holders are required to report any long-term or permanent medical condition (including but not limited to sleep disorders) that is likely to adversely affect their ability to drive safely. You must tell the department as soon as this condition develops and you cannot wait until you renew your licence. Failure to report this condition may lead to a disqualification from driving and a \$6000 fine. More information can be obtained by speaking with your doctor or a publication called Assessing Fitness to Drive can be viewed at www.austroads.com.au/aftd.

In the end it's up to you

With effective treatment, sleep apnoea and snoring can be banished and healthy sleep can be restored!

When you commence treatment, make every effort to persevere because your well-being depends on your efforts as well as those of your Doctors and Scientists at QS.

Join a support group such as Sleep Disorders Australia (SDA) www.sleepoz.org.au; they are extremely helpful and can assist you with any problems you may experience while giving you the opportunity to share problems and ideas with fellow users of CPAP.

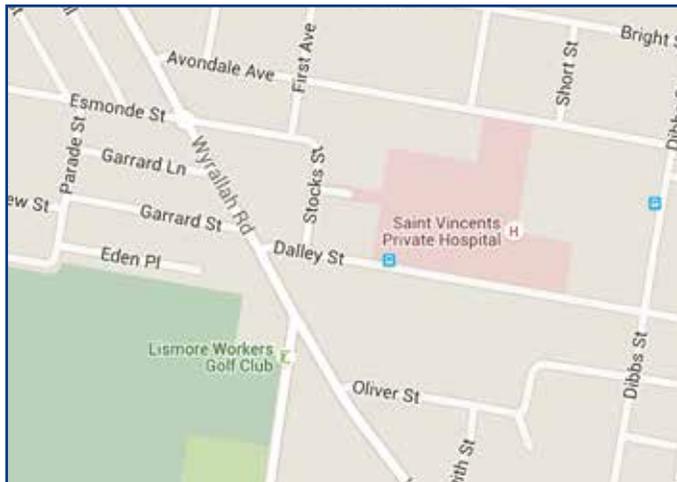
Accredited Sleep Physicians, Partners and Associates

Dr J Binder	Dr S Bowler	Dr L Burr
Dr J Churton	Dr G Eather	Dr M Fanning
Dr W Kelly	Dr S Leong	Dr V Mubarak
Dr A Rosenstengel	Dr Z Scounos	Dr K Semple
Dr G Simpson	Dr S Vincent	

Paediatric Respiratory/ Sleep Physicians

Dr S Burgess	Dr S Suresh
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To make an appointment with one of our Sleep Physicians you will require a referral from your GP or Specialist.



For More Information

For more information visit QS's website www.qsdu.com.au or contact the sleep unit on 1300 559 116.

Sleep Unit Locations

QS has a network of sleep units located throughout regional Queensland.

Brisbane South (Head Office)
Suite 20 Level 6, Mater Medical Centre
293 Vulture St, South Brisbane Qld 4101

Brisbane North
Holy Spirit Northside Hospital
Rode Rd, Chermerside Qld 4032

Cairns
Cairns Private Hospital
1 Upward St, Cairns Qld 4870

Rockhampton
Mater Private Hospital
Ward St, Rockhampton Qld 4700

Townsville
Mater Private Hospital
Fulham Rd, Townsville Qld 4812

Brisbane City
St Andrews War Memorial Hospital
North St, Spring Hill Qld 4000

Brisbane East
Mater Private Hospital Redland
Weipin St, Cleveland Qld 4163

Lismore
St Vincent's Private Hospital
20 Dalley St, Lismore NSW 2480

Springfield
Mater Private Hospital
30 Health Care Dr, Springfield Qld 4300

Home Study Locations:
Atherton, Brisbane, Bundaberg,
Cairns, Hervey Bay, Ingham, Lismore,
Mackay, Mt Isa, Rockhampton, Townsville

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St Vincents Private
Hospital Lismore



Queensland Sleep & Respiratory Failure Clinics

Obstructive Sleep Apnoea and Snoring

Always
tired?

