

# Snooze Newz<sup>zzz</sup>

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



## Compliance— an expert's opinion An interview with Dr. Clifford Massie

*Dr. Clifford Massie is currently Clinical Director of the Center for Sleep Health of Suburban Lung Associates, Elk Grove Village, IL. He holds a PhD in clinical psychology from the University of Miami, FL. He completed his pre-doctoral residency in clinical psychology in 1992 and 1993 at Rush-Presbyterian, St Luke's Medical Center in Chicago. Dr. Massie became a diplomate of the American Academy of Sleep Medicine in 1996. While he is widely experienced in the field of sleep disorders, he has a particular interest and expertise in the area of CPAP compliance and patient outcomes. In the following interview, Dr. Massie shares his insights into this important area.*

### Is there an industry definition of CPAP compliance?

"I don't think there is yet. In many research studies, our measure of the acceptable treatment compliance is that the CPAP device is used for more than 70% of the night. However, I don't think there is sufficient outcome data yet that would demonstrate improvements in both health outcomes and daytime functioning. There's no data available that says if you use a device on seven out of ten days that means you are compliant rather than noncompliant."

### What affects patient compliance?

"I think the important thing is to get proper educational support up front. Research has shown over and over again that if you intervene early, with simple problem-solving techniques and education, compliance to treatment is significantly improved. For example, explaining to a patient what's going to happen during treatment and how their condition can have an impact on their health.

"Things like proper mask fit are crucial. Improvements in mask design and the large variety of masks available mean patients should not be having any kind of skin irritation or excessive mask leak.

"Heated humidification should also be routine: we still have patients who come in and complain because the air is cold and dry."

### In this issue...

- ✓ Maskerade
- ✓ Compliance—some important facts
- ✓ Handy hints for air travelers
- ✓ 20 years on CPAP!  
Bob Bolger embraces life

**When you say routine, do you mean everyone you see goes on heated humidification?**

“Yes. We prescribe everyone to go on heated humidity. With integrated humidifiers and devices readily available today, it is easier and very practical from this standpoint.”

**Do information and data help support patients?**

“Absolutely! We download the data on the computer and show the patient the printout, and that helps. It’s direct feedback about what’s going on, so they can see if they are doing well or if there are problems, or variability. We find that invaluable—you are able to show efficacy of their treatment.”

**So you mean when a patient sees the download, it’s a positive reinforcement or an opportunity to explain the problems and troubleshoot?**

“Exactly!”

**Given that CPAP is not a cure, how do you motivate patients who have a mild to moderate diagnosis?**

“There are many chronic illnesses and conditions that require maintenance therapy for long periods of time, and sleep apnea falls into this area.

“People understand that high blood pressure is a serious condition, it has to do with your heart, and it can’t be too high. Now, more and more people are being educated to understand that sleep apnea is also serious. You explain that sleep apnea can have serious health consequences, such as high blood pressure, heart disease, and diabetes. It’s important not to ignore sleep apnea. If we treat it, there will be an overall beneficial impact for you. This motivates the patient to comply.”

**What data do you use to check that your patients are optimally treated?**

“The majority of patients are on a fixed CPAP device so most of the machines don’t show the apnea-hypopnea index (AHI),

just usage data. So we look at that. If a patient is sleeping for seven hours a night and the data shows mask-on time is 3.6 hours, that’s a fairly large discrepancy. The mask may have become dislodged, it may not have been replaced following a nighttime awakening, or they’re not actually getting seven hours of sleep. We want the patient to use it the entire time they are asleep.

“When patients are using automatic devices and we have access to efficacy data such as leak, AHI, pressure, etc, we look at that as well. If the leak is unacceptably high, we can identify any problems with the mask or mouth leak. If the patient has a good fitting mask, and the AHI is high, then we need to intervene. If the AHI is less than five, then therapy is working. It’s helpful to get the data in terms of AHI and mask leak. It’s also helpful to show the patient the graphics.”

