



FROM THE EDITOR

Welcome to the first issue of **Snooze Newz**, a newsletter produced by ResMed, global innovators in sleep and respiratory medicine.

Every six months, **Snooze Newz** will bring you the latest information from the world of SDB*—interviews with leaders in the field, articles on topics of current interest, suggestions for a healthy lifestyle, tips on how to get "sleep-smart," discussions on issues related to SDB and useful facts and figures.

In this, our first edition, we are delighted to present an interview with Dr. Michael Berthon-Jones, a leading medical expert and researcher who was closely involved in the development of the first automatic device to treat obstructive sleep apnea (OSA). Another story looks at the role of humidification in your treatment. We also shed light on "flow limitation" a less-talked-about, yet very important aspect in treating OSA.

You will also discover some practical tips in **Snooze Newz**. Special features focus on using your CPAP device during air travel and on how sleep disorders can cause fatigue, which has serious consequences for those drivers.

In coming issues we plan to feature stories on the association between SDB and high blood pressure, congestive heart failure & stroke, which are all areas of increasing concern. We will also continue gathering a range of contributions from our international colleagues to help keep you in touch with what's going on around the world.

As we aim to keep you informed and up to date, we hope you find **Snooze Newz** a valuable resource to help you sleep better and live healthily! For more information please visit our website www.resmed.com.

Lisa MacKenzie

International Clinical Application Specialist

SNOOZE NEWZ^{zzzzzz}

A newsletter for people with sleep-disordered breathing and their families

SLEEPING AT THE WHEEL COULD SLOW YOU DOWN FOREVER...

Across the globe, there is increasing concern over the incidence of road accidents associated with driver sleepiness and fatigue. Research reveals that drivers who frequently experience sleepiness need to be checked for sleep-disordered breathing (SDB)*. Conversely, SDB patients need to be extremely careful when driving. This applies to all categories of drivers and especially to people whose profession demands a lot of driving.

A WAKE-UP CALL FOR THOSE ON THE ROAD...

The Facts

- Fatigue is a contributing factor in up to 50% of heavy vehicle accidents in Australia, at an estimated cost of AUS\$300 million.
- SDB (of which sleep apnea is the most common disorder) is the most common sleep disorder and one of the major causes of fatigue.
- SDB affects 24% of men in the general population, with 4% of all men having significant associated fatigue. It also affects 9% of women with 2% demonstrating significant daytime sleepiness.

The Risks

- SDB sufferers have a three-fold increased risk of motor vehicle accidents.
- They are seven times more likely to have had multiple accidents.
- They are also at higher risk of hypertension, stroke, heart attacks and impotence.

Watch the clock!

- Most accidents happen in the early hours between 2am and 6am and mid-afternoon between 2pm and 4pm when the body's natural clock is at its low points.

And watch those warning signs...

- A "nodding head" and/or frequent yawning.
- The inability to keep your eyes open.
- An overwhelming feeling of tiredness or sleepiness.
- The urge for a sugar or caffeine fix.
- Loss of concentration and the feeling that the mind is "drifting off."

There are plenty of warnings. Make sure you do not ignore the feeling of extreme sleepiness that precedes falling asleep at the wheel. (...Continued)

* **Note:** SDB (sleep-disordered breathing) is the medical term to describe a variety of breathing problems such as obstructive apnea, that may occur during sleep.



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TRAVELLER'S TIPS:

DO

- ✓ On a long journey take a break every 2 hours for at least 15 minutes.
- ✓ Get out of your vehicle for a walk/exercise.
- ✓ Get some fresh air.
- ✓ Eat and drink adequately.
- ✓ Remember, the key is an "effective" break - catch a quick nap.
- ✓ If possible, take another driver along.
- ✓ Plan a stopover on very long trips.
- ✓ Get a good night's sleep, especially before a long drive.

DON'T

- ✗ Don't drink and drive.
- ✗ Don't drive if you are on any medication that might make you feel drowsy (read the instructions carefully).
- ✗ Don't drive if you have not had enough sleep.
- ✗ Remember that caffeine and energy drinks are not sleep substitutes.
- ✗ Most accidents occur between midnight and 6am when natural alertness is low.

