Mobile: 0405 096 996
Fax: 8177 0689
Email: info@southernsleep.com.au

Thank you for choosing Southern Sleep's diagnostic services

Your Portable Diagnostic Sleep Study Has been booked on: _____

You will need to arrive at the:

Southern Sleep
1138a South Road
Clovelly Park SA 5042

At: ..... PM to have the portable diagnostic machine set up.

You will be contacted separately by the outpatient clinics to notify you of your follow-up appointment and receive your sleep study results, unless alternative arrangements are made with your specialist.

The following forms **must** be completed and brought with you on the night of the study.:

- **Confidential Patient Questionaire**
- **Epworth Sleepiness Scale**

The following is an information sheet for you to keep.

- **Sleep Apnoea Information Sheet**

Things you need to do before you arrive for your sleep study set up:

- Make sure you have had a shower
- Remove any moisturisers or makeup you may have on your face
- Arrive in loose fitting clothing that you will be comfortable sleeping in (such as a T-shirt and track pants)
- If you usually shave, please remove any stuble you may have
- Please remove all nail polish from index fingers

If you cannot make your booking, please notify us within 48 hours of your scheduled appointment. Please call **0405 096 996** or email us at **info@southernsleep.com.au** as soon as possible to cancel or re-book!

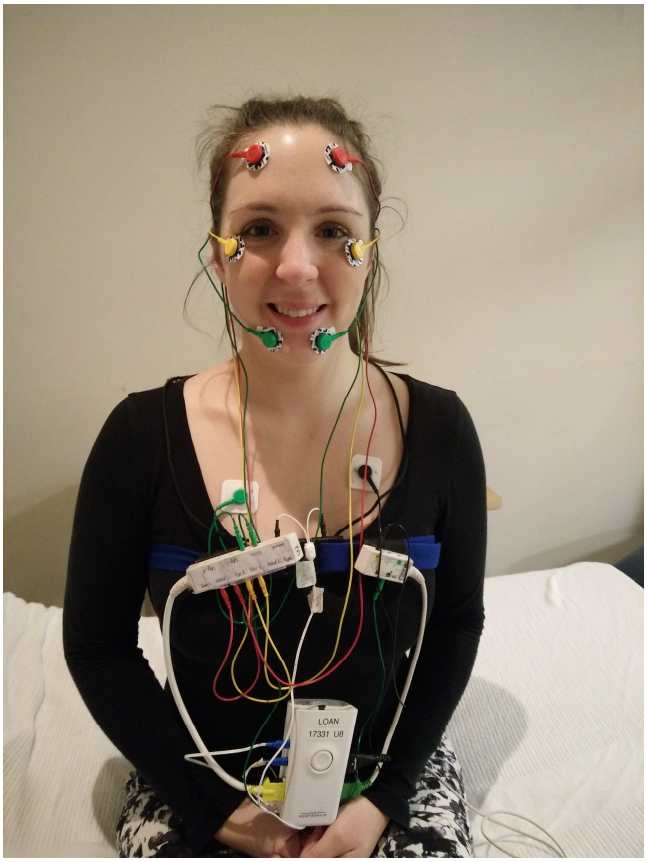
The technician will instruct you on how to remove all of the equipment yourself, for when you wake up the next morning. The equipment then needs to be returned (along with the patient feedback form) by approximately 10am the next morning (unless negotiated otherwise) to the same rooms where you had the set up, in SA Heart.

Southern Sleep
1138a South Road
Home sleep study setups

Home sleep study setups are conducted in the Southern Sleep rooms at 1138a South Road, Clovelly Park

Please take a seat in the reception area when you arrive.

Example of how you will look, after the technician has completed your diagnostic unit wire-up.



