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UNDERGROUND



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# ASTHMA & WORK-RELATED ASTHMA

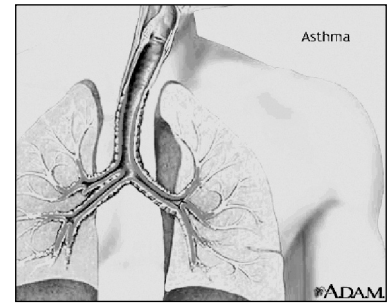
## WHAT IS ASTHMA?

Asthma is a chronic condition that causes reversible airflow obstruction. It involves increased difficulty in breathing due to airway inflammation and constriction. Asthma is often episodic.

## WHAT ARE SYMPTOMS OF ASTHMA?

Symptoms include

- Wheezing
- Breathlessness
- Chest tightness
- Cough
- Sneezing
- Runny nose
- Itchy and inflamed eyes



The severity of the respiratory symptoms is related to the intensity of the inflammation. These symptoms are more commonly experienced at night.

## HOW COMMON IS ASTHMA?

It was estimated that 30.8 million Americans or almost 111 of 1000 individuals were diagnosed with asthma in 2002 [1]. This is likely an underestimate of the true number of people with asthma as many are not diagnosed with this disease.

## WHAT IS WORK-RELATED ASTHMA?

It is asthma that is caused by or is made worse by exposures in the workplace. Over 250 workplace agents are associated with work-related asthma. See Table 1 for common examples.

## HOW COMMON IS WORK-RELATED ASTHMA?

- Up to 20% of all asthma adult cases may be work-related

Type of Substance	Examples
Air pollutants	Tobacco smoke, diesel exhaust, aerosol agents, dusts, gases & vapors
Fumes, gases & vapors	Cleaning solutions, welding materials, solvents, chemicals, and chemical compounds created from heating and cooling metals quickly, formaldehyde, ammonia, chlorine, sulfur dioxide, ozone, nitrogen oxides
Mists	Paints, lacquers, varnishes, hair spray, pesticides, cleaning solutions, acids
Dusts (organic/inorganic)	Wood, rock, coal, silica, asbestos, latex, protein dusts
Molds	All varieties
Pollens	Trees, flowers, weeds

Table 1: Work-related Asthma Triggers

- Of those diagnosed with work-related asthma
  - ◆ 0-27% have pre-existing asthma who experience an asthma attack due to workplace exposures
  - ◆ Up to 80% are new asthma cases due to workplace exposures

### WHEN IS ASTHMA WORK-RELATED?

Do symptoms:

- Occur only at work or regularly after the work shift?
- Improve on week-ends or vacations?
- Increase over the course of the work week?
- Improve after a change in the work environment?

Work-related asthma may not appear for weeks or months following exposure, as it takes time for the body to become sensitive to the substance(s) causing asthma. Once asthma has developed, symptoms may occur at lower levels of exposure to the substance(s).

### HOW IS WORK-RELATED ASTHMA TREATED?

Asthma cannot be cured, but it can be controlled by using medications to control symptoms and prevent asthma attacks, or by avoiding and/or minimizing exposure to triggers. Generally there are two types of medications prescribed by a doctor:

- Controller or long-term
- Rescue, also called Quick-relief

Both types are important in helping keep asthma under control. Each type is used for different purposes.

Poorly controlled asthma leads to: urgent care & emergency room visits, hospitalizations, sick days, activity limitations, and lower quality of life than need be. Thus, it is important to seek medical treatment if you have asthma and to follow the asthma treatment plan prescribed for you.

### STEPS TO TAKE IF WORKPLACE EXPOSURES ARE AFFECTING YOUR LUNGS

#### 1. Gather information about:

- Symptoms you are having
- When these symptoms began
- How often you have these symptoms
- Time of day or week that symptoms are worse
- Times you feel better (e.g., when not working)
- Why you feel symptoms are related to work
- List of substances that you are exposed to at work
- List of previous jobs, hobbies, & smoking habits that may have or may be affecting your lungs

#### 2. Share the above information with your doctor.

### WHAT YOU CAN DO IF YOU HAVE ASTHMA

- Identify and minimize contact with your asthma triggers

- Understand and take your medications as prescribed
- Recognize early signs that it is worsening
- Know what to do when your asthma is worsening

### REFERENCES

1. Trends in asthma morbidity and mortality. 2004, American Lung Association, Epidemiology & Statistics Unit, Research & Scientific Affairs.
2. Cullinan, P., Clinical aspects of occupational asthma. *Panminerva Med*, 2004. 46(2): p. 111-20.
3. Henneberger, P.K., et al., Work-related exacerbation of asthma. *Int J Occup Environ Health*, 2002. 8(4): p. 291-6.
4. Occupational respiratory disease: Your workplace and your lungs. 2000, Familydoctor.org.
5. Braman, S., Update on the ATS Guidelines for COPD. *Medscape Pulmonary Medicine*, 2005. 9(1).

### ASTHMA RESOURCES ON THE INTERNET

<http://health.utah.gov/asthma/>

<http://www.lungusa.org/>

<http://www.nhlbi.nih.gov/health/>

### JENNIFER MARKS, DO, JOINS MINERS HOSPITAL STAFF



Dr. Marks replaced Wayne Stokes, MD as Assistant Medical Director of the Miners Hospital in July. As part of her responsibilities she will see miners in the Miners Clinic at Parkway Health Center. Prior to joining the University of Utah Division of Physical Medicine and Rehabilitation, she was Chief Resident in Physical Medicine & Rehabilitation at Louisiana State University Health Sciences Center in New Orleans. She has a special interest in the health of miners as both her great grandfather and great uncle were coal miners in Pennsylvania.

