

WAKE-UP CALL

FROM THE AMERICAN SLEEP APNEA ASSOCIATION

W I N T E R 2 0 0 6

ASAA A.W.A.K.E. NETWORK NEWS

The A.W.A.K.E. network grew to encompass more than 250 groups during 2005, and new groups are always being added. To find a group near you, use our search engine at www.sleepapnea.org/awake/index.html. If you're in an area that is still unserved, and would like to establish a group there, the ASAA office can provide you with guidelines and guidance.... **The Sleep Apnea A.W.A.K.E. Support Group of Salisbury**, on Maryland's Eastern Shore, got a write-up in the local newspaper in advance of its first meeting in October.... Fifty people turned out for the first meeting of **A.W.A.K.E. at Norwalk Hospital** in Norwalk, Conn.... **Coulee Region A.W.A.K.E.**, in La Crosse, Wis., also held its first meeting in November.... The relationship between sleep apnea and cardiovascular disease, which we plan to cover in depth in a future issue of the newsletter, was discussed by numerous A.W.A.K.E. groups in recent months. According to reports received by the ASAA office, it was the featured topic at meetings of **Northwestern Pennsylvania A.W.A.K.E.** in Erie, Penn.; **St. Joseph Mercy Hospital Sleep Disorders Center A.W.A.K.E.** in Ann Arbor, Mich.; **A.W.A.K.E. in the Mid-Hudson Valley** in Kingston, N.Y.; **Safety Harbor A.W.A.K.E.** in Safety Harbor, Fla.; and **A.W.A.K.E. Across the Hudson** in Rhinebeck, N.Y.... It's an open secret that many CPAP users are ambivalent about the devices. Two groups – **Southern Kentucky A.W.A.K.E.** in Bowling Green and **Sleep Medicine Services A.W.A.K.E.** in Broomall, Penn. – delved into this love/hate relationship at their fall meetings....

A.W.A.K.E. - ALERT, WELL, AND KEEPING ENERGETIC

THE MORNING AFTER A Guide to Understanding Your Sleep Study

If you are reading this story – and it's a fairly safe bet that you are – you've probably had a sleep study. Which means that you've spent a night in a polysomnographic laboratory, hooked up to devices that generate an encyclopedic amount of information on what's going on in your brain and blood, your lungs and limbs.

Neither you — nor the doctor treating you — will view more than a minuscule fraction of this data. The sleep lab will reduce the 1,000 or so pages of material down to its essence. Depending on the lab, whether you self-referred, and how your doctor practices, you might see a paragraph, a one-page summary, or a six-page document complete with graphs. But even in a short format, there's an awful lot of information, and it can be awfully confusing.

"People do tend to get lost in the numbers," admits Dr. Rochelle Goldberg, a specialist in sleep medicine who serves as the president of the American Sleep Apnea Association. And it's not just numbers – there are all kinds of acronyms and jargon to master.

In order to help you get a better handle on these numbers and alphabet soups, and a better comprehension of what they quantify and signify, this issue of the WAKE-UP CALL is largely devoted to a guide to polysomnography. The material in this guide comes from three current and former associates of the ASAA: Dr. Richard E. Waldhorn, a professor and clinician at Georgetown

University and former association president; Dr. Goldberg; and registered polysomnographic technologist David Polaski. In addition, we drew from a report of the American Academy of Sleep Medicine Task Force, chaired by Dr. W. Ward Flemons, published in the May 1999 issue of *Sleep*.

The ASAA wishes to extend special thanks to Mr. Polaski, aka "Sleepy Dave," who as a moderator of the Sleep Apnea Support Forum (www.apneasupport.org) cheerfully fields many questions about sleep studies.

QUANTITY OF SLEEP

The first thing looked at is the Total Sleep Time (TST). This is an objective measure, based on the readings from the electrodes recording brain waves, of the amount of time you actually sleep during your study. Very often, this measurement is at odds with people's subjective perception of how much they slept. They will feel as if they hardly slept a wink, but the report indicates they were out for 6 hours. The electrodes don't lie.