AN ALARM-BELL FOR TRUCK DRIVERS AND PROFESSIONAL DRIVERS...

A study conducted by Dr. Mark Howard and Professor Robert Pierce is nearing completion. The study, involving a large number of sufferers investigates sleep and fatigue factors among Australian Road Transport drivers. The study of SDB in Australian road transport drivers reveals some alarming facts: 55% of drivers who participated had at least mild SDB compared to 26% of adult males in the general Australian population. This reinforces the findings of studies in America and Canada which have suggested that SDB is more common in truck drivers than the general population, up to 78% of drivers suffering from SDB.

The Australian study also showed that 7% of drivers had severe SDB, with more than 40 episodes per hour when their breathing stopped and their sleep was disrupted. These drivers had a much higher level of chronic sleepiness or fatigue than other drivers. There are several reasons for SDB being more common amongst professional drivers. Most drivers are male and SDB is more common in men than in women. The study showed that drivers are more likely to be overweight (41%) or obese (39%) and this is another risk factor. Finally, inadequate sleep is a common problem amongst drivers and can make SDB worse. 40% of drivers averaged less than six hours of sleep per day while working.

If you experience excessive daytime sleepiness, you may be suffering from SDB. A simple questionnaire, such as the Epworth Sleepiness Scale, can be used to identify drivers who are at high risk of having SDB and who would benefit from further assessment and treatment.

A complete diagnosis involves an overnight sleep study to monitor your breathing, oxygen, and sleeping patterns. This must be arranged by your doctor.

Analysis shows that the screening and treatment of SDB in professional drivers carries many benefits including significant potential savings. For those who employ professional drivers, correct diagnosis results in reduced accidents, injuries and absenteeism due to fatigue and poor judgement.

AROUND THE WORLD

SWITZERLAND

A study of sleep apnea patients concludes that those with moderate to severe sleep apnea may be exposed to a very high risk (up to fifteen fold higher than non-apneic drivers) of motor vehicle accidents.¹

SPAIN

The annual cost of traffic accidents is estimated at one to two percent of the gross national product. There is a strong association between sleep apnea and the risk of traffic accidents. One study arrived at this by observing more than a hundred drivers who received emergency treatment as a result of accidents on inter-city highways in Spain during a particular period.²

USA

An American study reveals that treating 500 patients for three years would prevent 180 serious crashes and 36 serious injuries.³ This would save about US\$ 369,000 in direct property damage and medical expenses and US\$648,000 in lost wages, legal expenses and administrative costs of insurance companies and government. The total savings to the economy would exceed one million US dollars. Another study showed that CPAP treatment could reduce accidents by a factor of five, for every 100,000 kilometers (62,137 miles) of driving.⁴ ■

¹ Hortsman et al. *Sleepiness-related Accidents in Sleep Apnea Patients*. *Sleep* 2000; Vol. 23; N° 3:383-389.

² Santos et al. *The Association between Sleep Apnea and the Risk of Traffic Accidents*. *N Engl. J Med.* 1999; 340, 11:847-851

³ Findley et al. *Serious Motor Vehicle Crashes: The Cost of Untreated Sleep Apnea*. *Thorax* 2201;56:505.

⁴ Young et al. *Sleep Disordered Breathing and Motor Vehicle Accidents in a Population-based Sample of Employed adults*. *Sleep* 1997; 20:608-13.

Acknowledgements:

Dr Mark Howard and Professor Robert Pierce "Fatigue, Sleep-Disordered Breathing and accidents".

Institute for Breathing and Sleep, Austin and Repatriation Medical Centre, Melbourne Australia.

Royal Prince Alfred Hospital, Sydney Australia.

Princess Alexandra Hospital, Brisbane Australia.

Transport Workers Union of Australia.

Loughborough Sleep Research Centre, UK.

