

Obstructive Sleep apnea

Information about CPAP therapy



How to reach us

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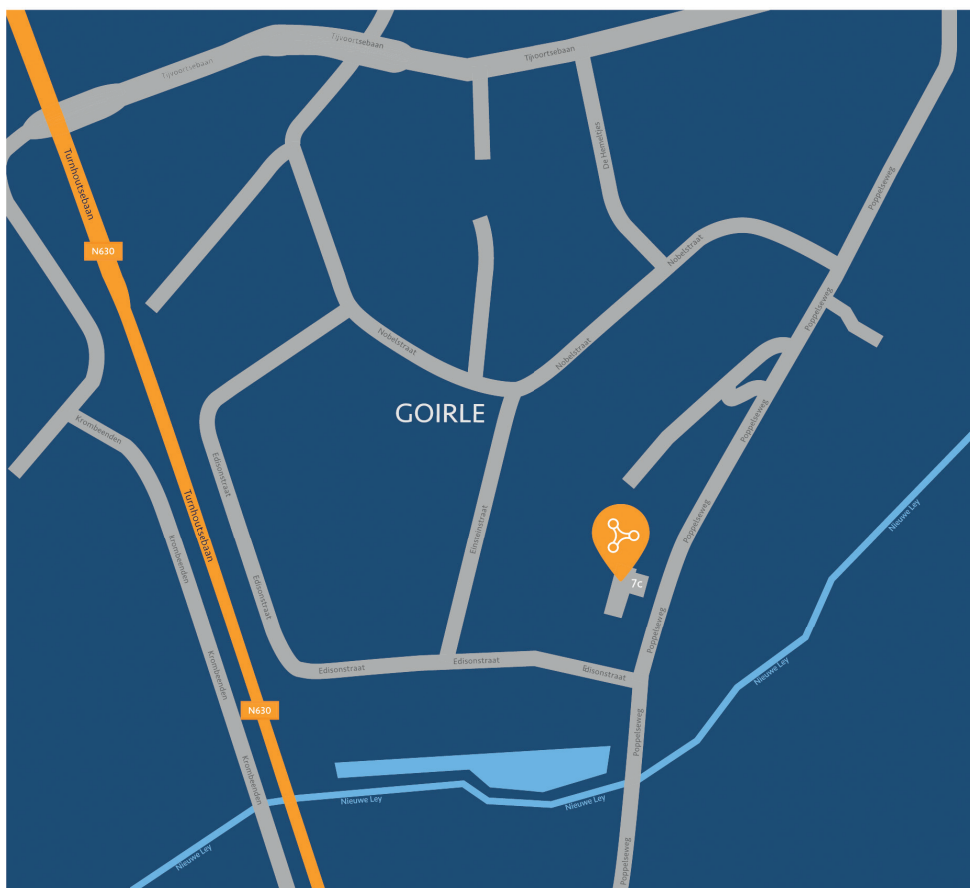
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Making an appointment

Tel. 013 531 35 35

Available on weekdays from 08:30 to 17:00.



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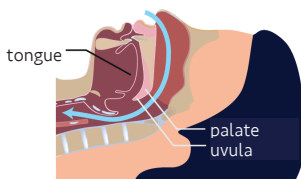
What is sleep apnea?

Sleep apnea is a relatively common condition that causes the walls of the throat to relax and narrow during sleep, interrupting a normal breathing pattern. When more than five breathing pauses occur per hour, with a duration of at least 10 seconds each, the saturation level of oxygen in the blood could drop below a critical level which in turn can be harmful to the body. A drop in the oxygen levels in the blood and tissue causes your brain to send your body a signal to wake up. This sudden awakening, or arousal, often leads to a shock or loud snore. By waking up, the narrowing of the airways get resolved and the breathing cycle is restored until another stop occurs and the pattern repeats itself.

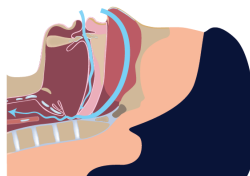
The disorder in which there is an obstruction in the airways during sleep is called Obstructive Sleep Apnea (OSA). When other side effects occur we speak of Obstructive Sleep Apnea Syndrome (OSAS).