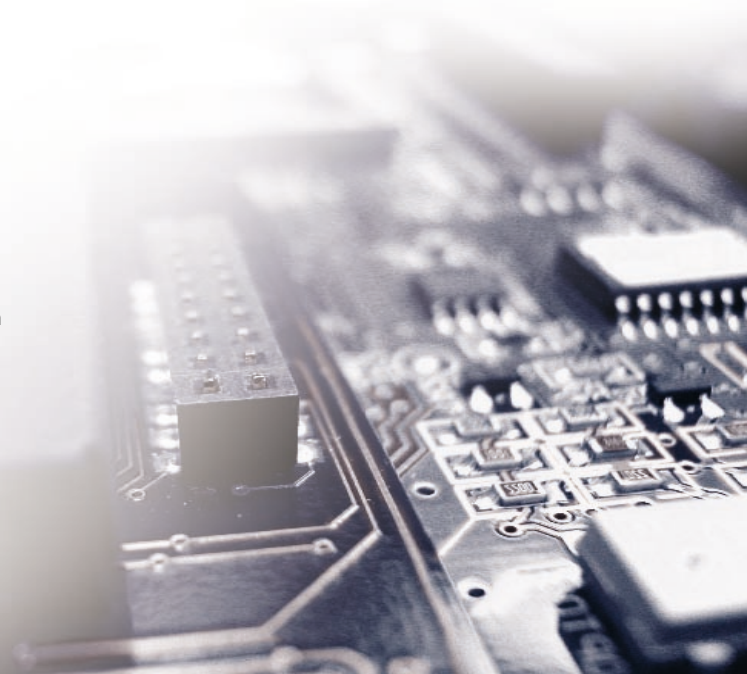
**How often do you need to maintain follow-up consultations to ensure a patient is optimally treated?**

“We bring patients in a couple of weeks after the titration study so we have a chance to address problems early on. If a patient is doing well, the follow-up interval is longer. Patients who present with problems are followed more closely.

“The idea of retesting is a good one. If there are obvious changes in risk factors (eg, weight gain) then retesting may be indicated. This would also apply if you were trying to rule out another sleep disorder.

**With current literature indicating that obstructive sleep apnea (OSA) is a cause of hypertension and has a significant role in cardiovascular problems, doesn’t this suggest that it is even more important to have patients optimally treated?**

“Yes, it is very important: it’s a natural evolution of CPAP therapy. Historically we’ve told patients that they have high blood pressure and we’ll treat it with medication. Now we tell patients that effective control of sleep apnea may help reduce blood pressure.”



# FROM THE EDITOR



Our theme for this issue of Snooze Newz is compliance. It's a pretty technical term but it has a very simple meaning for CPAP users: how often and how long are you using your treatment? We also explore how can you be sure you are using your equipment properly to get the most out of your CPAP therapy.

To find out, we spoke with an expert in the field, Dr. Clifford Massie, who gave his views on how to tell if you are complying with your treatment, the

problems with compliance, and the sorts of things that will help patients get the most out of their therapy.

We also look at some of the factors that contribute to successful use of CPAP, such as mask design, education, treatment choice, and humidification.

Our Maskerade column introduces ResMed's newest nasal interface—the Mirage Swift Nasal Pillows System an innovation that is bound to improve compliance even further:

Did you know that many airlines allow you to use your CPAP machine while flying? If you're traveling overseas for work or a holiday, you'll be interested in our air travel tips, gleaned from the experiences of a number of CPAP patients who are regular air travelers.

We always enjoy hearing about our patients' experiences. In this issue, we speak with Bob Bolger, one of Dr. Colin Sullivan's first patients, who has been benefiting from CPAP therapy for 20 years—and has certainly seen some improvements over this time! In another story with a happy ending, Peter Morgan tells us how CPAP changed his life, even after the dog had moved out to sleep on the landing!

As always we look forward to hearing your feedback. Keep in touch and be sure to visit our website at [www.resmed.com](http://www.resmed.com)



## MIRAGE SWIFT™ NASAL PILLOWS SYSTEM— A LIGHTWEIGHT ALTERNATIVE TO CONVENTIONAL MASKS

“Simple and easy to use ...”  
“Light and comfortable ...”  
“Less obtrusive on my face ...”  
“I am able to wear my glasses while I am reading ...”  
These are just some of the user comments we have received from the USA.

The verdict on ResMed's latest mask, the Mirage Swift™ Nasal Pillows System, is certainly positive! And that's not surprising because the mask was developed in response to a host of requests and feedback from CPAP patients.