UP, UP AND AWAY

TRAVEL TIPS WHEN YOU'RE IN THE AIR!

Common questions about using your CPAP equipment on commercial flights.

1. Can I use my flow generator on a commercial airline flight?

Not always. Make sure you check with the airline before you book your flight. Some airlines have a formal policy regarding the use of CPAP devices on aircraft. Most airlines tend to deal with requests from customers on a case-by-case basis. Airlines such as United and American have often been helpful. Qantas and Air New Zealand are active in assisting patients who wish to use a flow generator on their aircraft. British Airways' policy is that they do not allow such devices on board at all. The best advice is to check with the airline directly, before you make your travel arrangements.

2. What do I need to know when I am enquiring about a flight and booking a seat ?

In addition to your enquiry about the airline's general policy on CPAP devices, you should also remember to book a seat close to a power outlet on the aircraft. The number and availability varies from plane to plane and from airline to airline. You may also have to explain to the flight crew that your flow generator will work on the plane supply of 110 volts 400Hz, despite the rating plan on the flow generator indicating 50-60 Hz.

3. What do I need to do when I am actually travelling ?

The most important thing is to be prepared and make your arrangements well in advance.

A) **Carry a letter from your doctor certifying your need for CPAP treatment.** If an approval letter is required, ResMed's Technical Services will provide one for you (techs@resmed.com.au). Keep this letter handy when checking in, going

through security, and when boarding the aircraft. When travelling to countries where English is not the first language, you may even consider having the letter translated. (Your travel agent may be able to guide you about customs and airport security procedures at specific airports.)

B) **Use the travel case made for the device, and take it with you as cabin baggage on the plane.** This will provide better protection for the device and ensure that it arrives at the destination when you do. A letter from ResMed can be obtained to verify it is a medical device.

C) **Remember to pack an adapter to fit US style sockets.** Although your machine will work on the aircraft power socket, a US style plug is required because outlets on aircraft use the US style sockets (supply of 110 volts AC). ResMed's flow generators include switch mode power supplies that can handle any voltage ranging from 110-240 V AC, so they can be used on any aircraft. Other devices may not have a switch mode power supply so you may need to contact specific manufacturers for advice.

Note: Do not use humidifiers, like ResMed's HumidAire while on an aircraft.

4. Will the x-ray scanners at the airport security affect the device?

The x-ray scanners will not harm the device. However, security may require you to show the medical statement from your physician verifying that you are carrying medical equipment. Make sure this is handy.

5. Do I need a transformer to operate my flow generator in another country?

No. All ResMed flow generators will operate from any mains voltage anywhere in the world. All you will need is an adapter to fit the mains socket. ■



Have you...

- Checked with the airline whether they will allow you to use your CPAP machine on board the aircraft?
- Booked a seat close to a power outlet on the aircraft?
- Obtained an approval letter from your doctor certifying your need for CPAP treatment and kept it in an easy-to-access place in your hand luggage ?
- Packed your machine in the travel case specially designed for it, to take along as cabin baggage?
- Packed an adapter to fit US style sockets?

FROM THE EXPERT'S MOUTH...

AN INTERVIEW WITH DR. MICHAEL BERTHON-JONES

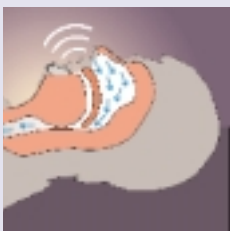
A glance at Dr. Michael Berthon-Jones' track record reveals a combination of academic brilliance, dedicated research and innovative thinking. His unique skills and knowledge have contributed to some of the most prestigious institutions and organizations in the area of respiratory medicine and CPAP devices.

In 1990, Dr. Berthon-Jones joined ResMed, where he is currently Chief Scientific Officer. He has been a key force in the evolution of "intelligent CPAP devices" popularized by ResMed as AutoSet® technology. In fact, Dr. Michael Berthon-Jones helped to invent the AutoSet® algorithm that drives these devices.