Family and friends
complaining about
your snoring?

Falling asleep
at inappropriate
times?

Don't let it ruin your life!



Dear: _____

An overnight sleep investigation has been arranged for you with Queensland Sleep (QS) at the St Vincents Private Hospital - Lismore on

Date: _____ Time: _____

Before Your Study

- Please complete the admission form and return it via email sa@qsdu.com.au or fax 07 3217 2523 prior to your appointment
- Have your evening meal before you arrive, and if possible, drink your usual amount of alcohol – DO NOT DRINK AND DRIVE! You may bring alcohol to the sleep unit for consumption prior to the study if desired.
- In the days before your sleep study, try to follow as near as possible your 'normal' sleeping schedule
- Remove acrylic nails and/or nail polish – to monitor your oxygen levels overnight a probe is attached to your finger tip and monitors the blood oxygen level in your nail bed (non-invasively)

What to Bring to QS

Please bring:

- Your referral from your Doctor
- Medicare card and private health fund membership details
- Sleepwear and a change of clothes for the following morning
- You may bring your own pillow
- Personal toiletries, shampoo and medication
- Any CPAP Equipment or snoring devices you may be using

Cancellation

Please call 1300 559 116 for all cancellations and appointment changes.

When You Arrive

Admission is 7:00pm at the reception desk via Main Entrance off Dalley St. Free parking is available near main entrance.

Accounts (A Valid Medicare Card is Required)

There are two charges for your sleep investigation:

- **Charge One:** This is for the cost of your hospital bed, which is covered by your private health fund. (Please contact them for further information)
- **Charge Two:** This is for the recording, analysis and reporting of the sleep investigation, which is covered by Medicare and your private health fund

If you do not have private health insurance, please contact the sleep unit on 1300 559 116 for further information on your bed fee.

Results

Please contact your referring doctor and make a follow up appointment approximately 3 weeks after the date of your study. QS will provide your referring doctor with a detailed report which will outline any abnormalities, as well as providing treatment options, which should be discussed with your doctor. **As there is a large volume of information to analyse and interpret, reports are not immediately available, and will be completed 10-15 working days after your test.**

If you have a follow up appointment within three weeks of your sleep investigation, please contact your referring doctor prior to your appointment to determine whether your report has been completed.

Sleep Apnoea

Sleep apnoea is a syndrome associated with a range of symptoms; however it is often characterised by numerous and sometimes prolonged interruptions of breathing during sleep, and may be associated with snoring. Sleep apnoea occurs in approximately 4% of males and 2% of females.

There are three types of sleep apnoea: obstructive, central and mixed. Obstructive sleep apnoea (OSA) is common and occurs when there is little or no airflow in or out of the nose and mouth. It occurs during sleep due to a lack of muscle tone in the upper airway muscles and the effect of gravity on the upper airway. This may be compounded by excess tissue (fat), structural changes (enlarged tonsils) and characteristics of the upper airway (reduced size of the throat). During sleep, especially Rapid Eye Movement (REM) - dreaming sleep, muscle tone relaxes and the tongue and soft palate lose their rigidity, causing partial or complete obstruction of the airway at the back of the throat.

Central apnoea is uncommon and is caused by a problem with the part of the brain that controls breathing. Mixed apnoea is a combination of the obstructive and central apnoeas.

