BERKSHIRE OCCUPATIONAL HEALTH

PARTNERS IN HEALTH AT WORK

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Berkshire Occupational Health staff (from left to right)
Left photo: Front row – Doris Sour, Billing Coordinator; Dr. Kenneth Stein, Medical Associate Director; Donna Norton, MA*; Dr. Damir Mazlagic, Medical Director; Gina Candilore, MA; Marthanne Donaldson, NP*; **Back row** – Christine Eastland, Drug & Alcohol Testing Coordinator; Susan Smith, NP; Pat Haner, Practice Manager; Karen North, Receptionist; Lisa Levardi, Correspondence Coordinator; Stephen StPeter, Business Development Associate; Dr. Jean Culver
Right photo: Helen Dondi, Care Coordinator; Brenda Ferguson, MA; Nanci Taylor, Receptionist
Missing on the photo: Terri Gundelfinger, LPN
* MA = medical assistant, NP = nurse practitioner

Dear Friends,

As the old Chinese proverb says, even the longest journey starts with a single step. Our first step i.e. the first issue of *Partners in Health at Work* has evoked words of support and positive feedback from many of you. It seems that not only the X-ray picture of the head full of nails from a nail gun attracted your attention. Thank you all.

While this sounds nice and is very encouraging, we will not stop looking for the best match between your interests and the content of this bulletin. Please, e-mail, write, or call us with your comments and suggestions on how to make it even more useful for you.

Enjoy the reading and have a nice summer,

BOH Team

NEWS & REGULATIONS

What is the National Registry of Certified Medical Examiners?

The Federal Motor Carrier Safety Administration (FMCSA) will soon propose the National Registry of Certified Medical Examiners (NRCME) program to produce trained, certified medical examiners who can effectively determine if a commercial motor vehicle (CMV) driver's health meets FMCSA medical standards. The NRCME program represents an important step in gaining and maintaining public trust and confidence in FMCSA's continued efforts to improve highway safety.

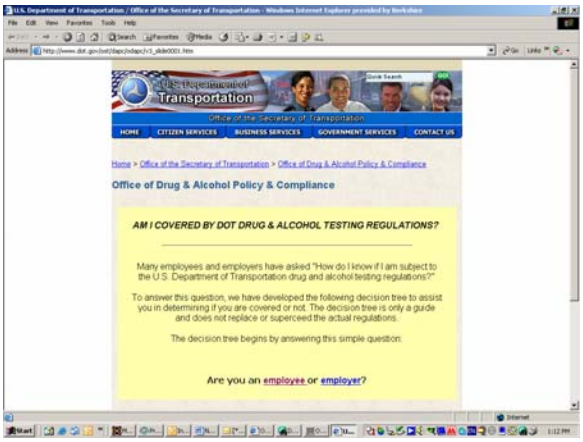
FMCSA has established the NRCME Web site to provide medical examiners, commercial motor vehicle drivers, motor carriers, and the public access to convenient, reliable information regarding the NRCME program. The NRCME web site is: *http://www.nrcme.fmcsa.dot.gov.*

With the NRCME, CMV drivers, motor carriers, and federal, state, and local government transportation agencies will have convenient access to a current list of certified medical examiners across the United States. Medical examiners will have their contact information made universally available to CMV drivers seeking medical examinations. Safety groups, CMV industry associations, and labor organizations will have continuous access to NRCME program information and FMCSA medical standards, rules and regulations related to the CMV industry. Accredited educators will have the opportunity to provide FMCSA-required training to potentially 400,000 medical examiners.

(Prepared by Dr. Kenneth Stein)

DOT Interactive Website: Are You Covered?

The Department of Transportation's Office of Drug and Alcohol and Policy Compliance (ODAPC) has created an interactive website designed to help employers and employees determine whether they are covered by the federally mandated drug and alcohol testing regulations.



The interactive decision tree is easy to use and requires the user to answer simple questions such as:

- Are you an employee or employer?
- In what mode of transportation do you think you operate?
- Do you have a Commercial Driver's License (CDL)?

You can find a DOT Decision Tree at: *http:// www. dot.gov/ost/dapc/odapc/v3_slide0001.htm*

OSHA ISSUES NOTICE OF PROPOSED RULEMAKING TO UPDATE PERSONAL PROTECTIVE EQUIPMENT STANDARDS

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) is proposing to revise the personal protective equipment (PPE) sections of its general industry, shipyard employment, longshoring and marine terminals standards regarding the

use of eye and face protective devices, and head and foot protection. A notice of proposed rulemaking was published in Federal Register on May 17, 2007, and the agency is seeking public comments until July 16, 2007.