As you can see, the new Mirage Swift is an uncomplicated alternative to conventional CPAP masks. However it does use some sophisticated new technology in the form of a small nasal “pillows sleeve” to deliver your CPAP therapy while you are sleeping. These nasal pillows sit at the entrance to your nose with just the tips inserted into the nostrils, forming an excellent seal.



Unlike nasal “prong” technology, which has been available for some time, the pillows do not need to be forced into the nostril, as that can create discomfort and pressure areas inside the nose.

Fitting the Mirage Swift Nasal Pillows System is quick and easy, with simplified headgear that doesn't use Velcro™ or clips, and pillow sleeves that rotate so you can get a comfortable and effective seal.

These little pillows weigh next to nothing—2½ ozs (70 gms) in fact this is one of the lightest systems around. The simplified system means reduced

contact with your face, and that adds up to a more comfortable night's sleep. The tube is flexible; its four positions allow you to move around into almost any sleeping position without dislodging the pillows.

The Mirage Swift is smaller and simpler than just about any other mask on the market. It makes less contact with the face, reducing the likelihood of red marks and skin irritation, and eliminating the chance of leakage around the eyes.

Mirage Swift is certainly practical. If you wish, you can wear glasses to read in bed and enjoy an unobstructed field of vision.

**Note: only released in the USA presently. The Mirage Swift will be released in other markets in the near future.**

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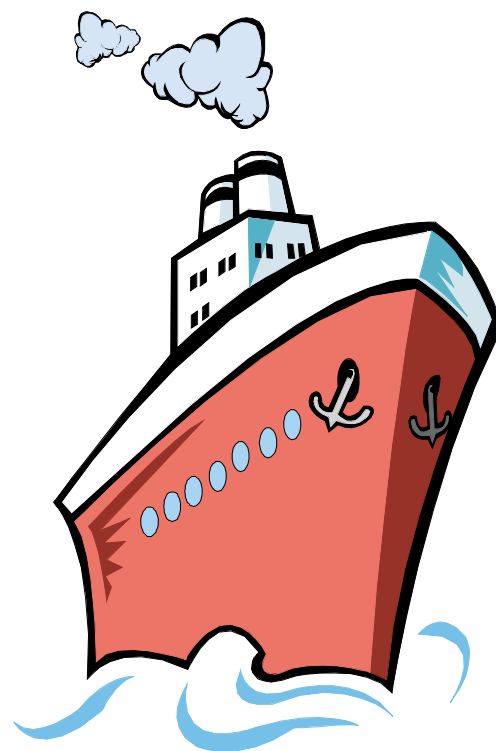
# HANDY HINTS FOR AIR TRAVELERS



Due to the increased number of requests about traveling with CPAP machines internationally, we have put together some more handy hints...

- ✓ All ResMed CPAP devices have a universal power supply so the device can be used around the world. If you are using a CPAP machine that is not from ResMed, you should check with the manufacturer to find out if the device can be used internationally.
- ✓ Check with your airline to be sure they will let you use your CPAP device while flying.
- ✓ Ask your travel agent to contact the airline with your request well in advance of the flight. You may need to provide the airline with a copy of your sleep report as evidence, or a letter from your doctor.
- ✓ When traveling economy, ask for a seat near a power outlet so that you can plug in your device. If you can sit in the first row after the exit space in the middle of the plane, you may be able to put your CPAP on the floor behind you. Alternatively, there is room to place the machine on the floor at your feet.
- ✓ When traveling business class, power outlets are typically available near the armrests at each seat, you may need a specific adapter—so ask the airline.
- ✓ If you use a humidifier, make sure it is empty when you step aboard. You can fill it in the plane's bathroom.
- ✓ In some countries, baggage is restricted on domestic flights, and airlines may classify your CPAP as one piece of baggage, even though it is medical equipment. Check the restrictions for your chosen airline well in advance.
- ✓ Make sure you use the travel bag that comes with your CPAP device, or use a good quality protective bag that your CPAP fits easily into.
- ✓ Customs officials in most countries are familiar with CPAP devices. It will need to be scanned, but this does not harm the device.
- ✓ Once you're in your hotel room, you will need an appropriate adaptor, and it's wise to carry an extension cord as well.
- ✓ Remember to take your CPAP's user instructions with you so you can change the clock in each new time zone (if necessary).
- ✓ Speak to ResMed's service team if you have any questions about what equipment you need.
- ✓ Finally, be prepared for some strange responses—one traveler we heard of was offered a wheelchair because of his special "condition!"