SLEEP EFFICIENCY & LATENCY

The ratio between the Total Sleep Time and the Total Recording Time (TRT) is called the Sleep Efficiency. People who have significant difficulties in either initiating or maintaining sleep have diminished sleep efficiency, which can be related to various conditions and disorders, including depression. The number of minutes between the time the light is turned out and the

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AMERICAN
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ASK THE DOCTOR

Q I've heard from some people that I should stop using CPAP when I have a cold, while others have told me that the humidified air from my CPAP is good for nasal congestion. What should I do with CPAP when I am suffering from a cold?

Rich Scheer
Takoma Park, Md.

A Some patients report that using CPAP helps with nasal congestion, whether from colds or allergies. This may be due to the extra filter the air goes through or the added humidification. However, it is not recommended that you use CPAP when you are severely congested at bedtime. It would be similar to flying with a cold — the air pressure can cause the congestion to move into your ear canals. This can cause ear pain or other problems.

Kathe Henke, Ph.D.
Sleep Disorders Center
Richmond, Va.

Q I have a 9-year-old daughter who has started to wake in the night gasping for air, unable to breathe. I have taken her to the doctor three times and they think it is a medical mystery. When she awakes we sometimes pat her on the back and she will belch and then go back to sleep. She does not complain of pain. Do you think this can be related to sleep apnea?

Deborah Bowles
Essex, England

A Sleep apnea arising this suddenly would be unusual unless there is a history of snoring, or risk factors such as enlarged tonsils. The belching sounds like gastroesophageal reflux, although I would expect some indigestion. One possibility is nocturnal seizures, which may present with unusual movements. Another but fairly unlikely possibility is confusional arousal, similar to sleep terrors and sleepwalking. An overnight sleep study would certainly help to sort this out; videotaping an episode at home would also help the doctor have a better sense of these episodes.

Judith Owens, M.D.
Brown University
Providence, R.I.

WAKE-UP CALL welcomes questions from readers, and will publish them as space permits. Letters may be edited for length and clarity. We regret that it is not possible to provide personal replies to all questions.

A LETTER FROM THE EXECUTIVE DIRECTOR



BEL SANDA
ED GRANDI

I am writing this letter to you in the middle of January, the month that gets its name from the Roman god Janus, whose two faces enabled him to look both forward and back in time. It seems appropriate for me to do that as well in this issue of the WAKE-UP CALL.

In November, the ASSA board of directors held its annual meeting. During it, we acknowledged several outgoing members for their long service to the association: Dr. Safwan Badr, Joseph Duffey, and Richard Zimmerman. In special recognition of Dick Zimmerman, who served as our treasurer for many years in addition to providing us with substantial financial support, we made him a lifetime member of the ASAA.

Elections were held for the positions of officers and directors. Dave Hargett will continue as our chair. Rochelle Goldberg, M.D., will serve another year as president and chief medical officer, and Kathe Henke, Ph.D., remains as secretary. In addition, we welcome the return of George Selby, former board chair, as treasurer. The complete list of directors can be found on page 4 of the newsletter.

During November the number of registered members of the Apnea Support Forum (www.apneasupport.org) crossed the 1,000 mark, and at the time of this writing is well on its way to 2,000. The forum is a place where patients can help other patients, exchanging information and sharing strategies for coping with the challenges of treatment.

In the latter part of 2005, the ASAA exhibited at several medical conferences. Details on these activities are reported on page 4. The list of conferences we will be attending in 2006 will appear in the next issue.

At the end of the year, the Apnea Research Fund stood at just over \$5,700. Thanks to all who purchased the SLEEP – A.W.A.K.E. wristbands and all those who sent in additional donations. We still have plenty of wristbands if you would like one

for yourself or to give to someone else. We are exploring other creative ways to reach our goal of raising \$50,000 to fund sleep apnea research. Do you have an idea? Please let me know.

We began 2006 with a public awareness campaign, funded by a generous grant from the ResMed Foundation. During the first three months of the year a 30-second public service announcement (PSA) is being aired on "Health and Home Report," a television show broadcast nationally on both network and cable. If you're not able to catch it on one of your local channels, you can visit our web site for a link to the video.

The public awareness campaign culminates in Sleep Apnea Awareness Day, held this year on Thursday, March 30. As we did last year, we will try to distribute as many of our "snore score" flyers as possible. Our goal is to encourage those who may be suffering from undiagnosed sleep apnea to talk with their doctors to see if they need a sleep study. Please consider helping us get the flyers – and the word – out.