"PPE must be strong enough to protect employees from the hazards they face in the workplace. It also must be constructed and tested in accordance with sound and accepted principles that will ensure the safety of employees," said Assistant Secretary of Labor for OSHA Edwin G. Foulke, Jr.

These proposed revisions are a continuation of OSHA's effort to update references to specific consensus and industry standards. They replace the existing references to specific, out-of-date consensus standards with performance language that requires PPE to be constructed in accordance with good design standards. The proposed revisions include appendices that may be used to identify good design standards.

OSHA is also proposing to delete paragraphs in its ventilation standard, as well as its welding, cutting, and brazing standard that currently reference outdated PPE consensus standards.

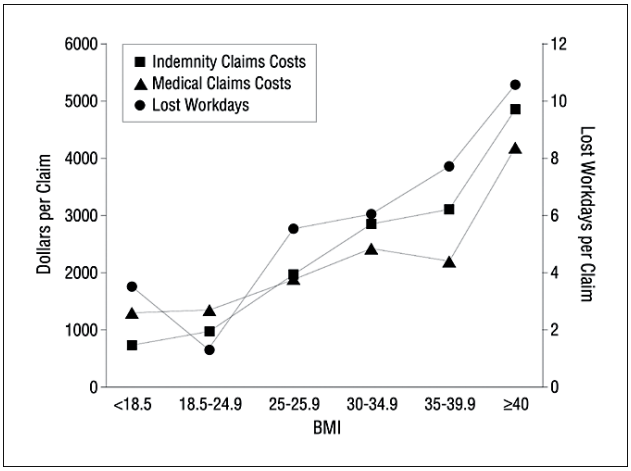
Interested parties are invited to submit comments on the proposed rule by July 16, 2007 electronically at *http://www.regulations.gov*, the federal eRulemaking Portal.

OBESITY ASSOCIATED WITH INCREASED WORKERS' COMPENSATION CLAIMS AND LOST WORK DAYS

In 1994, the estimated cost of obesity to US businesses was $12.7 billion, including $7.7 billion in health care costs alone.

The results of a large-scale study to determine the relationship between body mass index (calculated as weight in kilograms divided by height in meters squared) and number and types of workers' compensation claims, associated costs, and lost workdays, have been published by the *Archives of Internal Medicine* (April 23, 2007; Vol.167: 766-773). Over 11,000 Duke University employees (healthcare and other workers) were included in the study. They all had at least one health risk appraisal between January 1, 1997, and December 31, 2004, which was used to determine obesity classification and cigarette smoking status.

Results revealed a positive linear relationship between BMI and workers' compensation (WC) claims, lost days, and medical and indemnity claims cost. The higher the BMI compared to normal, the bigger the costs, the more lost workdays incurred and more WC claims filed per 100 full time equivalents.



The claims most strongly affected by BMI were related to the following: lower extremity, wrist or hand, and back (body part affected); pain or inflammation, sprain or strain, and contusion or bruise (nature of the illness or injury); and falls or slips, lifting, and exertion (cause of the illness or injury). The combination of obesity and high-risk occupation was particularly unfavorable.

The investigators concluded that "Maintaining healthy weight not only is important to workers but should also be a high priority for their employers given the strong effect of BMI on workers' injuries. Complementing general interventions to make all workplaces safer, work-based programs targeting healthy eating and physical activity should be developed and evaluated."

Reference:
Ostbye T, Dement JM, and Krause KM. Obesity and Workers' Compensation Results From the Duke Health and Safety Surveillance System. *Archives of Internal Medicine*, 2007; 167:766-773.

NOISE-INDUCED, WORK-RELATED HEARING LOSS

Noise-induced hearing loss (NIHL) is a completely preventable problem. However, once a hearing loss takes place it is permanent.

NIHL can be caused by a one time exposure to intense sound (120 to 150 decibels), such an explosion, or by exposure to sounds above 85 decibels (dB) for an extended period of time. Sounds below 75 dB are not likely to cause hearing loss. Along with the muffling or distortion of sounds, the hearing loss can also produce tinnitus, a ringing, buzzing, or roaring in the ears.

Noise causes hearing loss by damaging sensory cells in the inner ear called hair cells. The hair cells convert sound energy into electrical signals that travel to the brain. Once damaged, hair cells cannot recover.

Approximately 30 million workers in the United States are exposed to hazardous noise at work. NIHL is one of the most common occupational diseases. Nine percent of the general population will have a hearing impairment by age 50. In male miners, 49% will have hearing loss by age 50 and 70% by age 60. About 45% of plumbers and carpenters report a hearing loss.

