

**ACHIEVING YOUR
HEALTHY WEIGHT
&
*BREATHING RELATED
SLEEP DISORDERS***



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**Conservative Treatment for Snoring-Sleep Apnea
And Breathing Related Sleep Disorders**
General, Family and Cosmetic Dentistry

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Stamina, Exercise and Sleep Disorders

“TOO WORN OUT TO PLAY THE GAME OF LIFE?”

"Forty million Americans are chronically ill with various sleep disorders; an additional 20-30 million experience intermittent sleep-related problems. In the US, Sleep Apnea alone is the cause of excessive daytime sleepiness in almost 20 million people. Millions more are severely sleep-deprived as a result of demanding work schedules and various other life-style factors. One estimate of the cost of sleep related workplace productivity is \$150 BILLION."

--Report of the National Commission on Sleep Disorders Research submitted to the U.S. Congress and Department of Health and Human Services, April, 1993

Sleep is not optional! Sleeping less is not "macho", it's self-destructive. Sleep deprivation and poor sleep may lead to:

- *Shortened life spans and higher mortality rates.*
- *Increased risk of heart disease and stomach problems.*
- *Irritability, depression and mood swings.*
- *Being accident prone due to inattentiveness*
- *Automobile accidents.*
- *Decreased work performance and memory lapses.*
- *Marital, social and employment problems.*

Sleepy individuals simply do not have the stamina to exercise. Even the best of intentions and willpower can't overcome the lack of stamina associated with an untreated Sleep Disorder.

Approximately 50% of individuals over their "Healthy Weight" also have some degree of Breathing Related Sleep Disorder.

You can do something about this problem.

Impact on Your Health

Are you affected by daytime sleepiness? Do you often feel moody or irritable? Do you snore? You're not alone! Snoring is a major problem affecting up to 60% of middle-aged men and 40% of middle aged-women. Unfortunately these statistics increase with age, encompassing the entire Baby-Boomer population. Many spouses feel that their bed-partners snoring adversely affects their sleep, their response being jabbing their partner in the ribs or sleeping in separate bedrooms. Typically, patients complain that snoring has had a negative impact on their relationship and their marriage. Snoring occurs when the soft tissue found at the back of the throat vibrates like the sails on a sailboat. Until recently, the Medical profession for the most part has regarded snoring simply as a nuisance. However, we now know that 10% of snorers have a much more serious condition called ***Obstructive Sleep Apnea (OSA)*** which occurs when the airway collapses and breathing stops for longer than 10 seconds during sleep.

Approximately 10% of Snorers experience "***Breath-Holding***" during sleep, if these episodes lasts longer than 10 seconds, it is referred to as an Apnea. Ten or more apneas per hour of sleep is considered to be medically significant ***Obstructive Sleep Apnea***. People affected with ***OSA*** may have several hundred apnea episodes per night, each lasting 10-200 seconds. This reduces the amount of oxygen to the body and brain and disrupts the normal sleep cycle. You may have someone in your family that stops breathing temporarily while they're asleep. Typically, they awaken suddenly and with a loud gasp, only long enough to begin breathing again and then resume their snoring symphony. This scenario is repeated many times throughout the night. These short and incomplete arousals lead to "***Sleep Deprivation***".

Snoring, Sleep Apnea and the resulting Sleep Deprivation have many symptoms associated with them, some of which are life threatening. These symptoms include: ***excess daytime tiredness, morning headaches, poor concentration, depression, mood swings, high blood pressure, weight gain, heart failure, angina, and stroke.***

Over 65% of people with OSA have high blood pressure and an estimated 3,000 people die yearly in their sleep in the US from causes directly related to this condition. Excess tiredness is the 2nd most common cause for driving fatalities and a British study demonstrated that 93% of sleep apneics were at fault in one or more accidents. Overall, Sleep Disorders are responsible for an estimated \$150 Billion loss yearly in the US from auto accidents, medical bills and lost productivity.

The Slumbering Threat To Your Health and Safety

Common Breathing Related Sleep Disorders

What is Sleep Apnea?

Sleep apnea means you stop breathing while you sleep. There are two types of sleep apnea; Obstructive Sleep Apnea and Central Sleep Apnea.

What is Obstructive Sleep Apnea?