Key points about your setup:

- There are 2 respiratory bands across your abdomen. If you are a woman, the top band will be placed over your bra straps and therefore, you may choose not to wear a bra for the setup as you will have difficulty removing it when you get home
- We ask that you do not wear nail polish, as it interferes with the measurement of oxygen (which is accomplished using a pulse oximeter overnight)
- For men: If you have a long beard, this is fine. However, if you regularly shave, you will need to have a clean shave so that any growth will not interfere with the adhesion of electrodes on your chin
- Wearing loose pants enables the technician to more easily attach the wires which are used to determine leg movement throughout the night. The wires are fed down, through the top of your pants, so that you will be able to remove your pants later on at home.

Confidential Patient Information

Patient to fill out following details:

Full name: _____

Date of birth: _____

Address: _____

Suburb: _____ Post code: _____

Is this your postal Address? Y / N

If no, what is your postal address?: _____

_____

Medicare number: _____

Reference number: _____

Expiry date: _____

For technician use only:

Date of study: _____

Full name: _____

Technician signature/initials:

_____

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Epworth Sleepiness Scale

(Subjective measure of sleepiness)

Name: _____ Age (years): _____

Today's Date: _____ Gender (tick): Male ☐ Female ☐

How likely are you to fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently, try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

0 = would ***never*** doze
1 = ***slight*** chance of dozing
2 = ***moderate*** chance of dozing
3 = ***high*** chance of dozing

Situation	**Chance of dozing**
Sitting and reading	_____
Watching TV	_____
Sitting inactive in a public place (eg theatre or a meeting)	_____
A passenger in a car for an hour without a break	_____
Lying down to rest in the afternoon (when circumstances permit)	_____
Sitting and talking to someone	_____
Sitting quietly after lunch without alcohol	_____
In a car, while stopped for a few minutes in the traffic	_____

Total score: _____

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Confidential Patient Questionnaire

NAME: .....

DATE OF BIRTH: .....

GENDER: .....

REFERRING DOCTOR: .....

The following information is requested to assist us in giving you the best possible care. All of the information you provide will be treated as strictly confidential.

Try as best you can to answer all questions. If you are certain that a question does not apply to you leave it blank.

Section 1

Listed below are some screening questions that will help inform our sleep physicians about your risk factors for obstructive sleep apnoea. Please answer each question with either yes/no or by filling out in space provided.

1. Do you snore loudly (louder than talking or loud enough to be heard through closed doors)? Yes / No
2. Do you often feel tired, fatigued, or sleepy during daytime? Yes / No
3. Has anyone observed you stop breathing during your sleep? Yes/ No
4. Do you have or are you being treated for high blood pressure? Yes / No
5. *What is your current height …….. cm and weight? …… kg*
7. Please measure your neck circumference and write it in space provided …….. cm

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Section 2

Listed below are hypothetical statements about night and daytime symptoms. Please circle an answer from 1 to 5 that is *most* true for *your situation* using the following scale:

1 = NEVER
2 = RARELY
3 = SOMETIMES
4 = OFTEN
5 = ALWAYS
N/A = Not applicable

1	My **nose blocks** up when trying to sleep (allergies, infections).	1 2 3 4 5
2	I wake with a **dry mouth.**	1 2 3 4 5
3	I wake in the morning with a **headache.**	1 2 3 4 5
4	I have daytime naps. (Average number per day = ...)	1 2 3 4 5
5	I suffer from impairment of **memory.**	1 2 3 4 5
6	I find it difficult to **concentrate.**	1 2 3 4 5
7	I experience **restless legs,** which stop me from falling asleep.	1 2 3 4 5
8	I experience or I am told that I **sleep walk**.	1 2 3 4 5
9	My sleep is disturbed by pain in the neck, back, muscles/joints/ legs/arms/chest?	1 2 3 4 5

Section 3

This section asks a number of questions related to your typical sleep habits. Please provide an answer on the dotted line.

1. At what time do you usually go to bed on weeknights? .....
2. At what time do you usually go to bed on weekend nights? .....
3. How many night per week do you take something to help you get to sleep? .....

   Please specify what you take .....
   Pleas specify the amount you take .....
4. Do you feel that you typically get enough sleep during the night? .....
5. How many times do you estimate that you wake up during the night? .....
6. Do you work rotating shifts or unusual times? .....

