

Obstructive Sleep Apnea Information For Patients

*Audience: Patients who have completed their sleep study
and before treatment for their Sleep Disordered Breathing*

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CRS
Cardio Respiratory Sleep

About Obstructive Sleep Apnoea

What is Obstructive Sleep Apnoea?

Obstructive Sleep Apnoea (OSA) is a common sleep disorder, which is characterized by abnormal pauses or low breathing during sleep. The breathing pauses are called apnoea and the periods of low breathing are called hypopnoea. Many apnoea and hypopnoea events last at least 10 seconds and may occur several times each hour. With each period of apnoea, oxygen levels are often reduced and at the end of the apnoea a person momentarily wakes from sleep to begin breathing normally again.

What causes Obstructive Sleep Apnoea?

When a person sleeps the muscles and tissues surrounding the upper airway relax. In individuals with OSA, relaxation of tissue during sleep causes blockage, narrowing or complete collapse of the upper airway. Blockage or narrowing of the airway may be caused by any combination of the following factors:

- **Structure of the airways:** In some individuals the physical features of the upper airway may obstruct the airway and cause breathing difficulty. These physical features may include the jaw, hard palate, soft palate, tongue, uvula (ball of tissue hanging from the roof of the back of the mouth), tonsil or adenoids.
- **Excess body weight or obesity:** Excess fat and muscle tissue around the chin and neck crowds the airway and may restrict normal breathing. Likewise, excess weight over and around the abdomen may make breathing more difficult during sleep.
- **Age:** As one ages, the muscles surrounding the upper airway become less firm. Without the supportive firmness of the muscles in the neck and jaw, the airway may collapse to some degree during sleep.

The Signs and Symptoms of OSA

Symptoms of OSA include:

- Excessive daytime sleepiness,
- Fatigue
- Restless Sleep
- Morning headaches
- Dry mouth upon awakening
- Decreased concentration and decreased memory
- Reduced quality of sleep can also lead to weight gain or depression.

Signs of OSA include:

- Snoring
- Breathing pauses (apnoea) during sleep
- Snorting during sleep
- Frequent waking secondary to choking or gasping for air
- Frequent trips to the toilet

Many individuals with OSA are unaware they are having breathing pauses during sleep and may perceive their sleep to be normal. Thus, the bed partner is often the one to recognize the problem.

What is the relationship between OSA and Snoring?

Snoring is caused by vibration of upper airway tissue that occurs as a person breathes. Because both OSA and snoring are caused by excess tissue in the airway, a person who snores will often also have some degree of OSA. However, some individuals that snore do not have OSA.

Why is Obstructive Sleep Apnoea Dangerous?

OSA disrupts sleep and causes physiological stress on the body. With each apnoea or hypopnea event, blood oxygen levels are reduced and stress is placed on the heart. If left untreated over time, OSA may lead to:

- Cardiovascular Disease
- Stroke
- Diabetes
- Mood disorder
- Impotence
- Impairment of cognitive function.

Because OSA causes excessive daytime sleepiness, persons with OSA are also at greater risk of motor vehicle accidents and work-related accidents/mistakes. In addition, persons with OSA often gain weight and struggle to lose it because they are too tired to exercise or too exhausted to make healthy food choices.

Is Obstructive Sleep Apnoea Treatable?

OSA is treatable with various devices and lifestyle changes. The severity of one's OSA will often dictate the type of treatment that is needed.

Sleep Apnoea is a reportable medical condition to the WA Department of Transport

<https://www.transport.wa.gov.au/licensing/report-a-medical-condition.asp>

Treatment Options for Obstructive Sleep Apnoea

Continuous Positive Airway Pressure (CPAP)

CPAP is the most effective treatment for obstructive sleep apnoea (OSA), especially in cases of moderate-severe OSA. The treatment consists of a small machine that administers positive air pressure through a tube that connects to a small mask worn over the nose and/or mouth. The CPAP machine administers positive air pressure whilst the patient breathes normally. The air pressure keeps the airway open and prevents collapse of upper airway tissue that causes snoring and OSA.

CPAP may entirely treat and normalize any degree of OSA, even in cases of very severe OSA. The same is not true for other forms of OSA treatment, such as dental appliances, surgery, posture modification, weight loss, or lifestyle modification. These secondary forms of OSA treatment are typically only appropriate and effective when the OSA is mild to moderate.