Happy traveling!



*Peter Morgan's background was initially in marine engineering, serving on Esso tankers in the British Merchant Navy. He established one of the foremost independent corrosion consulting groups within the UK. The group specializes in litigation and arbitration and has undertaken some significant projects.*

*Peter is a consultant for companies such as BP, Shell International, Elf, Occidental USA, and Brunei Shell. He is also actively involved in his local sleep apnea support group, WelshSAS, where he is a trustee of the society.*

"This is a story of the 15 years of pain, embarrassment, and gradual health deterioration that I suffered until a couple of real expert physicians recognized the true nature of my problem and changed my life with CPAP.

"During the late 1980s, I was made aware that my snoring was getting worse—it was so bad my wife had to ask for single beds or a separate bedroom. In the hot summer nights our bedroom window remained open and neighbors on the other side of the street started making passing comments. Even the local policeman started whistling the Beach Boys song 'Good Vibrations' every time he saw me.

# “CPAP changed my life”

## An OSA sufferer’s tale

“I then decided that I needed help, so I visited my GP who prescribed nasal sprays and other medications, which failed to have any impact on my snoring at all. Finally, he sent me to an ENT specialist who recommended that I have an uvulopalatopharyngoplasty (UPPP). This surgery involves the removal of the uvula and trimming the lower edge of the soft palate. If present, the tonsils are generally removed and the surrounding tissue is also trimmed. Naturally, there are risks involved with surgery—such as the effects of the general anesthetic on your breathing, swelling of the airway, pre and post-operative medications (which can also suppress your breathing), bleeding, and PAIN!

“I was told that the UPPP would stop my snoring, which it did for about a year. However, it gradually came back worse than before. Unbeknown to me, OSA had set in!

“More embarrassing moments started to intrude on my life again ...

“On aircraft, the snoring was so bad that people would move seats. One particular time, when I had consumed some alcohol (I was celebrating the completion of some work I was doing), I managed to empty an entire row of seats—including some in the neighboring aisle. I received some odd looks from the aircrew—I did have lots of room though. I subsequently had to warn passengers of the problem when seated next to them.

“While chairing a conference in Singapore, I fell asleep during a presentation and proceeded to snore loudly into the microphone in front of me.

“As a teacher, I fell asleep in front of the class during a short quiet reading period.

“Even the dog, which shares our bedroom, moved out to sleep on the landing.

“I was then referred to another specialist, who advised me that I needed to lose weight. Laser surgery was out of the question because the UPPP had been so radical he feared causing some damage to vital structures. I was prescribed amphetamines (better known as speed), which caused serious problems at airports when customs officers performed general searches, not to mention the side effects. I soon stopped using these.

“My condition worsened. I became irritable and would fly off the handle at a moment’s notice. I fell asleep while holding cups of hot tea. I was frequently and unfairly arguing with my wife, who has such remarkable patience. I found myself compensating for my condition by having several short naps, and reducing meetings to shorter periods, so I would make it through the day.

My health problems were becoming more pronounced. I was diagnosed with high blood pressure and placed on medication, and I experienced nocturia (increased need to urinate at night). On average, I needed to go seven to eight times a night.

“Three years ago, a suspected lymphoma of the throat was detected by a superb ENT who was simply testing my hearing. I underwent a biopsy and, to much relief, the growth turned out to be inflammatory (scar) tissue that had grown back from the UPPP. As I was returning from the operating theater, I experienced what they call a ‘crash.’ Due to undetected apneas, I experienced complications with the anesthesia so the doctors had to frantically revive me. The ENT, fortunately, recognized my

problems as possible OSA, so he referred me to his colleague, a sleep disorder specialist, for a sleep study. I checked into the sleep lab, had my usual nightcap, and then I was wired up for the night. I was diagnosed with acute (severe) OSA, and she prescribed CPAP therapy. I was promised the following:

- a good night’s sleep
- lower blood pressure
- reduced nocturia
- a more active and alert brain.