Do you know someone, or are you someone, in local government? Help us get March 30, 2006 proclaimed Sleep Apnea Awareness Day. Sample language is available on our web site.

Once again, the day will feature a lecture delivered at the Carnegie Institution in Washington, D.C. If you will be in town that day, please join us for the free event. Details are being finalized, and will be posted to our web site.

As I close my letter, I am preparing to travel to Detroit, the site of Super Bowl XL. There the ASAA is collaborating with the Living Heart Foundation in a series of health screening and educational events targeted to former NFL players and residents of inner-city Detroit. Be sure to visit the ASAA web site (www.sleepapnea.org) for photographs from that trip, updates, and new features.

Thank you for your continuing support of the American Sleep Apnea Association. ■

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person falls asleep is the Sleep Onset Latency. Normally, it takes about 15 minutes to fall asleep. A significantly shorter onset latency – the proverbial falling asleep as soon as your head hits the pillow – might seem desirable, but in fact is an indicator of sleep deprivation. This could suggest a disorder, or it could be just a sign to slow down. Regardless of the demands of work and family, and the enticements of television and the web, you need at least 7.5 hours of sleep a night.

SLEEP STAGES

Once you drop off, you should progress through four stages of increasingly deep, dreamless sleep and into a fifth stage during which dreaming – characterized by rapid eye movement – occurs. Over the course of the night, you will cycle repeatedly between Non-REM and REM sleep. The structure of these cycles – poetically known as “sleep architecture” – reveals whether you are getting the restorative sleep you need to feel and be well. Stage 1, the very lightest sleep, should only be 5% of the Total Sleep Time, and should only occur at the beginning of the night. The still fairly light Stage 2 sleep should represent about 55-60% of the TST. Deep sleep – also known as “slow wave” sleep – takes place in Stages 3 and 4, and should account for about 20% of the TST. This is the form of sleep that, as Shakespeare wrote, “knits up the raveled sleeve of care.” If it is truncated or absent, you will not feel rested the next day. Your sleep study measures the time spent in each stage, in minutes and as a percentage, and the latencies between the time you fall asleep and the time you enter Stage 4 and REM sleep, respectively.

AROUSALS & AWAKENINGS

Arousals – interruptions of sleep lasting 3 to 15 seconds – can occur spontaneously or as a result of sleep-disordered breathing (SDB) or other sleep disorders. Each arousal sends you back to a lighter stage of sleep. If the arousal last more than 15 seconds, it becomes an awakening. You are usually not aware of arousals, but may be aware of awakenings. The number of arousals and awakenings is registered in the

study, and reported as a total number and as a frequency per hour of sleep, which is referred to as an index. The higher the arousal index, the more tired you are likely to feel, though people vary in their tolerance of sleep disruptions. As few as 5 arousals per hour can make some people feel chronically sleepy. In the worst cases of SDB, the index can be 100 or more.

