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Occupational HEALTH
A Lexington Medical Center Physician Practice

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Obstructive Sleep Apnea; Significant Consequences

PLUS

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Working Well

Join us in welcoming Whitney Buckland, the new occupational health provider for Occupational Health at Lexington Medical Center. She completed her physician assistant degree after attaining a bachelor's degree in biological sciences from North Carolina State University in Raleigh. For the past few years, she has been working in an urgent care setting. That experience, combined with her positive energy, will undoubtedly assist her in evaluating, diagnosing and treating work-related injuries and illnesses. Lexington Medical Center is fortunate to have her join the Occupational Health team. Please read her article on "What Is a PA?" in this edition of *Working Well.*

Many of our readers have some knowledge of the 2016 Occupational Safety Health Administration ruling on reporting and recording work-related injuries. If you are interested in learning more about this ruling and how it may affect your company policies, join us for a Lunch and Learn regarding this subject in May. Van Henson, training and education supervisor for the Division of Labor's Office of Occupational Safety and Health Administration Voluntary Programs, will be the guest speaker. Invitations will be forthcoming as to the date, time, location and RSVP details.

We hope these articles contribute to the health, wellness and safety culture of our client companies. If you would like to learn more about any health and wellness or safety topic, please contact me at my office by email at darawl@lexhealth.org. Also, if you have any safety experiences you would like to share, publically or anonymously, we would be happy to present that information in this publication. I hope you enjoy this edition of *Working Well!*

– Dana Rawl, MD, MPH

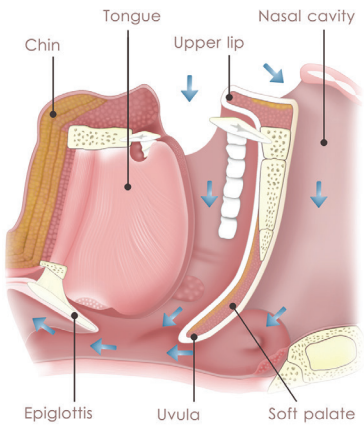
Significant Consequences of Obstructive Sleep Apnea

By Dana Rawl, MD, MPH

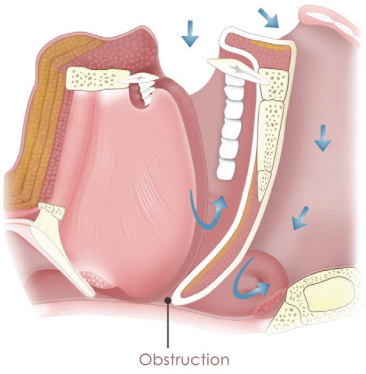
Obstructive sleep apnea (OSA) is a medical condition where the soft tissues of the neck collapse and narrow the airway, which causes incomplete or complete obstruction of the airway while a person sleeps. Complete obstruction leads to apnea, a period of time when the person stops breathing. OSA affects nearly 18 million Americans and is more common in men. Even though anyone can have OSA, the risk is greater for those who are obese or older than 50. Symptoms may include snoring, morning headaches, excessive daytime sleepiness, irritability, fatigue and impaired mental or emotional functioning. Typically, a person with sleep apnea may begin to snore loudly and suddenly become silent only to gasp for a big breath of air. The cycle repeats many times, which prevents the brain from achieving restful sleep.

With an apneic event, the person's blood oxygen saturation drops precipitously. Our brains don't like low oxygen saturation. In response to low blood oxygen, the brain activates the body's "fight or flight" mechanism through the hypothalmic-pituitary-adrenal axis, which produces an increase in cortisol, a natural corticosteroid. Some studies have linked untreated OSA to medical diseases that may be related to elevated cortisol levels in OSA, including hypertension, type II diabetes, heart disease and stroke. Whether elevated cortisol levels in untreated OSA are the pathologic etiology for disease, there is increasing evidence that untreated OSA is an independent risk factor in heart and vascular disease.

Other medical diseases that seem to have a causal relationship from untreated OSA include atrial fibrillation and pulmonary hypertension. Pulmonary hypertension develops when there is high arterial pressure in the lungs that, in turn, may increase pressure in the heart and result in heart failure. Other medical issues can be associated with untreated OSA as well.