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Section 4

This section asks questions about some medical and lifestyle factors.

1	Do you **smoke** cigarettes? (Average daily number = ...)	Yes	No
2	If you do not smoke now, have you smoked in the past? (Average daily number =.....)	Yes	No
3	Do you drink **alcohol**? (Average amount = ...)	Yes	No
4	Is your sleep disturbed by pain in the neck, back, muscles/joints/legs/ arms/chest?	Yes	No
5	Do you have any known medical issues related to your breathing or heart? Please specify		

PREVIOUS SLEEP STUDIES:

Please name any other Sleep Centre you have attended and specify any treatment you have received for a sleep problem.

.....

.....

.....

Signed by:

Printed Name: .....

Signature: .....

Date: .....

Technician sheet

For technician use only.

Relevant medical history:

Heart conditions	Yes / No……
Lung conditions	Yes / No……
Diabetes	Yes / No……
Stroke	Yes / No……
Epilepsy	Yes / No……
Depression	Yes / No……

Details/other:……..
……
……

Medications: ……..
……
……..

Sedatives/hypnotic drugs/alcohol (within last 12 hours):…….
……
……

Allergy or sensitivity to latex/surgical tapes? Yes / No
Reaction details: ……..
(if more severe than local redness, call senior technician)
Alternative materials used: ……..
Test patch clear Yes / No

Technical checklist:
Format and set up card: Yes / No
Biocalibrations—signal checks EEG EOG EMG ECG R.Eft R.Flow
SaO2—if <94 on room air > recorded on tech finger = >96%

Administration Checklist:
Medicare card processed : Yes / No
PDX Unit No: …….
Time of equipment agreed return time by: 10am or ……..
Technician Initials: ……..

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What can I expect from my sleep study?

Introduction

Thank you for choosing to have an ambulatory sleep diagnostic with Southern Sleep.

Southern Sleep help people revive their lifestyle by improving the sleep they get. You may not know it, but sleep can give you tremendous power. It has the power to restore, rejuvenate, and energise your body and brain. Whilst we spend only a third of our life asleep, it has profound effects on the other two thirds of your life in terms of alertness, energy, mood, body weight, perception, memory, reaction time, productivity, performance, decision making, communication skills, creativity, safety, and quality of life.
By deciding to undergo a sleep study, you are taking the first step in improving your sleep health.

If you have any further questions or enquiries, please feel free to ask any of our friendly, dedicated staff.

What is a Sleep Study?

A sleep study is a recording of the way you sleep. Contrary to public perception, sleep is not a passive state. Sleep can be categorised into different stages, including drowsiness, light sleep, deep sleep, and dream sleep. By analysing your sleep patterns as you cycle through each of the stages, we can determine whether a sleep disorder is present.

Your sleep study will involve:

1. The attachment of tiny sensors called electrodes to various parts of your body to monitor brain waves, muscle movements, eye movements, breathing through the mouth and nose, snoring, heart rate, and leg movements;
2. Bands around your chest and stomach region to measure breathing; and
3. A pulse oximeter on your finger to measure your heart rate and oxygen level in the blood.

Why Do I Need A Sleep Study?

A sleep study is required to fully understand your sleep difficulties. By recording the activities of your brain and body system, as well as their relationship throughout the night, a qualified Southern Sleep specialist can review and interpret your data to determine whether a sleep disorder is present and recommend appropriate treatment if necessary.

When Will I Get My Results?

The analysis and interpretation of a sleep study is a complex process involving a variety of specially trained professionals. Apart from our dedicated team of sleep specialists who review and interpret the final results, we also have specially trained sleep technologists that process or “score” the large amount of data recorded during the study. On average, this involves sifting through more than 800 pages of data.

At Southern Sleep, we make it a priority to get your results back to you as efficiently as possible, and we pride ourselves on the ability to do so within 2-3 weeks.