Mandibular Advancement Splint (MAS)

The Mandibular Advancement Split is a dental appliance used to treat mild-moderate cases of Obstructive Sleep Apnoea (OSA). These device works by moving the mandible (lower jaw bone) forward and downward to open the upper airway at the back of the throat. Upper airway tissues are tightened which prevents collapse of airway tissue that causes OSA and snoring. In cases of mild-moderate OSA, the MAS is often an effective alternative to CPAP. However, in cases of moderate-severe OSA, the MAS is far less effective and patients will often still experience a mild-moderate amount of apnoea events, even when the MAS is fitted properly

Surgery

Upper airway surgery is available to patients with mild-moderate OSA who cannot tolerate CPAP or other medical management of OSA. Surgery of the upper airway involves removal of excess tissue at the back of the mouth and throat. This may include removal of tonsils and/or adenoids. Another type of surgery, Radio Frequency Tissue Ablation (RFTA) shrinks the size of the tongue and/or palate. Multiple procedures may be required and surgical intervention of OSA typically includes a long recovery period.

Surgery is only appropriate for patients with tissue obstruction in the airway. Surgery is not significantly successful in patients who have OSA due to obesity and other reasons. Additionally, surgical improvements in OSA are limited and typically diminish over time.

Potential complications with the procedure include pain, bleeding, infection, changes in the voices, a sensation of foreign body in the throat, regurgitation of food, etc. For those reasons, surgery to treat OSA is considered a second-line therapy for those who have first tried CPAP. A sleep physician can decide if surgery is an appropriate option based on sleep study results and examination of one's upper airway.

Physicians who perform surgery for OSA are most commonly otolaryngologists (ear, Nose and Throat physicians) or oral and maxillofacial surgeons.

Posture Modification

In most cases, Obstructive Sleep Apnoea (OSA) is worse when a person sleeps on their back (in the supine position). In some cases, the OSA occurs exclusively in the supine position and a person will have essentially normal breathing when sleeping laterally. For patients with mild sleep apnoea where the majority of apnoea events occur in the supine position, posture modification may be a valid treatment option.

Posture modification means avoidance of supine sleep. To achieve this, patients are recommended one of the following tactics:

1. Wearing a backpack stuffed with foam (or clothing) to bed
2. Placing a tennis ball in a sock and pinning it to the back of the night shirt

Weight Loss

Significant weight loss can decrease the severity of Obstructive Sleep Apnoea (OSA); however, it is not always a 'cure' for OSA, especially when the OSA is severe. Weight loss is certainly recommended for OSA patients who are overweight in combination with other therapies.

Often, OSA patients lose weight once their OSA is treated with CPAP or a dental appliance because energy levels are increased and patients are able to exercise more regularly.

Lifestyle Modification

Patients with Obstructive Sleep Apnoea (OSA) and is typically the only successful treatment in cases of moderate-severe OSA. Other forms of OSA treatment (Mandibular Advancement Splints, surgery, posture modification, weight loss and lifestyle modification) may be valid treatment options in mild-moderate cases of OSA.

Combinations of treatment may also be used to combat OSA and may allow for additional therapy options. For example, a person with moderate-severe OSA may lose weight to a point where his or her OSA is in the mild range and then utilize a Mandibular Advancement Splint (MAS) to treat the mild OSA.

Cost: An Introduction to CPAP

CRS Introduction to CPAP Includes	Fee due at Initial appointment
<p>Initial appointment:</p> <ul style="list-style-type: none"> - Description of Introduction to CPAP – what to expect, and how we will work with you towards treatment success - Loan CPAP system and mask – set-up and training - ‘Nap test’ to ensure you have a good first night’s sleep - Complete documentation and payment <p>Remote support by your dedicated CRS advisor</p> <ul style="list-style-type: none"> - Lots of support during your first 1-2 weeks of treatment, to ensure you gain the benefits and feel better as soon as possible. - Choose whether we call or email you with support, encouragement or for troubleshooting <p>Visits to CRS</p> <ul style="list-style-type: none"> - To resolve challenges which cannot be overcome remotely - To transition to your own system when you are successful with treatment 	<p>\$395*</p>

****Loan of CPAP system during Introduction to CPAP is subject to provision of credit card details as security.***

Sleep & Respiratory Physician Consultation Fees

Depending on your health when you started treatment, you may be called to see a Sleep Physician during your introductory period. The cost of this consultation is not included in the above table. For more information, please contact CRS on 1300 130 930

Cost of Lost Data Card

Loss of a data card from the CPAP machine incurs a replacement charge of \$20.

Public Funding: Pensioners or Healthcare card holders

If you hold a Pensioner Concession Card or Healthcare Card *and* you have severe sleep apnoea you *may* be eligible for public funding.

The cost of the CRS Introduction to CPAP is the same but the government *may* provide a machine for you once your introduction is complete. A CRS Sleep & Respiratory

Physician can submit this application on your behalf however the machine will not be provided by CRS and therefore CRS cannot control the model of machine that is provided to you.