**So don't get too hung
up in the numbers; they're
enormously helpful, but
they don't replace words.**

RESPIRATORY PARAMETERS

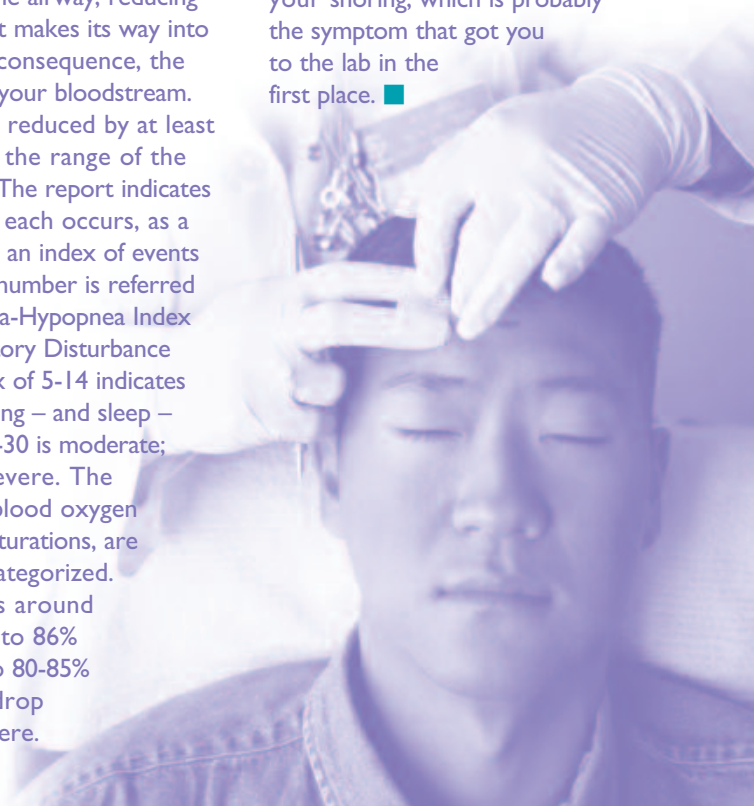
The arousals and awakenings that occur when things go awry in your breathing while you're asleep can arise from a glitch in the central nervous system – i.e., the brain “forgets” to breathe – but more commonly have a mechanical cause. (There are also “mixed” episodes, involving both elements, but these are relatively rare.) The mechanical malfunction occurs when the soft structures in the back of the throat collapse into the airway, reducing the amount of air that makes its way into your lungs and, as a consequence, the amount of oxygen in your bloodstream. In an apnea, airflow is reduced by at least 80%; in a hypopnea, the range of the reduction is 50-80%. The report indicates the number of times each occurs, as a nighttime total and as an index of events per hour. This latter number is referred to as either the Apnea-Hypopnea Index (AHI) or the Respiratory Disturbance Index (RDI). An index of 5-14 indicates a mild level of breathing – and sleep – disturbance. From 15-30 is moderate; greater than 30 is severe. The associated drops in blood oxygen levels, known as desaturations, are also measured and categorized. Normal saturation is around 95%. A desaturation to 86% is mild, a reduction to 80-85% is moderate, and a drop to 79% or less is severe.

IMPLICATIONS

These indexes, Dr. Goldberg stresses, are not fuzzy concepts, but hard data generated by easily measured electrical systems. Nevertheless, they don't tell the whole story. The severity of your sleep apnea (and what treatment you need) can't really be gauged by a machine. Your doctor will look at the numbers, but will need to put them into a clinical context. Consequently, it's vital that you track and report what you experience from day to day. Do you get sleepy while reading or watching television? That's a very mild level of impairment, and might not be cause for concern. Or are you fighting off sleep – or falling asleep — during activities such as eating, talking, walking, and driving? That's a medical emergency. So don't get too hung up in the numbers; they're enormously helpful, but they don't replace words.

ADDENDA

In addition to the items covered above, the polysomnogram looks at your heart rhythm, and determines if there are any abnormalities. Another important part of the study is the assessment of limb movement, since leg movement can constitute another sleep disorder. And yes, someone is listening to – though not measuring in decibels – your snoring, which is probably the symptom that got you to the lab in the first place. ■



Through our attendance at medical conferences, the ASAA is able to provide medical professionals with the tools to help them help their patients with sleep apnea. During the fall, we exhibited at the following conferences:

American Academy of Family Physicians (AAFP) The AAFP is made up of primary care physicians, the front-line doctors who benefit the most from our educational material. At the September conference in San Francisco, dozens of physicians stopped by our booth and picked up our patient bulletins. Many were referring patients for sleep studies and were extremely interested in the diagnosis and treatment of sleep

apnea. The 2006 conference will be held in Washington, D.C., so we hope to have an even stronger presence at that gathering.

American College of Chest Physicians (ACCP) The physicians in this group are also clinical practitioners rather than researchers. In addition to distributing materials at the ACCP conference in Montreal in October, we were able to attend several educational sessions and view "poster presentations."

American Society of Anesthesiologists (ASA) This group of doctors is keenly aware of the need to understand sleep apnea, since OSA poses a major challenge both during and after surgery. At the

conference held in Atlanta in October, the ASA House of Delegates approved practice guidelines for the management of patients with obstructive sleep apnea.

American Association for Respiratory Care (AARC) The AARC membership consists of professional respiratory therapists. They tend to be extremely interested in patient education, since many of them interact directly with patients after diagnosis. At the meeting held in December in San Antonio, we had a lot of traffic in our booth. The therapists collected copies of our newsletter and our education materials, particularly the bulletin entitled "When Things Go Wrong With CPAP."

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WINTER 2006

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