York Region Sleep Disorders Centre

Shift Work Program

Perhaps the greatest insult to sleep in the 20th Century was the development of the light bulb, television and home computer. With people staying up longer and longer in the evening, sleep cycles become shortened or even 'phase shifted' to another time cycle. One of the best examples of this occurs when we cross time zones during transcontinental flights. These circadian changes impact sleep such that when the confines of our usual daytime routines are imposed (school, work, etc), daytime fatigue results.

Shift Work Syndrome, or 'blue collar jet lag' as it is sometimes referred, demands the constant adjustment and re adjustment of sleep patterns and circadian rhythms to the changing sleep wake pattern of shift work. As a result, it is estimated that up to 20% of people fall asleep in the job, thereby predisposing them to workplace accidents and creating decreased productivity. There is also an increased risk of gastrointestinal disorders, heart disease and marital / family discord. To make matters worse, the impact is long lasting such that it can persist for years after the shift work has ceased.

While the best treatment for Shift Work Syndrome is to change jobs, this is often impractical. At the York Region Sleep Disorders Centre, we have developed a program to treat individuals suffering from fatigue secondary to work schedules by using combinations of light therapy, behavioural tools, and various pharmaceuticals. Should any of your patients complain of fatigue or sleepiness, ask what type of work they do. If they are working in shifts, consider referring them to our Centre for specific treatment of this potentially devastating condition.

About Our Centre...

York Region Sleep Disorders Centre was founded in 1995 and represented the ***first*** Sleep Disorders Centre in York Region. To date, it is one of the only full service sleep labs in that patients suffering from a full spectrum of sleep disorders (not just Obstructive Sleep Apnea) are assessed and treated. With the recent expansion to six beds and in addition to being one of the few labs with Board Certified Sleep Specialists, York Region Sleep Disorders Centre is able to offer unsurpassed service and unparalleled expertise.

For more information, please call **905 773-7843** or take a virtual tour of the lab at **www.yorkregionsleep.com.**

13085 Yonge Street, #2B, Richmond Hill, Ontario L4E 3S8 • Telephone: 905 773-7843 Fax: 905 773-1325
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SLEEP SECRETS™

The Official Newsletter of the York Region Sleep Disorders Centre

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York Region Sleep Disorders Centre

Insomnia and Depression: The chicken or the Egg?

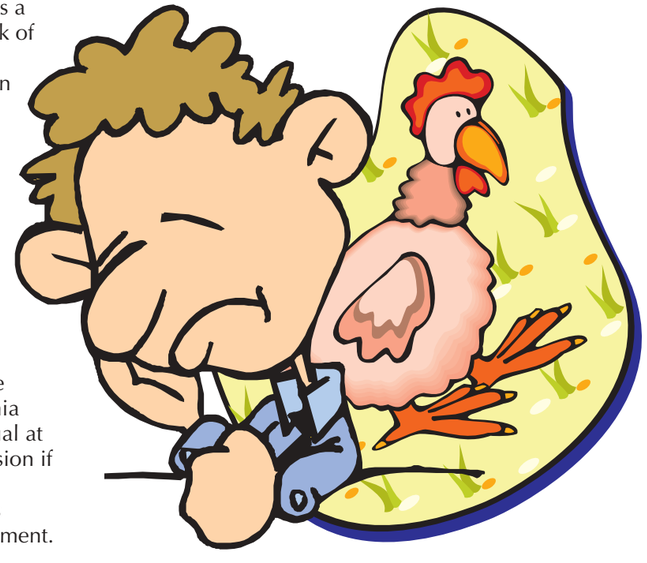
"But doctor, I feel depressed because I can't get any sleep".

This retort is frequently heard when a physician suggests that an individual's difficulty sleeping may be secondary to an underlying mood disorder. The question arises who is correct about the causative relationship between insomnia and depression. The literature suggests that both are correct: Insomnia is both a symptom and a risk factor for depression.

There is no question that insomnia is often present during a depressive episode and in fact, up to 35% of all individuals presenting with chronic insomnia have an underlying depression or anxiety disorder. Furthermore, most patients with a depression have insomnia as one of the diagnostic symptoms. On the other hand, longitudinal studies have suggested there is a significantly higher risk of developing a new depressive illness when insomnia (in the absence of associated depression) is left untreated for a year.