### STAFF NOTES

Shauna Vincent joined the Miners Hospital as Executive Secretary in September. Holly Horton moved into the Assistant Case Manager position.

The Miners Clinic which is held at Parkway Health Center in Orem, Utah is held on the 1st & 3rd Fridays of each month. Currently, 90 miners are being served.

Two health education programs were conducted in the spring. Dr. Chris Jones conducted a program on Sleep Disorders and Health Problems Associated with Shift Work in Magna, April 27th. The Magna Steel Workers Organization for Active Retirees was our co-sponsor. Dr. Mary Beth Scholand, and Jared Bigham, PA-C, presented a program in Delta on Respiratory Diseases Associated with Mining. Our co-sponsor was Central Utah Health District.

# CURRENTLY USING TOBACCO? Why YOU should quit

Did you know that smokers, compared with non-smokers, are at increased risk for the following types of disorders?

1. Impotence and fertility problems including lowered sperm count, abnormal sperm shape and impaired sperm motility. Smokers, compared with non-smokers, are 1.5 – 2 times more likely to suffer erectile dysfunction. For men in their 30s and 40s, smoking increases the risk of erectile dysfunction by about 50%.
2. Back trouble for tobacco smoking diminishes the supply of oxygen and nutrients to the disks that cushion the vertebra.
3. Acid reflux (heartburn). Smokers have increased esophageal acid exposure due to an increased rate of reflux events and diminished saliva that results in prolonged acid clearance time.
4. Sleep problems and disorders including insomnia (problems going to sleep and staying asleep), daytime sleepiness, snoring, obstructive sleep apnea, and grinding teeth.
5. Increased rate of mental decline in elderly years. In one study of 9,200 adults over the age of 65, the rate of mental decline was up to 5 times faster in smokers than in nonsmokers.
6. Blindness due to age-related macular degeneration, a severe and progressive condition that results in loss of central vision.
7. Lupus (systemic lupus erythematosus), a chronic autoimmune disease that can cause inflammation, pain, and tissue damage throughout the body.
8. Rheumatoid arthritis. Smokers, compared with never smokers, were 2.4 times more likely to be affected with rheumatoid arthritis.
9. Multiple types of cancer including breast cancer, cancer of the mouth, nose, larynx, pharynx, esophagus, stomach, colon, liver, pancreas, kidney, bladder, uterine cervix, and myeloid leukemia.
10. Pulmonary disorders including occupational asthma, chronic bronchitis, emphysema, chronic obstructive lung disease (COPD) and lung cancer. More than 80% of individuals with COPD are current or past smokers and 87% of lung cancer deaths can be attributed to tobacco use.

In addition, tobacco smoking and exposures to many toxic substances within the work environment can interact with one another to produce negative health effects or exacerbate existing health problems. For example, tobacco smoke and coal dust and silica can result in or exacerbate chronic bronchitis.



## REFERENCES:

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[http://www.cancer.org/docroot/PED/content/PED\\_10\\_2x\\_Tobacco-Related\\_Cancers\\_Fact](http://www.cancer.org/docroot/PED/content/PED_10_2x_Tobacco-Related_Cancers_Fact)
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- Howard J. (2004). Smoking is an occupational hazard. *Am J Industrial Medicine* 46:161-169.
- Laino, C. (2004). 10 Overlooked reasons to quit smoking. *WebMDHealth*.  
<http://mywebmd.com/content/article/98/104786.htm>
- Occupational Illness and Injury Prevention Program Health Topic "Watch your back" Prevent back injuries.  
[http://www.msha.gov/illness\\_prevention/healthtopics/HHICM01.HTM](http://www.msha.gov/illness_prevention/healthtopics/HHICM01.HTM)
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- Riedel BW, Durrence HH, Lichstein KL, Taylor DJ. (2004). The relation between smoking and sleep: The influence of smoking level, health, and psychological variables. *Behavioral Sleep Medicine*, 2(1), 63-78.

## SMOKING CESSATION RESOURCES ON THE INTERNET

- <http://www.lungusa/quitsmoking>  
<http://www.tobaccofreeutah.org>  
<http://www.utah.quitnet.com>  
<http://www.cdc.gov/tobacco/how2quit.htm>

## UPCOMING CONFERENCE

### *Alcohol & Drugs in Mining Workforce*

**When:** June 26 & 27, 2007

**Where:** University of Utah Campus

**Sponsors:** Miners Hospital &  
 School on Alcoholism & Other Drug  
 Dependencies  
 University of Utah

# MINERS HOSPITAL

The Miners Hospital was created using funds from Federal land grants provided to the State of Utah. In 2004, the Miners Hospital was created within the University of Utah Rehabilitation Center located in Salt Lake City, Utah.

## WHO IS ELIGIBLE FOR SERVICES?

Any miner who 1) has worked in a Utah coal, metal, or non-metal mine for at least 2 years, 2) has lived in Utah for at least 2 years immediately prior to applying for services, and 3) is experiencing symptoms associated with a mining related injury or illness.

## MINERS CLINIC

The Miners Clinic is held at the University of Utah Parkway Community Clinic. The clinic is located at 145 West University Parkway in Orem, Utah.



To be seen at the Miners Clinic, an application for services must be completed and mailed to:

The Miners Hospital  
50 North Medical Drive  
Salt Lake City, Utah 84132

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