Open airway during sleep



Sleep apnea present with obstruction

Medical Ailments Associated with OSA

- **Asthma:** OSA may worsen asthma or decrease effectiveness of asthma medication.
- **Seizures, epilepsy**: OSA may be associated with seizures in older adults.
- **Chronic headaches:** OSA treatment may cure headaches.
- **High-risk pregnancies:** OSA may increase the risk of complications, diabetes and hypertension.
- **Depression:** OSA may worsen nightmares, post-traumatic stress disorder and other psychological problems.
- **Interpersonal relationships:** OSA can disrupt one's bed partner and lead to relationship discord.
- **Attention-deficit/hyperactivity disorder:** Attention disorders and hyperactivity are common in children with OSA.
- **Fibromyalgia:** Up to 80 percent of sufferers have OSA.
- **Sexual dysfunction:** OSA may disrupt one's libido.

There's good news. All medical conditions and ailments associated with or caused by untreated OSA can improve with adequate treatment.

* * *

Editor's note: For the past few years, we have been following OSA recommendations from the Federal Motor Carriers Safety Administration when performing medical certifications for commercial drivers. We have been more diligent in requesting sleep studies for commercial drivers who statistically have higher risk factors for OSA. Unfortunately, however, we have seen some pushback from employers and drivers. Providers have been caught between the "rock" of FMCSA guidance and the "hard place" of implementing recommendations with drivers and companies. During this process, I have learned more about OSA and its untreated relative diseases. OSA is a serious medical condition that has considerable risk for significant medical consequences.

From an FMCSA point of view, untreated significant OSA poses a statistically higher risk for motor vehicle crashes. For this reason, FMCSA recommends drivers who have symptoms of OSA or associated risk factors be screened and treated as necessary. From a medical point of view, untreated OSA can cause and/or contribute to multiple medical conditions, leading to long-term morbidity and death.

Now, when I find a driver with OSA, I feel his or her treatment will not only preserve his or her commercial driver medical certification, but it will also save him or her from potentially devastating medical consequences. Preventing disease and promoting wellness and good health are part of our mantra in occupational medicine. I've even had a few drivers come back and thank me for sending them for a sleep evaluation. They didn't know how bad they felt until they were successfully treated for OSA!

Heed the advice of physicians or providers. More than likely, they will have good reasoning or medical evidence of risk in the decision to request further studies or screenings. It may save you from significant medical consequences in the long run.

Illicit Drug Use in the Workplace

By Dana Rawl, MD, MPH

Since the institution of the Drug-Free Workplace Act of 1988, illicit drug use in the workplace has been declining steadily.

Evidence has indicated, however, a rise in workers using illicit drugs over the past five years with increases in detection rates of amphetamine, heroin and marijuana per the Quest Diagnostics Drug Testing Index. The 2014 National Survey on Drug Use and Health found that 10.6 percent of full-time employees and 13.2 percent of part-time employees age 18 or older used illicit drugs within the past month. Substance Abuse and Mental Health Services Administration data shows employees who use drugs are 2.5 times more likely to be absent from work for eight or more days per year, 3.6 times more likely to be involved in a work-related accident and five times more likely to file a workers' compensation claim.

Overall, costs of substance abuse in the workplace in the United States are estimated to be in the billions of dollars. Some estimate this cost in the hundreds of billions of dollars when considering lost productivity from absenteeism; accident- and injury-related costs; increased insurance premiums, workplace violence and crime-related issues; and poor performance with high turnover and related training expenses. Other consequential problems involved with illicit drug use in the workplace include poor overall employee morale, poor product quality and decreased consumer confidence in the product or company.

Workplace drug testing programs are designed to filter illicit drug users and deter drug use in the workplace. Recommended guidance for a workplace drug-testing program can be reviewed at https://samhsa.gov/workplace.

Post-offer drug testing can be performed when a company makes a conditional job offer contingent on the applicant having a negative drug test result. Post-offer testing helps protect the employer from statistically negative outcomes of initially hiring illicit drug users.

Random testing is another tool to reduce drug use in the workplace. A company having a random drug testing policy may help deter initial applicants who use drugs as well as reduce current employee drug use.

Post-accident drug testing is performed after an employee has been involved in a workplace accident to determine if drug use was a factor in the cause of the incident. There is some consternation related to post-accident drug testing because of the Occupational Safety and Health Administration ruling in 2016 regarding reporting and recording, whereby post-accident drug testing may be a deterrent for employees to not report an injury. (Look for a discussion of this topic at our upcoming Lunch and Learn on May 3, 2017.)