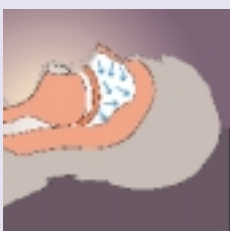
Dr Berthon-Jones has a natural gift for simplifying scientific concepts in a manner that is easy-to-understand. Here he shares insights with us on how practical problems experienced by patients inspire technology, the challenges involved, the importance of flow limitation, and other issues in the treatment of apnea.



▲ Open airway – Normal breathing



▲ Narrowed airway – Flow limitation



▲ Blocked airway – Obstructive Sleep Apnea (OSA)

What inspired the concept of an 'intelligent clinical' CPAP device?

It was Professor Colin Sullivan (inventor of nasal CPAP) who came up with the original concept of an intelligent CPAP device. He was working with a patient who was unable to get to sleep on high levels of continuous pressure. He felt the problem could be resolved by a device that would keep the pressure low until the patient was asleep, and then quickly put the pressure up until the patient was well treated.

That is where the idea was born—a CPAP machine that would increase pressure if there was snoring. I was asked to help study how well it worked at Colin's sleep laboratory at Sydney's Royal Prince Alfred Hospital and to suggest improvements.

Later we realized that an intelligent CPAP device has three uses. Firstly, it can keep the pressure low while you are

waiting to go to sleep. Secondly, it can find the right pressure for you, without having to wait (sometimes many months) for a night in a sleep laboratory where your pressure needs can be determined. Thirdly, by giving you high pressure only when you need it, you get less pressure-related side effects, such as mouth leak and a blocked nose. Some people only need high pressures when they are on their back, when they are dreaming or if they have a stuffy nose or a cold coming on.

What sort of problems did you encounter in developing it?

The biggest problem was getting a comfortably sealing mask. In those days we used to make individually customized masks at great expense. And we'd glue the mask on with a silicone adhesive. This was a very messy, time consuming, and expensive process, but it produced a superb seal.

What led you to think about developing an automatic device for home use?

That was really the goal from the outset. However, it was much easier to come up with a device that worked in the hospital only because we didn't have to worry about cost, or how big it was or how it looked. We could concentrate on making it work superbly. Over time, we came up with AutoSet T and AutoSet Spirit, the take home devices, which work very well—and are much smaller and simpler for a patient to use.

What led you to incorporate the idea of flow limitation, years ahead of its time?

The initial device was based on responding to snoring alone and it could only respond to reasonably loud snoring. This is because it had to 'hear' the snoring through the roar of the motor and the mask. That sort of approach could get the pressure reasonably close reasonably quickly, but it turned out that it was generally insufficient. We now know why. If the pressure is just enough to eliminate snoring, the airway will still narrow to the point where it is very difficult to breathe. This is called silent inspiratory airflow limitation.

So I thought here was the way to 'fine tune' an automatic CPAP machine: increase the pressure if you see apneas, or if you hear snoring, but increase it that last little bit if the airway is narrowed.

What is flow limitation and why is it important for an automatic device to respond to flow limitation, as well as snore and apnea?

Flow limitation involves a partial collapse of the upper airway and usually occurs before snoring and apnea. It is, therefore, the earliest sign that the airway may be about to collapse.

The best approach for an automatic device is to respond very quickly to loud snoring, and then fine-tune the pressure based on the narrowing of the airway. With AutoSet, actual apnea is pretty rare, because in most cases the responses to snoring and airway narrowing get the pressure up quickly enough to prevent apneas. Of course, the device will increase pressure if an apnea does occur.

What are hypopneas and why doesn't ResMed's AutoSet respond to hypopnea?

Hypopnea is a reduction in the depth of breathing, where as an apnea is a cessation of breathing. Hypopneas are "central" (controlled from the brain) - they have nothing to do with the state of the airway being obstructed. They are a normal occurrence for everyone. For example if you sigh, which you do every few minutes, you usually have a hypopnea immediately afterwards. This can also happen if you have just rolled over and are getting settled, or if you are dreaming. And the annoying thing is that when you are on CPAP, this tendency to have central hypopneas is increased. If you make an automatic CPAP device that responds to hypopneas, you will put the pressure up to the maximum pressure while the patient is awake.