Obstructive sleep apnea is diagnosed when loud snoring is interrupted by episodes of completely obstructed breathing. During an obstructive apnea, the airway in the back of the throat collapses and prevents oxygen from entering the lungs and reaching your bloodstream. This condition can be serious and sometimes fatal if these episodes last over ten seconds and occur more than 10 times an hour. The cumulative effect of these obstructed breathing episodes is reduced blood oxygen levels to the brain, forcing the snorer to stay in a lighter sleep stage so that the breathing passage muscles are kept tighter. This prevents the snorer from obtaining the rest benefits achieved only during sleep, and can lead to a tendency to fall asleep during daytime hours - on the job, or worse, at the wheel of a Motor Vehicle.

SOME CLUES TO SLEEP APNEA:

- *Loud (or irregular) snoring.*
- *Frequent awakenings to urinate.*
- *Acid reflux during sleep, coughing, choking; inhaling acid into lungs.*
- *Muscle aches; worsening of fibromyalgia.*
- *Poor performance, impaired concentration and slowed mental functions.*
- *Irritability, mood swings memory loss and depression.*
- *Clumsiness and unexplained highway crashes or mishaps*
- *Restless sleep; 'bed torn up' upon awakening.*
- *Night sweats: which often involve the head and back of the neck.*
- *Headaches and/or dry throat on awakening.*
- *Nasal congestion.*
- *Sleepiness and abrupt lapses into sleep.*
- *Denial of sleepiness and other symptoms.*
- *High blood pressure, Obesity and Impotence.*
- *Sleep-related heart attacks and heart rhythm abnormalities.*

What is Central Sleep Apnea?

A more rare form of apnea, Central Sleep Apnea occurs when the brain fails to signal the lungs to breathe.

What are the consequences of Sleep Apnea?

The National Council on Sleep Disorders attributes 38,000 cardiovascular deaths a year to consequences of sleep apnea. The decreased levels of oxygen in the blood during sleep can cause or contribute to high blood pressure, stroke, fluid retention and abnormal heartbeats.

The daytime sleepiness and fatigue caused by sleep apnea can have severe consequences - from job impairment due to inattentiveness and sleepiness to loss of life or causing the loss of another's life from falling asleep at the wheel of a motor vehicle.

Some Alarming Facts:

Sleep apnea has been found in up to 10% of men over age 40. A workplace survey reported in 1995 found that in a sample of 1,658 Franklin County, Ohio businesses, only 5% of employees tested positive for drug abuse. Hence, a higher percentage of workers may suffer from a sleep disorder that causes dangerous workplace impairment very similar to that of substance abuse-- but which is much more readily and rapidly treatable.

Sleepiness among workers was cited as a primary factor in causation of the disasters at Chernobyl, Three Mile Island and Bhopal.

The Nuclear Regulatory Commission closed Philadelphia Electric Company's Peach Bottom nuclear plant because night shift workers were found to be sleeping repeatedly on the job. The Davis-Besse nuclear reactor in Oak Harbour, Ohio, went into shutdown at 1:35 a.m. An operator then responded by pushing two wrong buttons: thereby disabling its safety backup provisions. Nightshift worker errors were cited as factors in the automatic tripping at California's Rancho Seco nuclear reactor and subsequent failure to regain prompt control of the plant.

Marked increases in human job-related errors during the second half of night shift have been documented in studies of gas works employees, drivers, pilots and train engineers.

Eighty percent of policemen admitted to falling asleep at least once a week on night shift. An estimated 50% of night shift workers fall asleep on the job at least weekly, and 75% fight sleepiness each night shift. An estimated 20% of workers on any given night shift fall asleep.

A U.S. Bureau of Mines investigation found that shift workers have more frequent and severe individual accidents.

Night shift workers obtain 1.5-4 hours less sleep per 24-hour period than day shift workers, and their sleep is more fragmented and more physiologically abnormal: even if noise and other interruptions are eliminated.

Numerous Studies Demonstrate a

Strong Association between Sleepiness

and

Lower Productivity & Increased Healthcare Costs

Non-Breathing Related **Sleep Disorders**

Many Disorders in this Category:

- Narcolepsy
- Insomnia
- Night/Rotating Shift Work Schedules
- Restless Legs Syndrome
- Periodic Limb Movement Disorder
- Hypersomnias
- Delayed/Advanced Sleep Phase Syndrome
- Parasomnias (Rem Sleep Behavior Disorders, Sleep Terror, Sleep Walking, Bruxism, Sleep Enuresis, SIDS)

Narcolepsy:

- Excessive Daytime Sleepiness-inappropriate situations, while eating, conversing, driving
- Cataplexy-momentary loss in muscle tonus provoked by strong emotion
- Sleep Paralysis-not able to move or sleep during transition between sleep & wakefulness
- Hypnagogic Hallucinations-Vivid perceptual experiences at sleep onset
- Usually begins in late childhood
- Attack of REM sleep during the day
- As prevalent as multiple sclerosis-1 in 2000
- 80% undiagnosed
- Genetically linked
- Treatment-medication

Industrial injuries have been reported in 18.9% of inadequately or untreated narcoleptics.