OSA can be divided into the following categories based on the number of breathing stops (AHI):

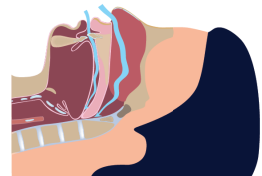
- *Mild OSA 5 - 15 AHI*
- *Moderate OSA 15 - 30 AHI*
- *Severe OSA > 30*



regular breathing



snoring



obstructive apnea

Breathing stops can also occur when the brain does not send proper signals to the respiratory muscles that control breathing. When this happens we speak of Central Sleep Apnea (CSA). When other side effects occur we speak of Central Sleep Apnea Syndrome (CSAS). The apnea in this case is caused by a disturbance between the respiratory centre in the brain and the respiratory muscles. There are no obstructions in the airways. The brain is simply not giving the body a signal to breathe. CSA always occurs in combination with OSA, which we call mixed apnea. This booklet will focus on OSA.



Causes

During sleep the muscles relax, including those in the throat. This may cause the soft tissue of the tongue, palate and uvula to sink backwards into the throat, causing the airways to close or narrow. This narrowing can also be influenced by the following factors:

Anatomy

A short neck or a backwards jaw posture can cause a smaller diameter of the upper airways. An enlarged uvula, tongue or enlarged tonsils may also cause this narrowing. The muscles relaxing during sleep may be sufficient to partially or fully obstruct the airways. This is often hereditary.

Overweight

There is a clear link between overweight and OSA. Overweight often causes an increase of fat tissue around the airways. This can lead to a narrowing of the airways which ultimately leads to snoring or apneas. A weight reduction of 10% can lead to an average decrease of 30% of the number of apnea. Striving towards a healthy weight is therefore considered extremely important.

Alcohol and medicines

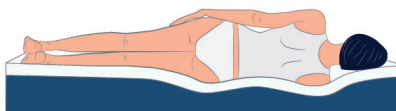
Certain medication, like antidepressants, and alcohol have a relaxing effect on the airways. When consuming alcohol the awakening reflex and the respiratory centre in the brain are also suppressed. Just a single alcoholic beverage can mean the difference between snoring and mild OSA. The more alcohol one consumes, the greater the chance of experiencing apnea.

Smoking

As a result of smoking, the mucous membranes in the airways swell, causing snoring and apnea to worsen.

Sleeping position

A supine sleeping position (laying on your back) compared to a lateral position (laying on your side) increases the risk of snoring and apnea, because the tongue and soft tissues can sink backwards more easily, blocking the throat and airways.



Symptoms

OSA is often not immediately recognized or diagnosed as many symptoms also occur as a result of other conditions. Apnea disrupts the sleep pattern, causing the quality of sleep to deteriorate. OSA patients will often wake up feeling tired in the morning. The body and mind have not been able to sufficiently recover during the night.

Symptoms during the night

- Snoring
- Breathing stops
- Waking up with feelings of suffocation
- Regular visits to the toilet
- (excessive) sweating
- Dry mouth when waking up
- Dreams and nightmares
- Palpitations

Symptoms during the day

- Sleepiness
- Headaches
- Forgetfulness
- Trouble concentrating
- Memory loss
- Moodswings, irritation
- Irregular menstruation
- Reduced libido / impotence

Effects

Not treating OSA leads to severe health issues. A healthy sleep cycle is necessary for the vital organs to function properly. Persistent nocturnal oxygen deficiency can damage vital organs like the heart and brain. It also increases the risk of cardiovascular diseases. Untreated OSA increases the risk of:

- Cardiac arrhythmia
- Problems with the coronary artery
- High blood pressure
- Heart attacks
- Cerebral infarction / strokes

Another consequence is an increased risk of accidents at home, at work and in traffic. People with untreated OSA are involved in road accidents up to 6 times more often than others.

Due to the above risks and the daily effects it is necessary that OSA gets treated. The aim of the treatment is a decrease in side effects and risks, due to a decrease in the number of apnea. The effect of the treatment is sometimes immediately noticeable. In other cases it can take several weeks to months.

General measures

The aim of the treatment is to reduce the number of apnea and the risks they pose. It is strongly recommended to take some general measures that may decrease any complaints and can in some cases of mild OSA mitigate the need for treatment completely.

Weight loss

As there is a clear link between OSA and overweight due to an increase in fat tissue, a decrease in weight can already improve the quality of sleep.

Alcohol

It is recommended to not consume more than two alcoholic beverages per day and to not consume any alcohol within four hours before going to bed. Although it seems as if alcohol can make us fall asleep more easily, it actually decreases the quality of sleep.

Medicines

Certain medicines have a numbing effect on the muscles. Try to avoid or limit the intake of morphine, sedatives and sleeping pills. Consult a medical specialist about the use of medication in combination with the treatment.