Illicit drug use, which includes street drugs and illegal prescription drug use, is still a major problem for workplaces, our economy and our society. Employers who instill a drug-free culture and enforce policy through legal programs will not only benefit their company, but they will provide a safer, more productive work environment. In addition, employers can potentially provide a drug-free model that could diffuse through the home and into the civilian population.

What is a PA?

By Whitney Buckland, PA

In the new age of health care, you may have already interacted with a physician assistant. A PA is a mid-level medical provider practicing more commonly in a primary care setting or a surgical subspecialty office.

Dr. Eugene Stead at Duke University created the PA role in 1965. He identified a need for increased patient access to primary care and realized Navy corpsmen could provide it. These individuals all had significant health care experience in the military that did not translate directly to a comparable civilian occupation. The first PA class consisted of Navy corpsmen trained by Dr. Stead. Through additional training, these individuals had the ability to provide health care to patients under physician supervision.

Physician assistants go through professional education, training and credentialing. Similar to medical students, they are taught to take histories, perform physical exams, diagnose and treat illnesses and injuries, and order and interpret labs and imaging studies. They use these skills to treat their own patients and, if needed, the PA will consult with the supervising medical doctor to answer any questions regarding diagnosis, treatment, etc. The foundational idea behind PAs is based on a team approach to medicine to augment patient care.

The road to becoming a PA requires a bachelor's degree and a master's degree in physician assistant studies at an accredited university with certification through a national certifying board exam. The master's program typically lasts 26 months and involves on-site rotations in varying clinical fields under direct physician supervision. This education emphasizes general medicine while allowing for elective rotations in medical or surgical specialties.

Patients and clinicians refer to PAs differently. These medical professionals may be called mid-levels, advanced practitioners or simply "providers;" however, referring to them as providers or PAs is always acceptable.

Currently, more than 115,000 PAs are licensed in the United States. Demand for these providers has also increased more than 300 percent from 2011 to 2014. Physician assistant studies was ranked as the best master's degree and identified as the most promising job in Forbes magazine in 2014 and 2015, respectively.

The PA profession is unique in that it does not require a provider to choose a clinical specialty. PAs can be trained to work in any field: neurosurgery; pediatrics; oncology; family practice; surgery; orthopaedics; etc. This flexibility gives PAs options for employment and opportunities in multiple fields of medicine.

Coming from an urgent care background, I'm excited to practice in occupational health. I look forward to working with and learning from the seasoned occupational medicine physicians and nurse practitioners at Lexington Medical Center Occupational Health. I hope to expand my occupational health acumen and provide quality medical care for companies and their employees.

– Whitney Buckland, PA

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Reducing the Spread of Infectious Disease in the Workplace

By Dana Rawl, MD, MPH

Infectious diseases are attributable to staggering health care costs, lost work productivity, potentially chronic disease and death. Respiratory diseases such as influenza and pneumonia are the leading infectious cause of death in the United States and globally.

World travel is as easy as buying an airline ticket or setting out on a cruise. Sitting in an enclosed airliner for hours or on a cruise ship for days can expose a person to a plethora of diverse infectious diseases. High profile infectious diseases such as severe acute respiratory syndrome (SARS), avian influenza (H1N1) or infectious enteritis can disseminate rapidly through a population. But global transmission of infectious diseases is not only a global problem. Transmission of infectious diseases is much closer to home and can affect us all daily.

Controlling the spread of disease is a personal responsibility, but being aware of how diseases are spread is important in understanding how to prevent transmission. Disease can spread through direct or indirect contact, or droplet or airborne exposure. Direct contact is skin-to-skin contact. Indirect contact is transfer of an infectious agent from an object or surface to a person, such as someone contracting a gastrointestinal illness from another person or from a soiled counter. Droplets develop from a sneeze, cough or speech, and transmission occurs when an infectious droplet contacts another person's eyes, nose or mouth. This transmission

occurs commonly with a cold or flu. Airborne transmission involves infectious particles suspended in the air that may be inhaled by a person, creating the potential for an infection, such as tuberculosis.

It is important for your health and the health of those around you, including your co-workers and family, to learn and practice preventive methods to reduce the spread of infectious diseases. There are also suggestions that an employer can follow to reduce disease transmission and lost productivity from workplace illnesses.