If you are eligible for a Public Funded machine, CRS charges a rental fee of \$25 per month for CPAP machines or \$50 per month for BIPAP/ASV machines until the publicly funded machine is delivered.

Please inform CRS Staff at your 1 week review if you wish to apply for public funding so the application process can be initiated and waiting periods minimized.

Department of Veteran Affairs (DVA)

If you hold a Department of Veterans' Affairs Gold Card, you may be eligible for the DVA to cover the cost of your Introduction to CPAP. If this is the case, we will refer you to the DVA designated service provider for discussion.

Private Health Insurance

Some private health funds will reimburse a portion of the purchase cost of your new CPAP dependent upon the cover you have on your policy. Upon starting an Introduction to CPAP, it is a good idea to contact your health fund provider and enquire if you are eligible for reimbursement.

They may specify qualifying requirements (i.e.: an in-hospital study on CPAP) to support reimbursement. Please advise CRS Staff if there are any additional requirements for reimbursement so that we can assist you as required.

Central/Complex Sleep Apnea

If you have been diagnosed with central or complex sleep apnea, an extended equipment trial may be required to determine the therapy which will best alleviate the symptoms of your sleep disorder. Your CRS Technician will advise you if this is the case and review with you the options available to meet your specific needs.

The discount available to you at the end of an extended evaluation for Central/Complex Sleep Apnea if you purchase from CRS:

- If you purchase an ASV / APAP system from CRS: \$300
- If purchase a CPAP system from CRS: \$200

This discount cannot be used in conjunction with any other CRS offer. Your CRS Technician will be able to provide details of ASV systems offered for sale by CRS.

APAP System Pricing: Manufacturer's RRP

Type of machine	ResMed AirSense 10 Auto/ <u>For Her</u>	Transcend APAP	Fisher & Paykel Icon
Price	\$2,578	\$1,000	\$2,295
Removable humidifier	✓ Auto/Manual	Humidifier Optional Extra: \$350	Built in/ Manual
Weight with humidifier	1.25 kg	0.43 kg	2.2 kg
Dimensions with humidifier (LxWxH)	26 x 15 x 12 cm	15 x 8 x 7 cm	16 x 17 x 22 cm
Warranty	2 years	2 years	2 years
Pressure Type	Auto or Fixed	Auto	Auto
Pressure relief type	EPR	EZEX	Sense Awake
Adjustable ramp function	✓ Auto/Manual	✓	✓ Manual
Automatic Altitude Adjust	✓	✓	✓
Leak compensation	✓	✓	✓
Ambient temp tracking	At machine and mask	At machine	At machine
Tubing Options	Heated/slimline	Standard	Heated
Auto Adjust voltage (for travel)	✓	✓	✓
Clock and Alarm function	-	-	✓
Carrying Case	Soft case	Soft case	Soft case
Usage Data storage	365 sessions	365 sessions	365 sessions
Detailed data storage	7 sessions	7 sessions	7 sessions

*** ResMed APAP Machine Pricing includes built-in wireless connectivity.**
****These prices do not include the mask. Mask prices range from \$245-\$299 depending on your mask**

When purchasing a machine, the following discounts off RRP will apply:

Order before the end of Week 2 of your CRS Introduction to PAP: \$300 discount

Order before the end of Week 4 of your CRS Introduction to PAP: \$200 discount

CPAP System Pricing: Manufacturer's RRP

Type of machine	ResMed AirSense 10 Elite	Transcend CPAP	Fisher & Paykel Premo
Price	\$1,678	\$800	\$1,495
Removable humidifier	✓ Auto/Manual	Humidifier Optional Extra: \$350	Built in/ Manual
Weight with humidifier	1.25 kg	0.43 kg	2.2 kg
Dimensions with humidifier (LxWxH)	26 x 15 x 12 cm	15 x 8 x 7 cm	16 x 17 x 22 cm
Warranty	2 years	2 years	2 years
Pressure Type	Fixed	Fixed	Fixed
Pressure relief type	EPR	EZEX	Sense Awake
Adjustable ramp function	✓ Auto/Manual	✓	✓ Manual
Automatic Altitude Adjust	✓	✓	✓
Leak compensation	✓	✓	✓
Ambient temp tracking	At machine and mask	At machine	At machine
Tubing Options	Heated/slimline	Standard	Heated
Auto Adjust voltage (for travel)	✓	✓	✓
Clock and Alarm function	-	-	✓
Carrying Case	Soft case	Soft case	Soft case
Usage Data storage	365 sessions	365 sessions	365 sessions
Detailed data storage	7 sessions	7 sessions	7 sessions

*** ResMed CPAP Machine Pricing includes built-in wireless connectivity.**
****These prices do not include the mask. Mask prices range from \$245-\$299 depending on your mask**

When purchasing a machine, the following discounts off RRP will apply:

Order before the end of Week 2 of your CRS Introduction to PAP: \$200 discount

Order before the end of Week 4 of your CRS Introduction to PAP: \$150 discount

CPAP System and Equipment rental

If upon completion of the Introduction to CPAP you still aren't sure if you are ready to purchase CPAP equipment, you have the option to rent the equipment from CRS.