Symptoms and Consequences of Sleep Apnoea

Because of disturbances to normal sleep patterns, people with sleep apnoea often feel very sleepy during the day, and their concentration, and daytime performance suffers. Symptoms of sleep apnoea can include:

- Restless sleep
- Irregular breathing during sleep (observed by partners or family members)
- Impaired concentration and/or memory
- Snoring
- Morning headaches
- Falling asleep at inappropriate times
- Mood changes
- Sexual dysfunction
- Increased frequency of urination during the night (nocturia)
- A need for excessive time in bed

Drinking alcohol and taking sleeping pills increases the frequency and duration of breathing pauses in people with sleep apnoea. OSA sufferers often don't know they have a problem and may not believe it when told because sleep disordered breathing is usually noticed by a partner or family member. Abnormalities in sleep behaviours should be taken seriously and reported as a symptom as untreated sleep apnoea can contribute to a large number of other health problems including:

- High blood pressure (hypertension) – 2-3 times greater risk of this with OSA and OSA is found in approximately 80% of patients with difficult to treat hypertension
- Diabetes – 2.3 times greater chance of being diagnosed with diabetes
- Irregular heartbeat – untreated OSA can increase the risk of arrhythmias developing post coronary artery bypass surgery

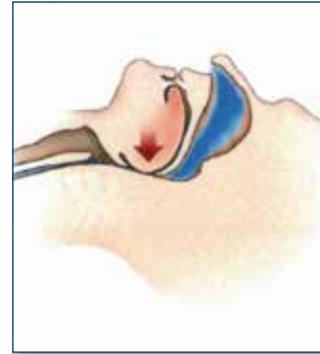


Fig 1.1 The tongue and soft palate (red arrow) relax, causing an obstruction to breathing.

- 70% of people who have had a stroke also have OSA. Patients with untreated OSA have been shown to have a slower and less complete recovery following a stroke
- Heart disease – 1.3 times greater risk of developing ischaemic heart disease in untreated OSA
- Cardiovascular death – 2.5 times risk of cardiovascular death with untreated OSA
- Cognitive function – untreated OSA increases the risk of a motor vehicle accident by 3 to 7 times

Treatment for Sleep Apnoea (CPAP)

Nasal continuous positive airway pressure (CPAP) is the most common treatment for sleep apnoea. CPAP involves wearing a fitted mask over the nose and/or mouth during sleep, through which a low pressure is delivered to the upper airway. To determine your needs a CPAP titration (a second overnight stay at the sleep unit) is required. During this, the air pressure delivered is adjusted while you sleep to a level that will prevent your throat and associated structures from collapsing.

Once an appropriate pressure is determined, a report will be sent to your referring doctor recommending you have a trial of CPAP at home. **A Scientist from the sleep investigation unit will contact you after your study and you will receive an information package outlining the CPAP hiring process.**

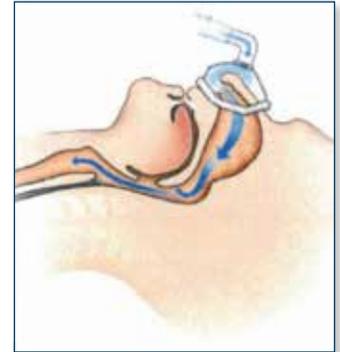


Fig 1.2 With the application of CPAP, the tongue and soft palate are "splinted", and normal breathing continues.

Alternative Treatments

Dental Appliances (Mandibular Advancement Splints or Mandibular Repositioning Device)

Dental appliances that reposition the lower jaw and tongue are helpful to some patients. A dentist or orthodontist is required to fit this device. QS DU can provide the names of professionals who can supply these devices. A follow-up sleep study should be performed after a splint is fitted to ensure it is effective in treating any snoring and/or sleep apnoea.

Surgery

Several surgical procedures are used to increase the size of the upper airway. Common surgical procedures include removal of adenoids and tonsils, nasal polyps, growths, or other tissue in the airway, and correction of structural deformities. Please note that all surgical procedures carry inherent risks, and surgical modifications are irreversible.

Non-specific Therapy

Behavioural changes are an important part of the treatment, and in mild cases, it may be all that is needed.

Individuals with apnoea should avoid the use of alcohol and sleeping pills, which make the airway more likely to collapse during sleep and prolong the apnoeic periods.

Overweight persons can benefit from losing weight. Even a 10 percent weight loss can reduce the number of apnoeic events for most patients.