“I was then fitted out with a CPAP device and what I affectionately call my ‘Darth Vader’ mask and sent on my way.

“The effects of using CPAP, in my opinion, are miraculous. I even find the sound of gentle ‘hissing’ air relaxing and soothing, and I drift off to sleep with no problem. The first night’s sleep was absolutely perfect, it was wonderful—not one little snore. I awoke for the first time in many, many long years feeling refreshed and raring to go. I only got up once during the night to visit the restroom—simply marvelous. The only two problems were that my wife did not sleep a wink because I was too quiet, and the dog (Nell) was a little bewildered because she did not know who I was with the mask on!

“Six months later, my blood pressure has dropped, I no longer fall asleep at critical moments, I no longer suffer nocturia, and finally, my brain activity and thinking have returned to normal. CPAP has changed my life dramatically.”

*Peter G. Morgan*

# Compliance— some important facts

Recent studies of people using CPAP therapy show that approximately 85% of patients are using their equipment correctly each night of the week.

This is great news! And it's quite an improvement, given that ten years ago research revealed that only approximately 40% of people were using their equipment properly.

So what has caused this great leap forward? Experts believe one of the most important factors in encouraging people to use their equipment is an improvement in how they feel. Simply put, if your symptoms of sleepiness improve, you are more likely to continue with the treatment.

There's no doubt that equipment has improved over the years, making CPAP therapy easier and more rewarding to use. However, there are a number of other factors that have a great impact on compliance and successful use of CPAP. They are illustrated in the compliance wheel shown below.

## 1. Masks

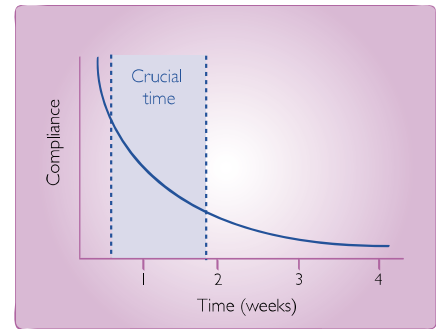
In the past, poor mask fit meant that many people gave up on CPAP therapy. However, over the last ten years the industry has made great strides in improving mask design and masks are easier to use. Masks are now significantly more comfortable and have far fewer of the earlier problems such as allergies, air leaks, and skin irritation. Advancement in the science has allowed for the development of things such as dual-wall cushions and ACT-ActiveCell™ Technology, which actually make the masks conform to the face, rather than the face having to conform to the mask, the result is significant benefits to the user.

## 2. Education

We all need education! Users need to know about their condition and their treatment so they can be involved in making decisions. Clinicians and doctors must provide support, solve problems, and help people cope. Studies show that follow-up, troubleshooting, and feedback can result in 85% CPAP compliance. Empowering people with an understanding of their condition helps to motivate them. Therefore, they are more likely to feel positive with their treatment.

## 3. Humidification

More than 40% of patients using CPAP experience nasal congestion, dry nose, and sore throat. Heated humidifiers are easy to use and reduce these problems. Further, numerous studies that have been conducted all over the world show that heated humidification greatly improves compliance and daily rate of CPAP use. Some sleep labs routinely put CPAP users onto heated humidification because of the significant improvement in CPAP tolerance.



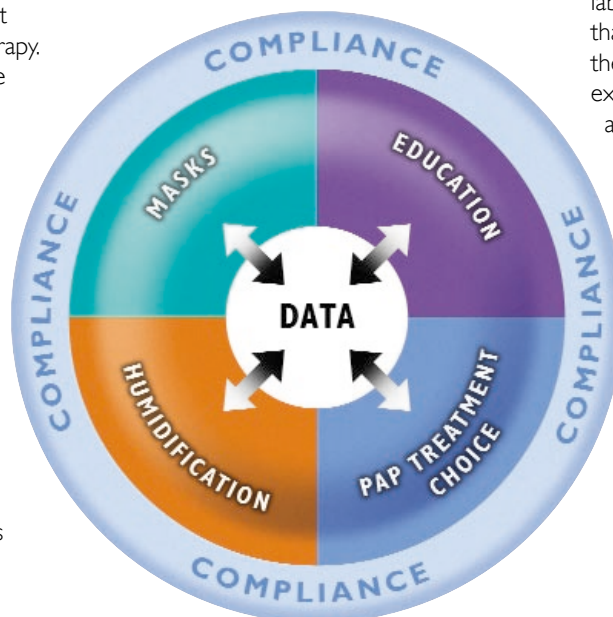
Research indicates that CPAP users are most likely to give up on CPAP treatment within the first 2 weeks. Mask, education, humidification, trouble shooting problems, and CPAP devices prevent this.