Sleep habits

Make sure you follow a regular sleeping pattern, even on weekends. Make sure you sleep 7 to 8 hours a night. Try not to sleep much longer than 8 hours. A quiet, cool and dark bedroom promotes the quality of your sleep.

Nutrition and movement

A healthy diet and exercising during the day promotes healthy sleep. Sports and eating in the hours before bedtime is not recommended so that the body can rest.

Smoking

Smoking causes the mucous membranes in the airways to swell. Smoking is therefore not recommended.



Treatment

CPAP

CPAP is a very effective treatment for people who are diagnosed with moderate to severe OSA. The abbreviation CPAP stands for Continuous Positive Airway Pressure. The CPAP continually blows air into the airways through a nasal and/or mouth mask. This keeps the airways open which helps the apnea disappear. Because of the reduction of apnea the quality of sleep improves. The CPAP device does not provide extra oxygen, it simply produces an increased airflow. The device tracks the usage, the number of apnea and leakage. This data will be used to generate a report.

Trial

The CPAP device is installed during the first appointment with your supplier. This is called titration. The amount of air pressure required to prevent or reduce apnea varies from person to person. During consultation with a medical specialist and an OSA consultant, it is determined whether a fixed or variable pressure is necessary. Conditions such as COPD, heart failure, severe obesity and CSAS can affect the required air pressure. The CPAP treatment starts with a trial. During this period we will check whether you have the right device, the correct pressure setting and the right

mask. The AHI (Apnea Hypopnea Index), severity of any symptoms and the adherence to therapy determine whether the therapy is effective. A patient is considered compliant with the therapy when the device is being used for at least 5 out of 7 nights for a minimum duration of 4 to 6 hours.

During the trial there will be a regular check-up with the pulmonologist or the OSA consultant. Because of these regular check-ups we are able to solve problems quickly whenever they occur. During these check-ups we will generate a report from the data the device has collected during your sleep. After an effective trial period, the doctor will authorize the trial placement and the placement becomes final. This means that the CPAP device can be declared through your health insurance.

Check-up

After a successful placement we will perform an annual check-up, which can take place remotely or at the hospital. Nearly every insurance company requires the supplier to carry out a check-up on the CPAP device at least once a year. During the check-up, we will check the data of the device to measure the AHI and compliance. The report that is generated will then be shared with your medical specialist if necessary.

The mask

You will receive a mask which we will try to adjust until it fits comfortably. It is important that the mask is not too loose as this can cause leakage, but also not too tight since this might cause painful pressure spots. During sleep the facial muscles relax and the sleeping position changes regularly. During the night's rest it may be necessary for the mask to be adjusted.

How to adjust your mask properly?

- *Make sure the silicone insert faces the right way up and is placed straight on the face.*
- *When setting up the headgear, ensure that the ears remain free (two bands above and two bands below the ears).*
- *When you are adjusting the head straps, make sure to adjust them at the same time to ensure the mask will remain aligned properly to the face.*

Side effects

The continuous flow of air used in CPAP therapy may cause a few side effects. These include:

- *Stuffed nose*
- *Runny nose*
- *Sneezing*
- *Painful spots on the nose*
- *Scabs in the nose*
- *Dry throat / mouth*
- *Nosebleeds*
- *Sleeping with an open mouth*

Humidifier

If any of the effects mentioned above occur frequently, a humidifier might offer a solution. A humidifier can both heat and humidify the air. This can decrease multiple side effects of CPAP therapy.

Cleaning schedule

	daily	weekly	monthly	quarterly	half year
<i>Mask</i>					
soft parts	dishwashing liquid				
solid parts		dishwashing liquid			
headgear			hand wash		
hose		dishwashing liquid + water			
humidifier	change water	descale			
<i>filters</i>					
Resmed		shake out			change
Dreamstation (dark blue)		shake out			change
Dreamstation (light blue)		shake out		change	
Devilbiss (black)		shake out			change
Devilbiss (white)		shake out		change	

Cleaning and maintenance

The CPAP device is loaned to you. Therefore it is important to treat the device with care. The following cleaning instructions are recommended.

Mask

Silicone parts that come into contact with the skin should be cleaned daily using warm water. Use a detergent without citrus extracts to keep the products free of grease. Rinse the solid parts once per week using warm water and a detergent.

Foam parts should only be cleaned using a soft, damp cloth. Avoid using water as this can cause the foam to lose its shape.

Handwash the headgear with a laundry detergent. To increase longevity we recommend to keep the velcro closed.

Hose

Clean the hose weekly using warm water and a detergent. Make sure to rinse it well using lukewarm water and hang it out to dry.