Do you think there is a misconception clinically that all hypopneas should be treated?

For simple obstructive sleep apnea, central hypopneas should not be treated. They are not a disease. Again, everyone has them. And they don't go away with CPAP.

There is a rare and important exception: central hypopneas due to heart disease. This is called Cheyne-Stokes breathing. CPAP does help with that.

Why doesn't the device respond to apnea above 10 cmH₂O in pressure?

The vast majority of obstructive apneas are already well controlled by 10 cmH₂O. At higher pressures, events are more likely to be "central" in origin - that is they are controlled by the brain, rather than caused by an airway obstruction. Such central events are best left alone, (except in patients with central apneas due to heart failure).

Can you over-treat apnea?

You can't over-treat obstructive apnea. You really don't want any unresolved obstructive apneas. And we want not just to prevent apnea—we also want to keep the airway sufficiently open for you to breathe easily and regularly and stay asleep.

But in doing this, it is possible to use too much pressure, unnecessarily. The higher the pressure, the greater the side effects. Although this has never been proven, it is rather obvious - no pressure, no side effects! So you want to use the lowest pressure possible while keeping the airway nicely open.



Likewise can a device that responds to hypopnea over-treat it?

The funny thing is that devices can both over-treat and under-treat. It will put the pressure up through the roof when treating people who have lots of central hypopneas. And it can completely miss repetitive severe silent inspiratory flow limitation that is totally disturbing your sleep without there being any hypopneas. If this occurs without CPAP, it is called upper airway resistance syndrome. It is just as bad for you as obstructive sleep apnea. But a CPAP machine that responds only to hypopneas will treat your obstructive sleep apnea, and give you upper airway resistance syndrome instead. Note: Upper airway resistance syndrome is a more subtle form of OSA where the airway does not fully collapse to apnea.

How can automatic CPAP devices help optimize treatment ?

CPAP devices can gather a great deal of useful information that tells your clinician how effectively your treatment is working. Are you using the device regularly? Is there a leak, and if so, when and how much ? If it is an automatic device, what is the pressure doing? How well are you breathing ? How steadily, how much?

This might be particularly important if you suffer from heart disease, lung disease, stroke, or if you have other reasons, apart from sleep apnea, for having abnormal breathing during sleep. ■

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HUMIDIFICATION: REDUCING SIDE EFFECTS, MAKING YOUR TREATMENT MORE COMFORTABLE

The use of a humidifier is known to make treatment more comfortable for many who suffer from SDB. In normal breathing, the nasal airway itself functions as a natural humidifier, heating and humidifying the air you breathe in. However, this natural system is often unable to cope with the increased airflow during CPAP therapy.

SOME COMMON SIDE EFFECTS FROM LACK OF HUMIDIFICATION.

The increased flow of air delivered during SDB treatment can cause some side-effects in patients. In fact, research shows that 35-40% of all patients on CPAP experience certain symptoms, which may include:

- Dryness in the nose and throat
- Dry, cracked lips
- Congestion in the nose
- Nose bleeds
- Throat irritation
- Watery eyes
- Runny nose
- Flu-like symptoms



The vicious cycle—congestion and airway resistance

As a result of the additional air flowing through your upper airway, the delicate inner lining of your nose may get aggravated, causing nasal congestion. This causes increased Nasal Airway Resistance (NAR). The increased NAR makes breathing through your nose more difficult, especially when you are on CPAP. With increased airway resistance, you are more likely to try and breathe through your mouth (just as you would do, if you had a cold and a blocked nose). Due to the additional airflow delivered by the device, this will cause mouth dryness.

By breathing through your mouth, you also compromise your treatment. The device tries to compensate for air that escapes through the mouth by delivering more air. This in turn increases NAR. Thus, you get caught in a vicious cycle of increasing airflow, increasing NAR and increasing mouth leak.