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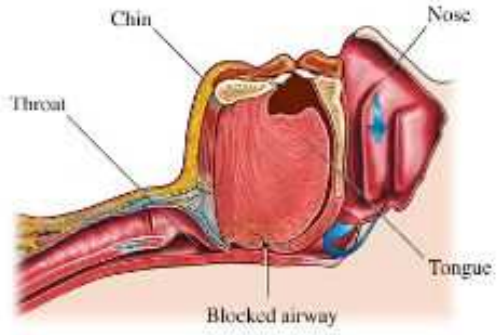
Sleep Apnoea

Patient Information

DEFINITION — Sleep apnoea refers to the periodic cessation of air moving in and out of the lungs during sleep. Airflow must stop for an interval that is longer than the normal pause between breaths in order to be called an apnoea. This interval is usually defined to 10 seconds or more for adults.
There are three basic types of sleep apnoea:

- **Central** apnoea: No air moves in and out of the lungs because the person makes no effort to breathe for a certain period of time
- **Obstructive** apnoea: The person tries to breathe, but cannot take in air because a portion of the throat is blocked
- **Mixed** apnoea: This is an event when initially there is no effort to breathe; then when the person resumes making efforts to breath, the airway is obstructed and no air moves into the lungs.

There are also related breathing events termed hypopnea rather than apnoea. Events identified as hypopneas are those in which there is airflow into the lungs but it is abnormally reduced either because the throat is partially obstructed (obstructive hypopnea) or because the patient reduces his/her breathing effort (central hypopnea) for a certain period of time.
This topic review will focus on the most common type of sleep apnoea, ***obstructive sleep apnoea (OSA)*** or ***obstructive sleep apnoea-hypopnea (OSAH).***
CAUSES — OSA and OSAH are caused by abnormal closure of the airway during sleep.



The throat is surrounded by muscles that open or close the airway during speech or swallowing. These muscles are also important in allowing air to flow normally into and out of the lungs during breathing.
If these throat muscles relax inappropriately during sleep, or if the throat is abnormally small, the airway may partially close. This results in snoring and a decrease in the flow of air into and out of the lungs. An episode of partial airway closure is called a sleep hypopnea. Complete closure of the airway results in cessation of all air movement, and is called an obstructive apnoea. A person may have both apnoeas and hypopneas during sleep.
Changes in blood oxygen and carbon dioxide levels occur when breathing is abnormal during sleep. Even if these levels change only slightly, it may be recognized by the brain that there is some interruption in normal breathing. It is also possible that the brain recognizes when more work is being done in an effort to get air into the lungs, as may occur when the throat is completely or partially blocked. This causes partial awakening (arousal) from sleep. Once a person begins to wake up, the throat muscles contract, the airway is reopened, and normal breathing resumes. This is often, but not always, associated with a loud snore or snort. The person often back to sleep quickly, usually without being aware of having awakened. Alternatively, some patients with OSA may awaken suddenly and completely with a sensation of gasping, smothering, or choking.
Once sleep resumes, the throat muscles relax, the airway closes, and the pattern repeats itself. The period of apnoea or hypopnea may last a minute or more and this cycle can occur hundreds of times in a single night. In this way, OSA and OSAH cause numerous interruptions in sleep, and may result in significant sleep disruption and deprivation. This is true even if the person is not aware of these frequent interruptions. In addition to poor quality sleep, OSA and OSAH

SYMPTOMS — The main symptoms of OSA and OSAH are loud snoring and severe daytime sleepiness. However, a person can have these conditions and not be aware of either of these symptoms. For example, if the person does not have a bed partner, he or she may not be aware of the snoring. Sleepiness can also come on gradually and build up over time to the point where the person accepts it as normal.

Other symptoms include:

Restless sleep
Awakening with choking, gasping, or smothering
Awakening with chest pain or discomfort
Morning dry mouth or sore throat
Morning confusion
Morning headaches
Personality change
Memory impairment, difficulty concentrating
Impotence
Frequent awakenings to urinate

In addition, patients with high blood pressure have an increased risk of having OSA, particularly if they are overweight.