Filters

The coarse filter can be cleaned every week by rinsing it with water. Make sure to let the filter dry on a paper towel before reusing it. The particulate filter should be replaced every three months. These filters cannot be cleaned.

Humidifier

Change the water in the container every before using the humidifier. We advise you to use boiled, purified or distilled water. Make sure to descale the humidifying chamber every month with cleaning vinegar diluted with water.

Traveling with CPAP

Traveling with a CPAP device doesn't have to be a problem. The device can be transported easily using the included bag. When traveling by plane it is important to carry the device as a part of your hand luggage and should not be transported in the hold of the plane.

Power supply

Most CPAP equipment is suitable for all AC power supplies and automatically switches between 110 and 220 Volt AC. The use of a universal plug is sufficient in most cases.

Car of camper

If no AC power is available, the CPAP device can be used on DC current using an inverter (12 volt plug). When using a 12 or 24 volt plug, the humidifier cannot be used. Consult the operating instructions of your device and / or your supplier about the possibilities.

High altitude

Whenever you are staying at a high altitude the settings of your CPAP device should be changed manually. Most devices will change their settings automatically at altitudes up to 2400 meters above sea level. Please consult the operating instructions of your device or contact your supplier.

Malfunctions while abroad

If you experience any problems with your device while abroad you may always contact our customer support. Together we will try to find a solution to your problem. When additional items have to be shipped abroad, the shipping costs will be yours. Total Care can not be held responsible for shipping times as we are dependent on third parties.

Customs declaration

You need to carry your CPAP device as hand luggage. When traveling abroad, you have to be able to show a customs declaration. The declaration states that you are carrying medical equipment so you can pass without any problems. The customs declaration can be requested from Total Care.

Travel insurance

We would like to advise you to get a travel insurance which covers the value of the device. The value of each CPAP device is approximately €1500,-. Since terms and conditions may vary between different insurance companies, please contact your insurance provider for further information.

Availability

Our team at Total Care are here to answer all your questions or solve your problems. We are available from Monday to Friday from 8.30 to 17.00 at (+31) 013-5313535. In case of emergency we are available 24/7. The same telephone number may be used. There is also a possibility to ask us questions via our website or via email at info@totalcaregroep.nl





Important information

Supplier's property

You will receive the equipment and accessories on loan, which means that the equipment and accessories remain the property of the supplier. As a user you are responsible for any damage to the equipment such as smoke, fall and water damage. All costs will be charged to you in these cases. This is included in the loan agreement that you have signed.

Compensation

Once a year your insurance will cover one new mask, a new hose and a new set of filters. Total Care recommends keeping your old hose as a backup. Whenever a part is broken or damaged this means that you can replace it with a spare part until we find a fitting solution. The agreements made with the health insurer determine whether you are eligible for a new CPAP device. Total Care assesses whether someone is entitled to a new CPAP device, based on the agreements made with the health insurer and the current state of the device. The agreements of the health insurance are leading.

Compliance

Your own health insurance largely determines your treatment and reimbursement. Binding agreements have been made between the health insurer and Total Care, meaning that the choice of a specific type of CPAP device is not always possible. CPAP therapy is reimbursed from the basic health insurance. Health insurers do set additional requirements, for example compliance. We speak of compliant to therapy if the CPAP therapy is applied for at least four hours per night on an average of five days a week. If this does not happen, according to the agreements made with the health insurer the reimbursement may be halted.

Frequently asked questions

Do I have to use my device every day?

The answer to this question is rather simple, yes; you should use the device every single night. If you do not sleep with the CPAP device, the breathing stops will return. In the majority of cases, OSAS cannot be cured. The daily use of the CPAP equipment reduces the symptoms. In addition effects like cardiovascular diseases and cerebral infarctions can be prevented.

What side effects may occur with the use of CPAP?

The most common side effects are caused by the mask. Examples include pressure spots on the nose, irritated eyes due to air leakage and a dry mouth. Most side effects can be solved with the right mask adjustments or through the use of a humidifier.

How long will it take until i notice improvements?

It varies from person to person how quickly a reduction in complaints or symptoms is experienced. Some people immediately notice an improvement. For others, especially those who suffer from other conditions as well, it can take a couple of months or improvements might barely be noticeable.

I suffer from a dry mouth

The humidifier can provide a solution for complaints of a dry mouth. If the humidifier is already being used, we advise to increase the humidifier settings. In addition, a dry mouth can occur because your mouth opens during the night. If this is the case, we advise you to contact your medical specialist. The pressure of your CPAP can then be discussed and/or the position of the humidifier. If this doesn't work, the addition of a heated hose could be a viable alternative.