The Occupational Safety and Health Administration (OSHA) hearing conservation standard (29 CFR 1910.95) is in place to minimize hearing loss from occupational exposure. Noise exposure levels must be monitored to identify which workers are exposed to noise at or above 85 decibels averaged over 8 working hours (the action level). Monitoring must be repeated when there are changes in the work process. The employees are notified of the results of the monitoring.

All employees exposed to noise at or above the action level should be entered into an audiometric testing program. Within 6 months a baseline audiogram must be done. Annual audiograms are then performed, and compared to the baseline to see if there is a standard threshold shift (STS). An STS is an average hearing decrease in either ear of 10 decibels or more at 2,000, 3,000, and 4,000 hertz. If the STS is persistent, that audiogram result is used as a new baseline audiogram.

Hearing protection must be provided to all workers exposed to noise at or above the action level. They are required to wear the hearing protection if they have an STS or if they are exposed to noise over the permissible exposure limit of 90 dB averaged over 8 working hours.

Annual training is required for all workers exposed to noise at or above the action level. Training must include the effects of noise, information about hearing protectors, and the

purpose and procedures of audiometric testing. Employers must keep records of noise monitoring for two years and keep audiogram results for the duration of the employee's employment.

Both employees and employers benefit from a good hearing conservation program. Employees maintain their ability to hear and may have less fatigue, irritation, and stress-related health problems. The employer can reduce worker compensation payments, medical expenses, and OSHA citations for hearing conservation violations.

(Prepared by Dr. Jean Culver)

References:

1. *Work-Related Hearing Loss*. DHHS (NIOSH) Publication No.2001-103
2. *Noise-Induced Hearing Loss*. National Institute on Deafness and Other Communication Disorders, NIH Publication No. 97-4233, Updated May 2007.
3. *A Practical Guide to Preventing Hearing Loss*. NIOSH 96-110-14, Updated July 1999
4. *Hearing Conservation*. OSHA 3074, Revised 2002

MERCURY

About 70,000 workers in the United States are regularly exposed to mercury, including health care and laboratory workers, and manufacturers of electrical equipment and automotive parts that contain mercury.

Mercury occurs naturally in the environment and exists in three forms: elemental (metallic), inorganic, and organic. You may be exposed to mercury by breathing its vapors, eating or drinking mercury contaminated food or water, or by skin contact with mercury. The nervous system and kidneys are especially sensitive to mercury. Classic symptoms of chronic mercury poisoning are tremors, personality changes ("mad as a hatter"), and inflammation of mouth and gums.

Metallic mercury is the familiar silvery metal used in thermometers, dental amalgams, and some electrical switches. It is also released into the environment in industrial waste. Metallic mercury is liquid at or near room temperature. Spills of even a few drops can raise air concentration of mercury to levels that may be harmful to health. The longer people breath the contaminated air, the greater the risk to their health. The vapors have no color and no odor. Metallic mercury and its vapors are difficult to remove from clothes, furniture, rugs and other such items. If these items are not properly cleaned, the mercury can remain for months or years, and continue to be a source of exposure. Dental amalgam fillings contain 50% metallic mercury. Current scientific evidence does not show that exposure to mercury from amalgam restorations poses a serious health risk in humans, except for a very small number of allergic reactions.

Inorganic mercury is found in germicides, insecticides and other compounds.

"Mad hatter" is the term drawn from a time when inorganic mercury was used in the process of curing felt used in some hats. Prolonged exposure to mercury vapors caused mercury poisoning in hatters, with symptoms such as tremors, slurred speech, distorted vision, personality changes.

Organic mercury is formed when mercury combines with carbon. It is most often a byproduct of industrialized nations leaching

into the surrounding ground and water. The mercury usually stays on the surface of sediments and soil. When mercury is released directly into water it is likely to settle to the bottom where it can remain for a very long time, entering the food chain by contaminating fish. Predatory fish, such as swordfish, albacore tuna, king mackerel, eat the smaller fish, assuming the entire body burden of mercury of the consumed smaller fish. Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish. For more information visit Food and Drug Administration's (FDA) website: *http://www. cfsan. fda.gov/seafood1.html*.

There are reliable and accurate ways to measure mercury levels in the body. The tests involve taking blood, urine, and hair samples. Nursing women may have their breast milk tested for mercury levels. A thorough history of home and workplace is needed to pinpoint sources of exposures. Sampling of air and water quality can be done. The Environmental Protection Agency (EPA) and FDA have set limits of mercury in water and in seafood products. OSHA regulates levels of mercury in the workplace.