Insomnia:

- 35% Occasional Insomnia
- 17% Frequent and Disruptive Insomnia
- 13 million-USA take prescribed Sleep Medication
- Impairs alertness and functioning
- Causes a 2.5-fold increased risk of motor vehicle accidents

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Causes:

- Chronic Illness / Stress
- Medication
- Caffeine and Alcohol
- Heartburn and Acid Reflux
- Eating before Bedtime
- Exercising before Bedtime
- Self Conditioning-associating bedroom with other activities
- Poor Sleep Environment-noise, light, activity
- Uncomfortable Sleep Apparel
- Inconsistent noise-white noise
- Choice of mattress
- Temperature / Humidity
- Restless Sleep Partner-spouse, pet

Night/Rotating Work Shift Schedule:

- 70% of shift workers have trouble falling asleep
- 1-2 hours less sleep / day during week & 3-4 hours less sleep / day during weekends

Symptoms:

- ulcers, gastritis and other gastrointestinal problems
- respiratory problems and increased respiratory infections
- low back pain
- headaches
- heart disease
- emotional/marital difficulties
- susceptibility to stress
- increased smoking and alcohol use
- memory lapses
- Overall decline in health

Surviving Night/Rotating Work Shift Schedule:

- Nap 2 hours prior to shift
- Phase shift changes in, rather than making abrupt changes
- Wear sunglasses home -avoid daylight delaying Sleep Cycle
- Expose yourself to full day-light spectrum bright light
- Avoid medication
- Avoid caffeine and alcohol close to bedtime
- Deal with stress
- Sleep with head slightly elevated to avoid Heartburn and Acid Reflux
- Avoid eating and exercising before Bedtime
- Associate bedroom with sleep
- Avoid or control noise, light, activity in the bedroom
- Avoid uncomfortable Sleep Apparel
- Mask inconsistent noise with consistent white noise
- Comfortable mattress
- Temperature / Humidity
- Avoid a restless Sleep Partner-spouse, pet

As recently as 12/11/95, a study of over 121,000 female nurses reported that those working irregular shifts for over six years were **up to 70% more likely to suffer heart attacks**. This finding was similar to a 1986 study that showed an 80% increased risk of cardiovascular disease in male paper mill workers on shift work when compared to those on day shifts.

Health and Health Care

“Sleep apnea occurs with greatest frequency in overweight individuals.”

SLEEP APNEA has now been documented in up to a startling ten percent of adult men - for example, in unselected electrical technicians and in a general practice study. It has been noted in 27 to 47.8% of people with high blood pressure. Nearly 80% of distance truckers in one study showed repeated drops in oxygen levels during sleep, consistent with sleep apnea.

Sleep apnea occurs with greatest frequency in overweight individuals. Thus, one could reasonably anticipate that its prevalence will increase progressively as a result of the rapidly escalating prevalence of obesity. While identified most often in men over age 40, sleep apnea also afflicts younger workers and women-particularly if obese or post menopausal. It is more likely in people with short, thick necks, nasal congestion and "sinus trouble", and it can be aggravated by alcohol and sleeping pills.

Sleep apnea has been associated with an up to 23-fold increased risk of heart attack, an up to nine-fold increased risk of motor vehicle accidents, and a 2.7 fold increased risk of vascular deaths. Sleep apnea was also found in 73.8% of male stroke victims.

Another study found mortality rates in severe and mild untreated sleep apneics of 10.6% and 2.1%, respectively, versus 0% in treated sleep apneics.

Sleep apnea also has been implicated in heart failure, sleep related convulsions and cardiac arrests, as well as irritability, mood swings, and difficulty with memory. One study found impaired concentration, memory and problem solving ability in 89% of untreated sleep apneics.

Yet, sleep apnea is extraordinarily treatable

Is Your Workplace at Risk?

Does your workplace include:

*Males over age 40.	*Shift workers.	*Drivers.
*Overweight employees.	*Overtime requirements.	*Equipment operators.
*Factors that create hazard of injury or damages in event of employee inattention or error.		