However, you do not need to abandon your treatment and its accompanying benefits because of such problems.

HEATED HUMIDIFICATION—ADDRESSING THE PROBLEMS WHILE HELPING YOU WITH TREATMENT.

These symptoms and problems can be quite easily addressed. Heated humidification alleviates the symptoms and breaks the vicious cycle by providing warm, moist air, instead of the dry cold air that the device would deliver otherwise.

Humidifiers

A humidifier is a device that increases the amount of water vapor present in the air. In CPAP treatment, a humidifier increases the humidity (amount of moisture) in the air being delivered by the CPAP.

A humidifier basically consists of a water chamber or small tub that is filled with water, a heating plate, and a connector to the flow generator. Humidification technology has evolved over the years. Until a few years ago, humidifiers were seen as add-on devices. This has changed, mainly due to two factors: an increasing awareness of the importance of humidification, as well as technological progress and innovation in the design of humidifiers. We have now advanced to the "integrated humidification" era where the flow generator and humidifier interlock to form one compact device, as seen in ResMed's AutoSet Spirit™ and S7 Elite (USA only).

Humidification - optimizing your treatment

Research shows that when using heated humidification, most people find it easier to continue their treatment. It is a simple, effective way of optimizing your treatment. As a modular part of the total device, the humidifier makes things more convenient, especially when you need to travel with your system. ■

You may need a humidifier if you experience:

- Dryness in the nose and throat
- Dry, cracked lips
- Congestion in the nose
- Nose bleeds
- Throat irritation
- Watery eyes
- Runny nose
- Flu-like symptoms

FLOW LIMITATION: MONITORING & RESPONDING TO SUBTLE CHANGES IN YOUR UPPER AIRWAY

It is very common to hear about snoring and apnea. Here we turn the spotlight onto inspiratory flow limitation. This is one of the crucial "three lines of defense," along with snore and apnea, when dealing with SDB.

What is inspiratory flow limitation?

Inspiratory flow limitation is a change in the upper airway. Such change could range from subtle narrowing (flow limitation) to complete collapse of the airway (apnea). The range of upper airway change also includes snoring, which is the noisy vibration of the airway walls.

Why is inspiratory flow limitation important?

Because inspiratory flow limitation is partial closure of the upper airway as you breathe in, it usually occurs before snoring and apnea. Therefore, it is the earliest sign that the upper airway may be about to collapse.

Inspiratory flow limitation can force you to increase your breathing effort during sleep. At the same time, despite your increased efforts to breathe, the amount of airflow is still limited because the airway is partially closed. Inadequate airflow

can "wake up" your brain through the night, leading to poor sleep and tiredness.

How does your clinician observe inspiratory flow limitation?

The amount of airflow when you breathe in is graphically represented as the inspiratory flow-time-curve on sleep recording monitors. This is a very good indicator of the extent of flow limitation that is present when you breathe.

The shape of the inspiratory flow-time-curve tells your clinician about the state of your upper airway. A normal, unobstructed upper airway is observed as a bell-shaped curve. The curve flattens as flow limitation increases and as the airway narrows or closes.

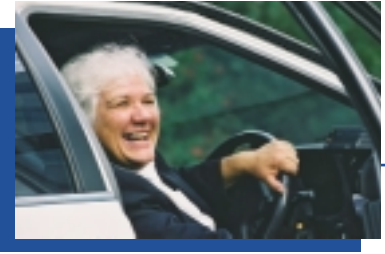
How is inspiratory flow limitation treated?

ResMed's AutoSet® technology calculates flow limitation on a breath-by-breath basis, detecting and responding to subtle changes in your upper airway.

If flow limitation is detected, AutoSet® technology responds by gradually increasing pressure to bring the airway back to normal. This can help to prevent further flow limitation or airway narrowing. It may even help prevent some snoring and apnea.

AutoSet devices continually monitor the shape of the inspiratory flow-time-curve and the status of your upper airway. As your breathing returns to normal, the curve becomes more rounded in shape and the device gently decreases the pressure towards the minimum set pressure.