Whether insomnia is a distinct disorder directly causing mood disorders or represents a prodromal entity has yet to be determined. None the less, a chronic insomnia may place an individual at risk of a future depression if less untreated, and subsequently warrants investigation and treatment.

Another issue to consider is the choice of symptom that our patients emphasize when presenting to our offices. At the sleep center, we not uncommonly see individuals down playing depressive symptomatology, and despite presented with the findings of high ratings on depression scales, the absence of other primary sleep pathology, and sleep architecture findings consistent with a depression, are uncomfortable considering this explanation for their sleep difficulties. This is a complex matter which may relates to an individuals ability and comfort to discuss psychological issues. It often requires several visits to explore these possibilities and any stigma that might surround a diagnosis of depression as well as provide education about the mutual causality between insomnia and depression.



Individual Highlights:

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Current Research Findings

Study Shows Short Naps are Better Performance Boosters

A 10-minute nap is better than a half-hour snooze at improving work performance, according to new Australian sleep research.

Leon Lack, PhD, and postgraduate student Amber Tietzel, BSc, studied the effect of varying nap lengths in the School of Psychology Sleep Laboratory at Flinders University in Adelaide, Australia. They concluded that 10 minutes is the most effective nap length for improving performance for up to three hours afterward.

Dr. Lack explained that participants in the study underwent a series of performance tests and were allowed to sleep for precisely 10 or 30 minutes. Their performance level was then retested over the next hour. After the 10-minute nap, participants showed increased alertness, both subjectively and in the performance measures, but not with the 30-minute nap, Dr. Lack said. He noted that after a 30-minute nap, participants were actually groggy for up to half an hour as a result of "sleep inertia," which occurs after longer sleeping periods.

He explained that the team then conducted a second study, this time of performance at three hours after a five-, 10-, 20- and 30-minute nap. Again, the 10-minute nap proved most successful, with the 20- and 30-minute naps producing grogginess that resulted in suppression of performance for up to half an hour after the nap.

"We have a chronic sleep debt, which to some extent can be repaid by a very brief nap," Dr. Lack pointed out. However, he emphasized that the ideal solution would be for people to get the right amount of sleep at night.

Long Work Hours, Lack of Sleep Linked to Heart Attack

Men who frequently work long hours or get little sleep are at twice the risk of suffering a nonfatal heart attack, according to a study in the July issue of *Occupational and Environmental Medicine*. The researchers, led by Ying Liu, a research fellow at the National Cancer Center in Tokyo and a graduate student at Kyushu University in Fukuoka, Japan, conducted a study to investigate whether a link exists between lack of sleep, overtime work and heart attack.

The investigators evaluated the cases of 260 men ages 40 to 79 who had suffered nonfatal heart attacks between 1996 and 1998. The men were matched to a control group of 445 men similar in age and residence who hadn't had heart attacks.

The researchers compared the number of work hours all the men had put in during the previous year before their heart attack, as well as their average amount of sleep on both days off and workdays. They also took into account other possible heart attack risk factors, such as cigarette smoking, alcohol consumption, body weight and disease history.

Men who worked 61 hours a week or more, on average, during the past year were twice as likely to have a heart attack as the men who worked 40 hours a week or less, the investigators found. And the men who slept for five hours or less, on average, each working day during the previous year had twice the heart attack risk of men who got more than five hours of sleep nightly.

Also, the researchers found, sleep deprivation in the previous week before their heart attack and lack of more than two days off in the previous month before the heart attack boosted heart attack risk even further, suggesting that lack of rest may have a short-term effect as well as a long-term one.

Long hours of work and little sleep are both known to increase blood pressure and heart rate, the authors noted, and stress of long work hours may throw off the heart's normal rhythm, which can lead to a heart attack.

Study: OSA Causes Five-fold Increase in Heart Disease

The first long-term, clinic-based epidemiologic study of the development of cardiovascular disease in middle-aged men either with or without obstructive sleep apnea showed that the sleep problem caused almost a five-fold increase in heart disease. That increase was independent of age, weight, blood pressure and current smoking status.