DIAGNOSIS — A healthcare provider may suspect sleep apnoea based upon a patient's symptoms. The patient's neck circumference may be measured, as large neck size is associated with increased risk of sleep apnoea. If a bed partner has observed the patient during episodes of choking or gasping in the night, this also raises the suspicion these conditions are present. However, the diagnosis can be established with certainty only by testing the patient during sleep.

Patients with OSA are usually referred to a sleep laboratory for a full sleep study using a polysomnogram.

The polysomnogram measures:

Blood oxygen level
Heart rate and electrocardiogram (ECG)
Breathing effort and airflow
Duration of the various stages of sleep
Body position
Limb movement

Some devices can be used at home to gather the same information as a polysomnogram performed in a sleep laboratory. Whether home studies provide the same quality of information studies performed in a sleep laboratory is the subject of ongoing research. Other types of sleep studies provide less data. The appropriate use of these more limited studies has not been clearly defined.

RISKS — Aside from feeling tired, complications attributed to OSA and OSAH include poor concentration. Studies have shown that patients with severe OSA/OSAH are more than twice as likely to be involved in a motor vehicle accident than people without these conditions.

In addition, there is some evidence that untreated OSA/OSAH is associated with an increased risk for cardiovascular problems such as high blood pressure, heart attack, abnormal heart rhythms, or stroke. This increased risk may be due to the wide fluctuations in heart rate and blood pressure observed in patients with OSA/OSAH during sleep. However, further research is needed to clearly document whether sleep apnoea contributes to any of these problems.

TREATMENT — Treatment can be generally divided into non-surgical and surgical approaches.

Non-surgical treatment — A number of non-surgical therapies may be recommended:

Behavioral treatments — Changes in lifestyle and habits may reduce the severity of OSA/OSAH. For example, weight reduction may be helpful in overweight patients with OSA/OSAH; however, the degree of weight reduction required to reduce or eliminate these conditions varies.

Some patients benefit from restriction of body position by sleeping exclusively on their side or with the head of the bed elevated. Since alcohol may promote throat closure during sleep, it should be avoided. In addition, OSA/OSAH may be worsened by certain prescription medications, irritation of the upper airway, and high altitude.

People with OSA/OSAH should always be certain that their healthcare provider is aware of their condition in order to avoid medications which may make throat closure more likely, or at least so the potential risks and benefits can be determined. Behavioural treatments do not always have a curative effect, and additional treatment is often necessary. For this reason, it is important that a person who thinks they have sleep apnoea discuss the problem with their healthcare provider, rather than trying to manage it themselves.

Continuous positive airway pressure (CPAP) — The main non-surgical treatment for OSA/OSAH is the use of a mechanical device to keep the upper airway open during sleep. A CPAP machine supplies air under relatively low pressure through a mask that fits on the nose, or over the nose and mouth. Devices which fit comfortably into the nasal opening, rather than over the nose, are also available. Patients should use CPAP whenever they sleep.

The CPAP device may used for the first time in the sleep lab, where a technician can adjust the pressure needed to keep the airway from closing. Most patients are able to tolerate CPAP, especially if the mask fits comfortably. Once treatment with CPAP begins, the improvement in alertness and other benefits is often rapid.

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Other devices — Other mechanical devices may be useful in some patients. These devices are typically oral appliances and function by holding the lower jaw or tongue forward during sleep.

Surgical treatment — Tracheostomy, the insertion of a breathing tube directly into the throat, was the first treatment used in OSA/OSAH. It was successful because it created a continuously open airway. Tracheostomy requires patients to undergo the risk of an operation, side effects, cosmetic factors, and lifestyle changes. For these reasons, tracheostomy is reserved for patients with severe disease in whom less drastic measures have failed or are inappropriate.

Other surgical procedures, which involve reshaping the structures in the upper airways or surgically repositioning the jaw, may be helpful in some patients.

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem. Because no two patients are exactly alike and recommendations can vary from one person to another, it is important to seek guidance from a provider who is familiar with your individual situation.

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