Flow limitation is the first line of defense in treating SDB. ■



DALLAS CALDWELL: STAYING AWAKE ON THE JOB – A MATTER OF SURVIVAL

57 year-old Dallas Caldwell drives a cab for a living. After a few months on the AutoSet Spirit, she can already see the difference it is making to her work as well as her social life.

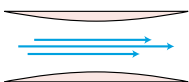
On work & driving... "I was always tired - the kind of tiredness that you don't have control over. I had to drive around the corner and get a nap for half an hour or really struggle to do the job... Sometimes I would even fall asleep at traffic lights."

It's so much better... "Now I go the whole day without a nap...the whole day! So I'm accomplishing more. You see, I work for myself...I'm interested in my business...more work and better work is my biggest advantage I believe."

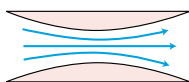
On her social life ... "I used to feel embarrassed about staying at somebody's house... But now I'm accepting invitations. I just pack up my machine and my friends all know about it... Travelling with the [AutoSet] Spirit is easy! It all fits in the bag so beautifully."

On the AutoSet Spirit... "The [AutoSet] Spirit is so much better with the air pressure. The week before I went onto the [AutoSet] Spirit, I had a very painful nose... I haven't had that sore feeling since I've been on the [AutoSet] Spirit. The machine even lets me turn over while I'm asleep!"

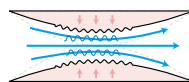
Patient's Airway



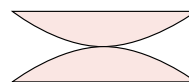
Open unrestricted airway (normal airway)



Airway narrowing (flow limitation)



Vibrating airway (snoring)



Complete airway collapse (apnea)

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HOW TO BE "SLEEP-SMART"!

Part 1: Watch what goes into your mouth

Everyone needs to be "sleep-smart" – regardless of whether or not you suffer from SDB. This is the first of a series of tips on how to get a good night's sleep. Some are pure "common sense," some are well known, tried-and-tested techniques that seem to work for many people. We hope you can adapt the relevant ones to suit your needs. Before making any major changes to your lifestyle or your daily habits, it is best to consult your physician.

Food and drink play a significant role in keeping you awake—or helping you sleep.

MAKE THE RIGHT CHOICES

Choose nutritious food such as fresh fruit and vegetables over junk foods or fast foods, especially for dinner. The right food provides healthy nutrients, assists in weight reduction and improves the overall quality of your health, which in turn helps improve the quality of your sleep.

EAT A BALANCED MEAL IN THE EVENING

Don't over-eat or under-eat—neither a full stomach nor an empty one are the best way to a restful sleep. Make sure your evening meal is balanced (not too large) so that your digestive system does not have to over-work when it should be at rest!

EAT EARLY

Give your stomach at least a few hours to digest the food before your head hits the pillow. Don't eat late into the evening.

AVOID STIMULATING DRINKS

Caffeine is a stimulant that can keep you awake. Therefore, tea, coffee, cola, even that cup of hot chocolate, can ruin the quality of your sleep. Avoid caffeinated beverages for a few hours before bedtime.

SAY "NO" TO ALCOHOL

Avoid alcoholic drinks for at least two hours before bedtime. Alcohol could have a sedating effect on your muscles, including those in the upper airway. The loss of muscle tone may lead to more snoring, and more severe events of sleep disordered breathing.

CUT OUT THE CIGARETTES

Smoking can also provide unnecessary stimulation and prevent good sleep. Don't smoke for at least two hours before bedtime. (Preferably, don't smoke at all!)

TURN AWAY FROM SPICY FOODS

Foods that are extremely spicy can aggravate the digestive system of some people, especially if you have problems with reflux. Avoiding such foods in the late evenings might help to reduce the associated symptoms of heartburn and the need to wake up in the middle of the night to take antacids.


AN IMPORTANT NOTE TO YOU, THE READER

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The triumvirate of health

"Sleep is equally important to our physical well-being as adequate nutrition and physical activity"



Proposed by Dr. William C. Dement

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