Yüksel Peker, MD, PhD, of Sahlgrenska University Hospital, Gothenburg, Sweden, and colleagues found that at least one cardiovascular problem occurred in 22 of 60 men (37 percent), ages 30 to 69, with OSA, compared with eight out of 122 (7 percent) without OSA. According to the investigators, the most significant predictor of the development of cardiovascular disease was the presence of OSA at baseline.

As part of the study, patients who had excessive daytime sleepiness were offered treatment with either continuous positive airway pressure, surgery or an oral appliance.

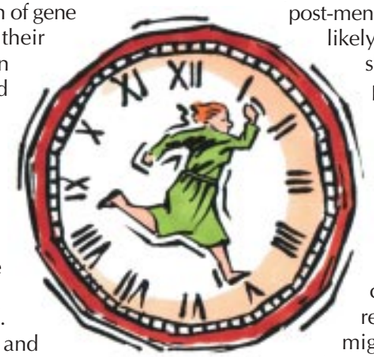
In the OSA group, cardiovascular disease incidence was observed in 21 of 37 incompletely treated cases, but it occurred in only one in 15 of the effectively treated patients.

The research appeared in the July 15 issue of the *American Journal of Respiratory and Critical Care Medicine.*

Study: Some Circadian Rhythms Age Faster Than Others

In a study of old and young rats, circadian rhythm in certain tissues became less reliable with age, but others "kept time" as well as they did in younger animals.

For example, the lungs appear to lose their 24-hour rhythm, and half of the older rats had a random pattern of gene activity compared with their younger counterparts. In contrast, the liver stayed on target, churning out proteins in a cycle that matched the rest of the body.



And in certain tissues, such as the kidney, a 24-hour cycle was maintained but pushed slightly forward. For example, the peaks and valleys of gene activity in the elderly rats were 4.5 hours ahead of the younger animals.

In the new study, published online in the Early Edition of the *Proceedings of the National Academy of Sciences*, the researchers used rats genetically engineered to contain a firefly gene. The researchers then measured circadian rhythms by looking at how the tissue glowed when the rats' cells were exposed to luciferin, a bioluminescent compound found in insects.

Overall, the study "suggests that some parts of the molecular clock within the hypothalamus are not affected much by aging," lead investigator Gene D. Block, PhD, of the University of Virginia in Charlottesville, told Reuters Health. But Dr. Block pointed out that the study also suggests that peripheral clocks in some tissues, such as the lungs, are affected by aging.

Menopause Now Blamed for Sleep Disorders

By Francie Scott

Menopause takes the blame for many discomforts in the lives of middle-aged women. Everything from face wrinkles to urinary tract infections comes under discussion.

Associated with infamous hot flashes and unpredictable mood swings, menopause was once dismissed as a disease of the mind–a female version of hypochondria related to the loss of fertility. But as women's health issues entered the realm of serious medicine, the once notorious change of life has grown into a clinical activity reaching into numerous medical fields, including sleep medicine.

Sleep doctors cite data indicating that post-menopausal women are more likely to suffer from obstructive sleep apnea (OSA) than premenopausal women. Middle-aged men are also at higher risk, but it was the women's trend that motivated a group of investigators at Hershey Medical Center in Pennsylvania to consider the role hormone replacement therapy (HRT) might play in the development of the disease.

In a survey of 1,000 women and 741 men who underwent a one-night sleep laboratory evaluation, they found the men had 3.9 percent prevalence of OSA while the women presented with 1.2 percent prevalence. No one expressed surprise at those results. The surprise came in the comparison between premenopausal women and post-menopausal women on hormone replacement therapy; the older group of women had a prevalence rate of 0.5 percent, slightly lower than the 0.6 percent prevalence rate for the younger women.

"The study suggested that hormone replacement therapy protected the women from sleep apnea," observed co-author Alexandros Vgontzas, MD, a professor of psychiatry at Hershey and director of the facility's sleep disorders center.

Sleep professionals greeted the study with interest when it appeared in the March edition of the American Journal of Respiratory and Critical Care Medicine.

References

1. Bixler EO, Vgoutzas AN, Lin HM et al. Prevalence of Sleep Disordered Breathing in Women: Effects of Gender. Am J Respir Crit Care Med (2001; 163: 608-613).

2. Young T. Menopause, Hormone Replacement Therapy, and Sleep Disordered Breathing. Are We Ready for the Heat? Am J Respir Crit Care Med (2001; 163: 597-598).