Short-term CPAP System rental: \$65 per week

Includes one of any type of machine and one mask, subject to availability. Includes extended evaluation of the 'Introduction to CPAP' system if you are a Central / Complex Sleep Apnea patient.

If you need an 'ASV' machine for your extended evaluation as a Central / Complex Sleep Apnea patient, this could be loaned to you, at this same cost, in exchange for your 'Introduction to CPAP' system. Please ask your CRS Technician for more information about this option.

If you are eligible for a Public Funded machine, CRS charges a rental fee of \$25 per month for CPAP machines or \$50 per month for BIPAP/ASV machines until the publicly funded machine is delivered.

Minimum monthly follow-ups with a CPAP technician are required with all short-term rental arrangements.

Long-term Equipment rental: \$25 per week

If you choose to rent on an ongoing basis rather than purchase, you will need to swap to a machine from our long-term rental pool. You will also need to purchase your own mask. There is no requirement to attend appointments outside our normal follow up visits at 6 months and annually thereafter.

For an extended evaluation, you may decide to transition to this arrangement and system in exchange for your 'Introduction to CPAP' system if you are a Central / Complex Sleep Apnea patient.

Customer support package

When purchasing equipment from CRS, you are awarded with a lifetime customer support package which gives you continuous free access to our CPAP services to ensure the success of your treatment. If you have any problems, concerns, or questions please call us to make a free of charge appointment with one of our experienced technicians.

Additional CPAP Services

If you choose not begin your CPAP treatment with CRS, we offer a number of services to ensure that you are getting the most out of your treatment.

CPAP consultation \$110.00

This is a 30 minute appointment with a CPAP technician. At this appointment we will download your CPAP data to ensure that your prescription is adequately fixing your apnoea, check your mask and machine for faults and address any additional issues you may be having.

Machine service \$110.00

This is a 30 minute appointment with a CPAP technician. At this appointment we will download your CPAP data to ensure that your prescription is adequately fixing your apnoea, check the integrity of your mask, check the machine pressure, replace your filter and make any recommendations as to changes that may be required.

Mask trial \$110.00

This is a 30 minute appointment with a CPAP technician. This appointment includes various CPAP mask fittings, instruction and education. You will then have the opportunity to trial a new CPAP mask for \$25 per week.

The rental paid on masks is non-refundable however the amount paid is credited to the price of the mask if you purchase. If you do not purchase, no refund will be given.

Specialist consultation Varies depending on Physician

This is a 30-45 minute appointment with a Sleep and Respiratory physician. If symptoms are persisting despite treatment or you are dissatisfied with your current treatment modality you may want to consider a consultation to investigate the possibility of concurrent sleep disorders and/or other treatment options. A current G.P. referral is required to utilise this service.

Benefits of your CRS Relationship

You are our priority

- Cardio Respiratory Sleep is an independent medical practice, focused on delivering to you the highest quality standards of patient care.
- This commitment includes Sleep and Respiratory consultations, testing, diagnosis, supply of your sleep therapy solution and ongoing troubleshooting and support
- If your sleep study was conducted by Cardio Respiratory Sleep, your CRS Technician can see your results and confirm to you the benefits you have already received during your CRS Introduction to CPAP.

You choose

- Unlike some other CPAP system providers, Cardio Respiratory Sleep offers a range of flow generators, masks and accessories from different manufacturers.
- We tailor a solution that meets your specific therapy, comfort and financial needs.

We are here for you

- When you purchase your system from CRS, enjoy free-of-charge CPAP reviews for life, with the people who understand your health history, treatment and are trained to do what's best for you.

Masks and Accessories

- A comprehensive range of masks and accessories are available from leading suppliers through Cardio Respiratory Sleep
- Discuss your needs with your CRS Technician and they will be happy to help you decide which products you need to meet your therapy, financial and comfort requirements

Product Training

- Your CRS Technician will help you translate your prescription into a solution which suits you personally
- Our supply service includes the provision of instructions on how to make the most of your CPAP system
- You will test your system before you leave us to ensure it is comfortable and delivers the care you require
- Our commitment is to work with you to ensure you leave our premises with a solution which works for you in your home environment

Questions when you get home?

- Cardio Respiratory Sleep is here for you - call us on 1300 130 930