(Prepared by Susan Smith, NP)

References:

1. *Mercury Exposure: Current Concepts, Controversies, and a Clinic's experience*; The Journal of Occupational and Environmental Medicine, February 2002/ Volume 44(2)
2. Agency for Toxic Substances and Disease Registry, 1999, *Toxicological Profile for Mercury*. U.S. Department of Health and Human Services, Public Health Service

WELLNESS & PREVENTION

WHY IS SMOKING AN ISSUE FOR NON-SMOKERS?

The smoke produced by burning tobacco products is known as second-hand tobacco smoke (SHS) or environmental tobacco smoke (ETS).

Tobacco smoke in enclosed spaces is breathed in by everyone, exposing smokers and non-smokers alike to its harmful effects. This is commonly referred to as involuntary smoking or passive smoking.

A recent study in the US (Behan D. et al.: Economic effects of environmental tobacco smoke, Society of Actuaries, March 31, 2005) estimates that SHS exposure results in over 5 billion US$ in direct medical costs and in over 5 billion US$ in indirect medical costs (disability, lost wages, related benefits) annually in the US.

Facts on Tobacco and Second-Hand Smoke

Tobacco is the leading preventable cause of death in the world. It causes 1 in 10 deaths among adults worldwide. In 2005, tobacco caused 5.4 million deaths (one death every six seconds).

Tobacco kills half of its regular users. On average 29% of people around the world are smokers (47.5% of all men and 10.3% of all women). Of the 1.3 billion today's smokers, 650 million are likely to be killed by tobacco.

More than one billion smokers, or 84% of all smokers, live in developing and transitional economy countries.

Tobacco caused 100 million deaths in the 20th century. If current trends continue, there will be one billion deaths in the 21st century.

There are some 4000 known chemicals in tobacco smoke, more than 50 of which are known to cause cancer in humans. SHS also causes heart disease and many serious respiratory and cardiovascular diseases in adults, which can lead to death.

An estimated 700 million children breathe air polluted by tobacco smoke, particularly at home. SHS causes many serious diseases in children and worsens conditions such as asthma.

At least 200 000 workers die every year due to exposure to smoke at work. The EPA estimates that SHS is responsible for about 3000 lung cancer deaths annually among non-smokers in the country.

There is no safe level of exposure to second-hand tobacco smoke. Only 100% smoke-free environments provide effective protection.

(Prepared by Dr. Damir Mazlagic)

Reference:

1. World Health Organization's Fact File: *10 facts about tobacco and second-hand smoke* (http://www.who.int/features/factfiles/tobacco/en/index.html)

BORRELIA BURGDORFERI

What am I talking about?

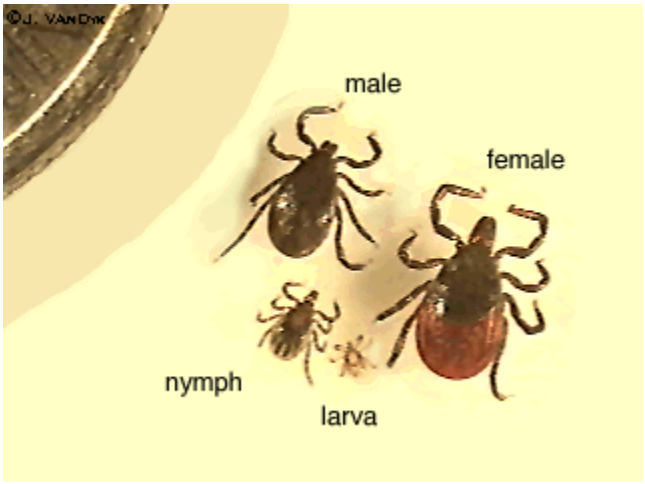
Borrelia burgdorferi is the bacterium that causes **Lyme disease**. The disease received its name in the 1970's after Lyme, CT, the first place in the US where the disease was first identified.

Where is Lyme disease found?

Lyme disease has been reported all over the United States. In Massachusetts the areas of highest incidence include Cape Cod and southeastern Massachusetts, the islands of Nantucket and Martha's Vineyard, Essex county, upper Middlesex and Worcester county border, along the Quabbin Reservoir watershed and in southern Berkshire County.

Who spreads Lyme disease?