Action Area	Employers	Employees
• Learn basic infection control principles	• Employ teaching programs for basic infection control principles: hand washing; cleaning and disinfecting surfaces; proper food handling and preparation; techniques to prevent spread of respiratory disease.	• For symptoms of respiratory or GI illnesses, see your doctor. Practice infection control techniques. • Cover your mouth to cough or sneeze. • Wash hands frequently. • Use proper food handling and preparation methods. • Clean and disinfect bathroom and kitchen surfaces. • Stay home if you have a contagious illness.

Information from the American College of Occupational and Environmental Medicine's checklist Controlling Infectious Diseases in the Workplace

Action Area	Employers	Employees
• Hand washing is the number one preventive measure to reduce spread of disease.	• Display signs reminding employees to wash hands prior to and after eating, preparing food and using restroom. • Provide adequate hand washing areas. Use hand sanitizers as alternative if necessary.	• Wash hands properly – 15 second scrubbing with soap, rinse well and dry. • Use hand sanitizer if hand washing is not available and hands are not visibly soiled. • Wash hands prior to and after eating, preparing food, using the restroom or having visibly soiled hands. • Wash hands after contact with any sick individual and before leaving work or home if a co-worker or family member is ill.
• Regular cleaning and disinfecting are essential for kitchens and bathrooms.	• Food preparation and serving areas, kitchens and bathrooms should have regularly scheduled cleanings. • Follow manufacturers' instructions when using disinfectants.	• Report soiled surfaces quickly for cleaning and disinfecting.
• Store foods at proper temperatures and cook foods to proper internal temperatures. • Always clean and disinfect food preparation areas. • Use proper techniques for defrosting, cleaning and cooking foods.	• When storing foods at home or in the workplace, maintain refrigerators at 40°F and freezers at 0°F. • Regularly clean and disinfect refrigerators and freezers. • Store foods in separate containers to prevent cross-contamination. • Regularly monitor food preparation and storage to conform to health department standards	• Wash hands, and clean and disinfect surfaces before and after handling, cooking and serving food. • Refrigerate eggs, raw meat, poultry and seafood; do not leave unrefrigerated for more than 2 hours. • Do not defrost food on a counter; defrost food on a plate in the refrigerator or microwave. Cook food immediately after defrosting. • When preparing foods, use different containers, plates and utensils for raw versus cooked foods. • Wash raw fruit and vegetables before eating or cooking. • Cook poultry to 180°F internal temperature and ground beef until browned in the center. Cook eggs until firm.
• Vaccinate for Hepatitis B for those who may be exposed to blood or body fluids. • Annual flu vaccination programs work. • Keep children vaccinated according to pediatric and Centers for Disease Control and Prevention recommendations.	• Provide Hepatitis B vaccination in accordance with OSHA guidelines for those who may be exposed to blood and body fluids. • Consider annual influenza vaccination program from October through December. • Provide educational materials on vaccinations including childhood vaccinations.	• Confirm with your physician that your vaccinations are current, and don't forget tetanus. • Get your influenza vaccination, particularly if you are in a high-risk group: older than 50; chronic medical condition, including asthma; pregnant women as advised by their doctor; and health care workers. • Ask your physician if you need a pneumococcal vaccination. • Consult your child's pediatrician for vaccination recommendations.

Nurse Practitioner Pearls

By Donna Padgett, ACNP

Smoke Alarm, Check!

How many people check their smoke alarm annually? Do they even know if they have a smoke alarm or if it's functional? How do they find out?

Nearly 5 million homes do not have a smoke alarm and, in homes that do have a smoke alarm, many of them do not function properly. Three of every five people killed in a house fire didn't have a working smoke alarm.

In a non-scientific survey of homes in Orlando, Florida, an investigation revealed many problems with smoke alarms. It identified alarms without batteries or dead batteries, no smoke detector within 10 feet of the kitchen and alarms that did not detect smoke even though they beeped when tested.

Experts recommend that smoke alarms be replaced every 10 years since dust can accumulate on the sensor and render them inoperable. A good way to functionally test a smoke detector is to put smoke under the alarm from a blown-out candle. The sensor should set off the alarm if it is functioning properly. For those who don't like changing batteries, lithium batteries work up to 10 years.

Checking smoke alarms can help us be safe and keep our families safe!

Jeff Rossen provided this information in a TODAY show report for February 15, 2017.

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