Sleep Disorders have tremendous impact in the workplace.

"Sleepy workers are dangerous, less productive, and a major source of increased health care costs and corporate liability. Studies of the workplace and transportation industries reveal that human error causes up to 90% of accidents, with inadequate sleep representing a major factor in human error."

Time magazine cover story, "Drowsy America", 12/17/90.

Sleep Disorders and Performance

Many studies have demonstrated the **effects of daytime drowsiness on performance**, the following recent studies can be found in the medical journal SLEEP – Journal Of Sleep And Sleep Disorders Research:

Sleep Apnea & Automobile Crashes, George, and Smiley, SLEEP-September 1999.

Findings: “This Study confirms, using objective accident data, that **OSA patients have more accidents than age and sex matched controls.** These conclusions are strengthened by our sample size (460) which is by far the largest reported using driving records from patients with laboratory confirmed OSA.”

Time-on-Task Decrements in “Steer Clear” Performance of Patients with Sleep Apnea and Narcolepsy, Findley, Suratt and Dinges, SLEEP-September 1999.

Findings: “Persons with untreated sleep apnea or narcolepsy had **poorer performance overall and greater time-on-task decrements** on a 30-minute “Steer Clear” test than did comparably-aged control subjects.”

Sleepy individuals experience potentially dangerous degrees of impairment. Essentially comparable to that of substance abusers.

The Basics of Good Sleep Hygiene

1) *Protect your need and right to sleep!*

- Never feel guilty about fulfilling your body's need to recharge itself.

2) *Ensure adequate sleep time, free from interruptions.*

- Most adults require 7.5-8 hours. Teenagers and children require even more sleep!

3) *Maintain regular sleep habits!*

- Regularity makes a tremendous difference in training your "biological clock", this clock controls your alertness and ability to sleep.

4) *Avoid going to bed after midnight unless you work night shift.*

- If you catch a "second wind" you will have difficulty falling asleep.

5) *Go to bed prepared to sleep!*

- Vigorous exercise shortly before bedtime may interfere with your ability to fall asleep. However, exercise several hours before be helpful.
- Avoid late afternoon/evening naps.
- "Don't Worry... Sleep" Do not lie in bed worrying about problems, set aside other times to ponder these things
- The bed should be used for sleep and sex. Associate your bed with relaxation and not with activities that will be likely to keep you alert for prolonged periods.
- Avoid large meals and excessive fluid intake that may interfere with sleep, cause indigestion, heartburn or frequent awakenings to urinate.

- Caffeine and smoking prior to retiring are additional factors that can worsen one's ability to fall asleep and stay asleep.
- Warm baths and engaging in relaxing, calming and soothing activities can be helpful.

6) *Make sure that your bedroom is conducive to good sleep!*

- A dark environment is best, unless you are reassured by having a night-light.
- A quiet environment or low level soothing, consistent sounds are best.
- A cool environment is best.
- A comfortable mattress and pillow are mandatory.
- If you have allergies, consider an air purifier for your bedroom.

7) *Don't sleep too long!*

- Avoid oversleeping and lying in bed for long periods upon awakening.

8) *Avoid medications that interfere with either sleep or alertness!*

- This includes, prescription, over the counter and holistic medications and supplements
- Never discontinue prescribed medications without the approval and awareness of the physician who prescribed them.

The Problem – The Solution

THE PROBLEM? –LACK OF STAMINA & ENERGY.

THE SOLUTION? -TAKE DECISIVE ACTION.

ENHANCE YOUR QUALITY OF LIFE AND ENERGY LEVEL.

HAVE THE STAMINA NEEDED TO EXERCISE REGULARLY.

**We offer the following services,
tailored to the individual's needs:**

**Screening, Diagnosis and Treatment
with verification of sustained good outcomes**

- **Comprehensive Screening for identification of significant “Breathing Related Sleep Disorders”.**
- **Recommendations and referral to Sleep Specialist if necessary.**
- **Sleep Hygiene Education Tailored to individual Patient at time of Screening.**
- **If Sleep Specialist determines that patient is a candidate for Oral Appliance therapy, we can provide a variety of appliance choices to fit the needs of the patient.**

Take The Test

Epworth Sleepiness Scale

How likely are you to dose off or fall asleep in the following situations, in contrast to just feeling tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