## 4. PAP (Positive Airway Pressure): Treatment choice

Over the past ten years, there have been many developments in the type of equipment available, including new treatments for patients needing higher pressures, and new fully automatic machines such as the ResMed AutoSet™ range. Patients can now choose machines that include integrated humidification, universal power supply, DC capabilities, and a comprehensive data record. Being able to choose the most appropriate treatment from a wide range of options has improved compliance.

## 5. Data

The last factor is the availability of data for downloading from CPAP machines. This is important for the physician, sleep lab or home care dealer, to help ensure that treatment is effective. It also helps them to problem solve if you are experiencing difficulties. Some devices also provide information via the LCD of the device, displaying data such as mask fit, leak, AHI, and hours of usage. Data can also take the form of feedback from the end user; for example, if you are feeling any benefits or not, if you are suffering from nasal irritation (dry sore nose or throat), or if the mask is leaking. Obtaining data feedback is important to maintaining good compliance.



Compliance wheel

# 20 YEARS ON CPAP!

## BOB BOLGER EMBRACES LIFE

Bob Bolger is a man who embraces life, food, and wine with a passion. At 72, he works almost full-time as President of the Northside Wine and Food Society, the Sydney Malt Whisky Society, and the Sherlock Holmes Society. Bob belongs to groups including Beefsteak and Burgundy, the Cheese Society, Gilly's Australia (a malt whisky group), and the Sydney Beer Club. In between all these mouth-watering activities, he travels whenever he can, indulging his particular interest in malt whisky distilleries around the world.

Bob has also been using CPAP therapy for more than 20 years—indeed, he is one of CPAP's pioneering patients!

We asked Bob about some of the changes he's seen over the past 20 years, and they have been huge.

### How was your sleep apnea diagnosed?

"Back in those days doctors didn't know much about sleep apnea. My wife, who is a nurse, read something about it in the early eighties, I had most of the risk factors—overweight, large barrel chest, short thick neck, and snoring very, very loudly—so she thought it was worth a check-up. I went to the Sleep Clinic at Sydney's Royal Prince Alfred (RPA) and saw Dr. Colin Sullivan. I just took myself along; I can't recall if I even needed a referral, but this was pretty early in the piece and plenty of people just turned up."

### When you first went along to the clinic, what sort of testing did they do?

"Blood gas tests: needles in the wrist that were particularly unpleasant! Then I had two consecutive night sleepovers in the Page Chest Clinic, one night to see how I normally slept and the next night with the monitoring equipment. When I came back, they suggested CPAP."

### What was the early equipment like?

"It took a while to get used to it. My first CPAP was a big square box, and it made a heck of a noise. We'd just added a big dressing room to our bedroom so I'd

put the blower out there and run some very long extension hoses through to the bedroom and then shut the door. Even then it was still extremely noisy and I'm sure the neighbors would have heard it.

"I had a glue-on mask, one of the very hard ones that you had to attach to your face with a silicone glue every night. It took a while and I probably cheated and didn't seal it as well as I could have. If you had a sensitive nose or skin it could get very sore during the night and you didn't get a chance for it to recover. If it got really bad you would give up for a couple of nights and take your chances. It was awful but I kept with it because I was told if I stopped breathing at night I might not be around in the morning!

"Plenty of people I met in waiting rooms at the RPA sleep clinic, cab drivers and the like, couldn't cope with it at all, and gave up.

### You must have seen a lot of changes. What made the most difference?

"The biggest improvement has been in the masks which are like chalk and cheese—there's no comparison at all.