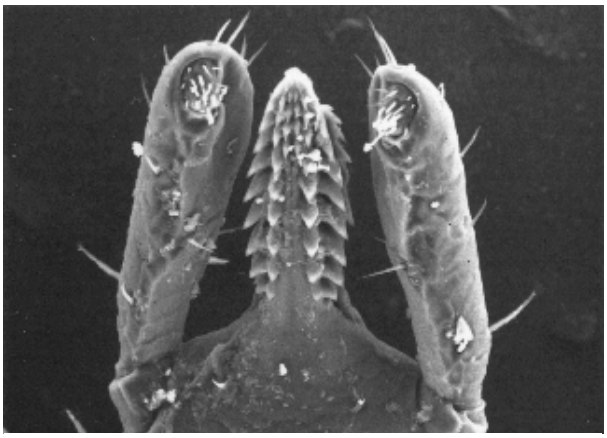
Deer ticks (Blacklegged ticks), both adults and nymphs can carry the disease. The ticks are the size of a pinhead. The dog tick has been shown NOT to transmit the disease.



All four stages of Ixodes scapularis (the deer tick) with dime for size comparison

How is Lyme disease spread?

When a young deer tick feeds on an infected animal, the tick takes the bacterium into its body with the blood meal. It then lives in the gut of the tick and can be transmitted to the next host when the tick feeds again. There is no evidence that Lyme disease is transmitted person to person.



An electronic microscope view of a tick's head

How long does the tick have to be attached to transmit disease?

An infected deer tick does not transmit the disease until it has been attached to the host (you) for several hours to several days.

When are the deer ticks most active?

The tiny nymphs are most active during late spring and the summer. This is the time that humans are also most active outdoors.

Where are the deer ticks found?

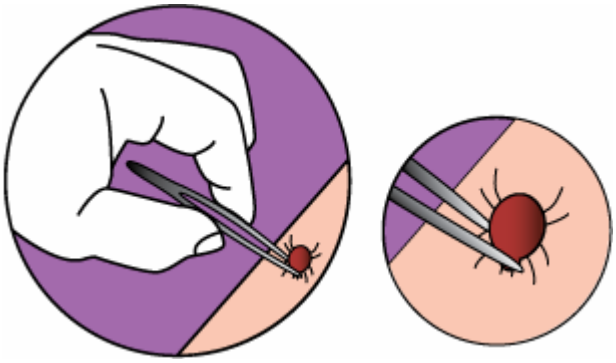
Deer ticks prefer wooded and bushy areas with high grass and a lot of leaf litter. If you do enter this type of area, walk in the center of the trail to avoid contact with the overgrown grass, brush, and leaf litter. Deer ticks only crawl, they do not fly or jump.

How do I keep ticks off my skin?

- Use insect repellent with 20% - 30% DEET on adult skin and clothing.
- Wear long pants, long sleeves, and long socks. Light colored clothing will help you spot ticks more easily. Tucking pant legs into socks or boots and tucking shirts into pants help keep ticks on the outside of clothing.
- Check your skin and clothing for ticks every day after being outdoors! Remove ticks from your clothing before going indoors.
- Inspect all parts of your body carefully including your groin, armpits, and scalp.
- Remove tick immediately using fine-tipped tweezers.

How do I remove a tick?

Use fine tipped tweezers to firmly grasp the tick very close to your skin. With a steady motion, pull the tick's body away from your skin. Do not be alarmed it the tick's mouthparts remain in your skin.



When mouthparts are removed from the body of the tick, it can no longer transmit the Lyme disease bacteria.

Do not use petroleum jelly, a hot match, or a nail polish to remove a tick. Clean your skin with soap and warm water.

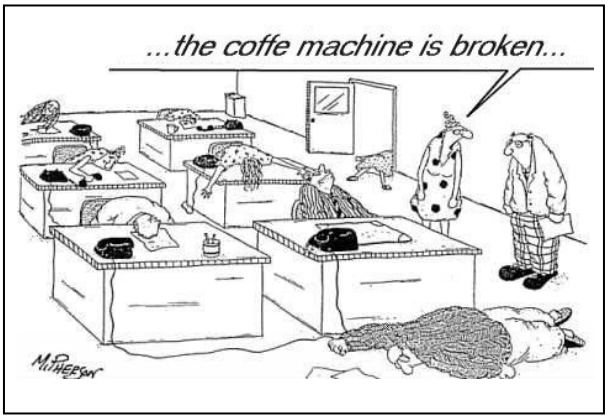
(Prepared by Marthanne Donaldson, NP)

Sources:

1. www.cdc.gov/dvbid/lyme
2. www.state.ma.us/dph

PUBLIC HEALTH LAUGHS

Jay Leno: "And researchers at UCLA have announced that drinking coffee can prevent diabetes and certain types of cancer. Oh, man. You thought health care was expensive before - wait 'til people at Starbucks get involved."



QUESTIONS/COMMENTS/SUGGESTIONS

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