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Sleep deprivation: a hidden form of stress

By Dr. Verna Hunt DC ND

The test of having a good sleep is whether you feel rested upon awaking and can maintain this state all day long. Some people need a 10-20 minute catnap after lunch, 'siesta time', and this is a way to get a second wind for the rest of the day.

Many people are sleep deprived due to:

- Interruptions from a baby needing to be fed
- Less than 7 hours sleep due to work demands and commuting to work
- Sleep apnea where one actually stops breathing
- Sleeping when stressed and not going into the deeper sleep cycle
- Doing shift work
- Sleeping during the daytime and not at night- every hour of sleep before midnight is worth 2 hours after
- Frequent jet lag
- Interrupted sleep due to frequent urination at night

Sleep deprivation over time is a real and serious form of stress. It affects our hormones. One hormone affected when we sleep is called melatonin, which augments the healing and repair that occurs on a cellular level during sleep. If the room is too bright or the sleep interrupted there is less or no melatonin produced. Research has shown that some cancers are in part due a lack of melatonin. More melatonin is produced if the room you sleep in is as dark as possible without even a night-light. This includes not turning on a light if we get up at night to urinate. Many city houses have ambient light from the street and windows may need to be covered with a blackout curtain.

Relaxing before going to sleep with a hot bath, meditation, calm music or comforting reading are good ways to prepare the body for sleep. Going to sleep when you are emotionally upset is not good for your entire being. Write down the thoughts that are disturbing you and set them aside until morning.

Sleeping on a supportive and comfortable bed is essential. Different body types need individualized mattress recommendations. Ask your health care practitioner what would be best for you to sleep on. The variables include:

- Firmness throughout the mattress and on the top of the mattress
- Fabrics and materials used in the construction of the mattress
- The body type and weight of the person using the mattress
- Fabric used in the bedding and pillows
- The position and direction of your bed in the room

The ability to breathe deeply and fully is one key to restorative sleep. When we breathe our diaphragm, a large muscle that attaches all the way around the bottom of our ribs, moves downward to allow air into the lungs. The movement of the diaphragm is physically responsible for 85% of the air we take in when we are awake, while rib movement and other body actions take in the other 15%. Surprisingly the diaphragm is responsible for 98% of the air we take in while we are asleep. The oxygen taken in during breathing is necessary for all body functions but in particular the brain (8%), the heart (5%) and the diaphragm itself (15% when awake and 75% when we are asleep).

Dr. Verna Hunt BSc DC ND

The Centre for Health & Well Being
2927 Dundas Street West, Toronto, Ontario, M6P 1Z1

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t: 416-604 8240 f: 416-604 9665

w: www.healthandwellbeing.info
e: info@healthandwellbeing.info

One major and often undiagnosed problem is sleep apnea, even in children. If you have any of these symptoms you may have sleep apnea and you should consult with your health care practitioner:

- Snoring with pauses in breathing
- Gasping and/or choking during sleep
- Restless sleep
- Sleepiness and/or fatigue during the day- falling asleep very quickly; fighting off sleep when doing something mentally engaging
- Irritability, depression, memory loss, lack of concentration
- Morning headache
- Frequent night urination
- Sexual dysfunction in males

If you are snoring the causes could be from:

- Weak muscles
- Tissue encroaching the airway
- Obstructed nasal breathing

When there is resistance to the intake and output of air from the lungs the diaphragm has to work harder and therefore it uses up more of the available oxygen.

This is the cycle in sleep apnea: Sleep- increased upper airway resistance- snoring- hypopnoea- apnea-decreased available oxygen (hypoxia) and increased carbon dioxide (hypercapnea)- central nervous system arousal- decreased upper respiratory resistance- restoration of breathing.

Left untreated sleep apnea can lead to nocturnal increased blood pressure, increased heart size, heart attack, heart disease, stroke, accidents, job loss etc. Progesterone is a breathing stimulant and so apnea can increase after menopause in women when the progesterone levels decrease.

After diagnosis with a nocturnal respiratory study treatments may include:

- CPAP machine-continuous positive airway pressure- 100% effective with no adverse effects
- Oxygen therapy – increase the spO2 and the nocturnal respiratory drive
- Body position- do not sleep on back
- Weight loss
- Dental appliance- effective in keeping the base of the tongue downward but can lead to TMJ problems
- Surgery- removal of extra palate tissue but can lead to tendency to regurgitation
- Exercises to improve the ability to move the diaphragm such as yoga, Pilates or power walking

Remember we spend one-third of our life sleeping if we normally average 7-8 hours sleep per night. Your mattress is as important as good shoes or proper eyeglasses. When, and how you sleep is something you can consult with your health practitioner about.