"I'm now using a Mirage Activa™ mask, after having tried three or four different ones. This one appears to have more flexibility, as I have to sleep on my back because of back problems—it's certainly much freer in movement. The materials they make masks from now are just so much softer and retain the pressure seal so much better than earlier masks—and they don't hurt your nose.

"The equipment has constantly been upgraded—I've probably had six or seven machines since the early eighties. The machines have become quieter in the past five to ten years, which is easier for your partner. I think they put up with a lot in life. My wife used to get very little sleep because of the noise of the old machines, but she figured it was worth it."



### You've done some interesting traveling in your life. Did you carry your sleep apnea equipment around with you?

"In the early days when it was so big and bulky you couldn't, and later in the eighties I made a trip to Ireland but I didn't have a machine that had flexible power. By the end of the eighties I took the first of the machines with flexible power outlets along with various plugs and a decent extension cord so I could reach the power supply in the hotel room. I've had no difficulty traveling with it since then."

### What sort of differences has CPAP therapy made to your life?

"In the early days I don't think I felt the after-effects of sleep apnea, but maybe I was conditioned to it. I remember I used to go on trips to the Hawkesbury River for fishing weekends with friends and they always used to give me a wide berth! I did often stop and have a sleep in the car. I remember on a trip to Ireland and Scotland to see malt whisky distilleries and the like, I could only drive in the mornings because I was quite tired in the afternoons.

"I think it has been worth persevering. Throughout the centuries people have died in their sleep, millions of them around the world I'm sure. You know, you'd hear someone say 'Uncle Charlie died in his sleep'—well Uncle Charlie probably had sleep apnea. I'm involved in so many things I am keen to stay around as long as I can!"

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 Bulgaria Canada Chile Cyprus  
 Denmark Egypt Finland  
 France Germany Greece  
 Hong Kong Iceland India  
 Ireland Israel Italy Japan  
 Lebanon Malaysia Malta  
 Netherlands New  
 Zealand Norway  
 Portugal Romania Italy  
 Russia Singapore Slovenia  
 South Africa Spain Italy  
 Sweden Switzerland  
 Taiwan Japan Chile  
 Thailand Tunisia Turkey  
 United Kingdom India



# HOW TO BE “SLEEP-SMART” !

## PART 5: UNDERSTANDING SLEEP

Sleep is essential to our very survival. In fact sleep is just as essential as oxygen, food and water. In experimental work some years ago, scientists prevented rats from sleeping to determine the effect on their behavior. They observed that the rats ate more but lost weight; they behaved more energetically but couldn't maintain their body heat; they developed skin problems and a scruffy appearance, until approximately 13–21 days later they died.

### Why do we need sleep?

While we are asleep our body is carrying out essential restoration and repair work including:

- 🛡️ repairs to damaged and worn-out cells
- 🛡️ secretion of hormones such as testosterone and growth hormones
- 🛡️ energy conservation for later use
- 🛡️ organizing and storing memories/learning
- 🛡️ boosting of the immune system.

As human beings we spend about a third of our lives asleep. Scientists have identified two main types of sleep—these are identified by looking at brainwaves, eye movement, and muscle tone.

### 1. Non rapid eye movement (NREM)

We spend approximately 75% of our sleeping time in NREM sleep, which helps us rest physically and helps build up our immune system.

NREM has four stages:

- 🛡️ Stage 1 (light onset sleep) is the transition between being awake and going to sleep and lasts approximately 5–10 minutes. Breathing becomes slow and irregular and heart rate decreases. Eyes exhibit slow rolling movements and muscle tone is high.
- 🛡️ Stage 2 (true sleep) is a deeper stage of sleep. Eye movements usually disappear and muscles begin to relax, so there is very little body movement.
- 🛡️ Stage 3 and 4 (deep or slow wave sleep) are much deeper stages of sleep where the heart and respiratory rates continue to decrease, and no eye movements are detected.

### 2. Rapid eye movement (REM)

The remaining approximately 25% of sleep time is spent in REM sleep. This type of sleep is also called “dream sleep” as this is where we experience vivid, active dreams, our muscle tone is like being paralysed and, as the name suggests, eyes move rapidly around. REM sleep contributes to long-term emotional well-being, and helps improve memory.

### AN IMPORTANT NOTE TO YOU, THE READER

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