I suffer from cold air and/or condensation in the hose and mask

Total Care always recommends placing the device on a lower height than your bed. This way the condensation in the hose will flow back towards the device instead of towards your mask. If you feel like the air in the hose is too cold, it is advised to increase the temperature of the humidifier. If there is a lot of condensation in the hose, the setting of the humidifier can be lowered. If problems persist, a heated hose can provide a solution.

Do i have to take my device with me when I'm hospitalized?

In case of a hospital admission, you should always take your CPAP to the hospital. Always consult with the treating physician whether you can continue your therapy.

Does health insurance compensate the heated hose?

The heated hose helps to prevent condensation and a dry mouth because it is able to regulate the temperature better. Unfortunately health insurance does not cover the heated tube which means the costs are for your own account.

I suffer from skin irritation from the mask?

Skin irritations or pressure marks (decubitus) may develop through the use of the mask. You can reduce the pressure points by making adjustments to the mask or using Sudocrem or Calendula ointment.

Are breathing stops dangerous?

Everybody experiences breathing stops during the night from time to time. The frequency and length of the breathing stop determines if the stops pose a risk to your health. When five or more breathing stops occur within an hour, with each stop lasting at least ten seconds, it should be treated by the medical specialists. Those breathing stops are often accompanied by fatigue symptoms.



Since using the equipment, I suffer from headaches during the day.

By using the CPAP device the oxygen level in your blood is increased and restored. This can cause temporary headaches at the beginning of the therapy. The headaches will disappear within a few weeks. If the headaches do not disappear over time it, we recommend contacting your medical specialist.

My address and / or insurance details have changed, should I inform Total Care?

It is important to inform us when any personal information changes. You can do this by email or telephone.

Who is responsible for the costs of damaged or stolen equipment?

Total Care ensures that you quickly receive a replacement device. You will receive the invoice of the residual value of the damaged or stolen device. This can be found in the loan agreement signed by you.

When am I eligible to receive a new device?

When a device can be replaced varies per insurance company. Total Care decides the status of your device during the appointment. If your health insurer has a rental contract with Total Care, you will always receive a replacement device from the supplier's depot in the event of a malfunction.

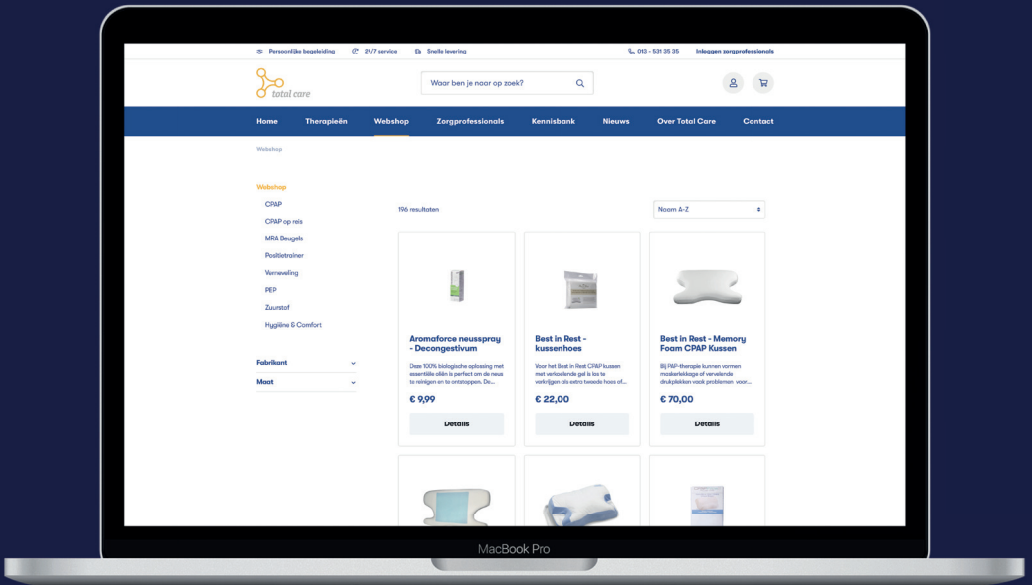
Does my health insurance compensate the 12 or 24 Volt plug?

Your health insurer does not reimburse the 12 and 24 Volt plugs. The costs for these plugs are for your own account. The plug can be ordered through our webshop at www.totalcaregroep.nl or by telephone at 013 - 531 35 35.



**For more frequently asked questions
please refer to our website.**





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We think in solutions

Find more at www.totalcaregroep.nl