0 = Never, 1 = Slight Chance, 2 = Moderate Chance, 3 = High Chance

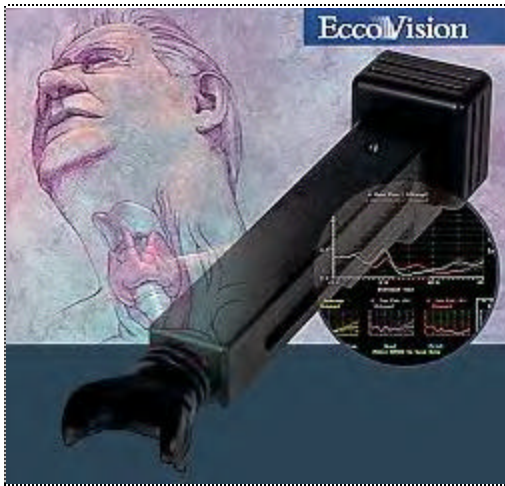
<u>Situation</u>	<u>Chance of Dozing</u>
Sitting and reading	_____
Watching TV	_____
Sitting inactive in a public place	_____
As a passenger in a car for an hour without a break	_____
Lying down to rest in the afternoon when possible	_____
Sitting and talking to someone	_____
Sitting quietly after lunch without alcohol	_____
In a car, while stopped for a few minutes in traffic	_____
TOTAL	_____

A score of 10 or more, may indicate a serious sleep disorder. For those lacking the energy to follow a regular exercise routine, a consultation may place them on the track to obtaining the energy and stamina needed to stick with the exercise program required to achieve and maintain “Healthy Weight”.

Consider distributing our “Healthy Weight” brochure to your clients. It may make the difference.

The Acoustic Pharyngometer

Quick and Accurate Diagnostics for the Upper Respiratory Airway
Utilizing Sound Waves



This Diagnostic tool allows us to:

- Demonstrate structural and functional abnormalities of the pharynx and functional abnormalities of the pharynx and glottis.
- Discover risk factors for obstructive sleep apnea.
- Determine airway response to therapeutic intervention.
- Determine the site and degree of airway obstruction.
- Determine the impact of tonsils on upper airway - pre and postoperative.

The “EccoVision” Pharyngometer uses acoustic technology to assess the cross sectional area of the upper airway from the oral cavity through the hypopharynx. During a 4-minute non-invasive, diagnostic procedure, we assess a patient's potential sites of sleep related upper-airway obstruction.

More than 80% of habitual snorers have Respiratory Disturbance Indices of less than 15 apneas and/or hypopneas per hour. Although many of these patients have a clinically significant sleep disorder, most remain undiagnosed. When one considers the annual cost to industry and health care undiagnosed daytime drowsiness is responsible for, screening for these individuals would benefit everyone involved.

Once a patient has been screened as a potential **“Breathing Related Sleep Disorder”** patient, the appropriate recommendations and **referral to a Sleep Specialist follows**. The Sleep Specialist will be provided with **all of the Screening and Diagnostic results** facilitating the process leading to a final diagnosis and treatment. **Mandibular advancement dental appliances represent one of the most promising new treatment options for these apnea patients.** These devices re-establish patency in the upper airway by moving the lower jaw forward. In the event the Sleep Specialist recommends an Oral Appliance, the **EccoVision Pharyngometer enables us to measure the effect that this appliance has on airway patency.** Facilitating appliance titration and verification of efficacy.

1. The Sleep Cohort Study. N Engl J Med (1993;328:1230-5)
2. Sleep 18(6) 1995,pp 501-513

**For further information on our services... and
how you can put your sleep problems to rest:**

...Contact:

Dr. John S. Viviano

**Conservative Treatment for Snoring – Sleep Apnea
and Breathing Related Sleep Disorders**

General, Family and Cosmetic Dentistry

Dr. John S. Viviano obtained his B.Sc. and D.D.S from U of T and has practiced General, Family and Cosmetic Dentistry in Mississauga since 1985. He maintains a special interest in the treatment of snoring, sleep apnea, and other breathing related sleep disorders.

He is a member of the American Academy of Sleep Medicine and Sleep Wake Disorders Canada. He is both a member of and credentialed by the certifying board of the Academy of Dental Sleep Medicine and he is also a member of and has lectured on behalf of the Canadian and Ontario Dental Associations and other organizations regarding the treatment of Snoring, Sleep Apnea and Patient Management Strategies.

Dr. Viviano utilizes various appliances including trial appliances in his conservative treatment of snoring, sleep apnea, and breathing related sleep disorders.

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**If you have a Sleep Disorder
it's worth knowing about it.**



**Because the problem is serious,
and because you can do
something about it.**