



*"Safety Comes First"*

# Case Western Reserve University Environmental Health and Safety

Sept/Oct  
2022

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*In this issue:*

## Construction Ergonomics: Carpentry

Construction  
Ergonomics:  
Carpentry

1

Carpentry tasks that you regularly perform can lead to fatigue, discomfort, pain, and even injury. Awkward postures, repetitive motions, contact pressure, vibrating equipment, and lifting can all lead to injuries to your body.

*Monkeypox*

2

*The GHS  
Acute  
Toxicity  
Pictogram*

5

**Awkward postures.** Your posture, or the position of your body, can contribute to fatigue or injury to your back, neck, and shoulders. If you are working near the ground, consider sitting or kneeling instead of bending or squatting. Another awkward posture is reaching. To avoid reaching, position yourself closer to the work by using a lift, scaffold, or ladder.

*Should  
Earbuds be  
Allowed in  
the  
Workplace?*

6

**Repetitive motions.** Repeating the same motion, like when hammering, can cause fatigue. To avoid fatigue, take small breaks. Regular breaks that last even only a few seconds are helpful.

*Chemical  
Spotlight:  
Hydrogen  
Sulfide*

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**Contact pressure.** If you kneel for extended periods of time, like when installing a deck, your knees can become irritated or inflamed. Wearing knee pads can make this type of work more comfortable for you.

*Fun Page*

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**Vibrating equipment.** Hand tools such as drills, grinders, and sanders can cause hand-arm vibration. This vibration could result in a tingling sensation or numbness in your fingers, or you may see a change in the color of your hands or fingers. When using hand tools, grasp them as lightly as possible while still maintaining control of the tools.

*Staff*

9

**Lifting.** Improper lifting can lead to back sprains, strains, and herniated disks. Use mechanical equipment to reduce the stress on your back from manual lifting.

2022-4

Source: Safety BLR

# Monkeypox



*"...it may be several days to a few weeks before you develop symptoms."*

Monkeypox is a rare disease similar to smallpox caused by the monkeypox virus. It's found mostly in areas of Africa, but has been seen in other regions of the world. It causes flu-like symptoms such as fever and chills, and a rash that can take weeks to clear. There's no proven treatment for monkeypox, but it usually goes away on its own.

### **What is monkeypox?**

Monkeypox is a rare disease caused by the monkeypox virus. It leads to rash and flu-like symptoms. Like the better known virus that causes [smallpox](#), it's a member of the family called orthopoxvirus. Monkeypox was discovered in 1958 when two outbreaks of a pox-like disease occurred in groups of monkeys being used for research. It's spread mainly through human contact with infected rodents, but can sometimes be spread through skin-to-skin contact with a person who is infected. There are two known types (clades) of monkeypox virus — one that originated in Central Africa and one that originated in West Africa. The current world outbreak (2022) is caused by the less severe West African clade.

### **How common is monkeypox?**

Monkeypox is rare. But the number of cases is increasing in Africa, as well as in regions that haven't seen these infections before.

### **Where else is monkeypox found?**

For decades, Monkeypox was mostly seen in Africa. However, it's occasionally found in other countries, including the United States. In the spring of 2003, the first outbreak of monkeypox outside of Africa occurred in the U.S. A shipment of infected animals from Ghana was imported into Texas. The infected rodents spread the virus to pet prairie dogs, which then infected 47 people in the Midwest. As international travel becomes more common, viruses that were once fairly confined to certain locations can more easily spread around the world. In the summer of 2021, a case of monkeypox was found in a U.S. resident who had traveled from Nigeria to the United States. Then, 2022 brought outbreaks to regions outside of Africa, including Europe, the Americas and Australia.

### **Who does monkeypox affect?**

Anyone can get monkeypox. In Africa, most cases are among children under 15 years old. Outside of Africa, the disease appears to be more common in men who have sex with men, but there are numerous cases in people who don't fall into that category.

### **Symptoms and Causes**

Monkeypox rash can be painful, with spots that change over time before scabbing and falling off.

### **What are the signs and symptoms of monkeypox?**

After exposure, it may be several days to a few weeks before you develop symptoms. Early signs of monkeypox include flu-like symptoms, including:

- Fever.
- Chills.
- Headache.
- Muscle aches.
- Fatigue.
- Swollen lymph nodes.

After a few days, a rash often develops. The rash starts as flat, red bumps, which can be painful. Those bumps turn into [blisters](#), which fill with pus. Eventually, the blisters crust over and fall off — the whole process can last two weeks to four weeks. You can also get sores in your mouth, vagina or anus. Not everyone with monkeypox develops all the symptoms. In fact, in the current (2022) outbreak, many cases aren't following the usual pattern of symptoms. This atypical presentation includes only a few lesions, no swollen lymph nodes, less fever and other signs of illness. You can have it and not know it. Even if you don't show many signs of infection, you can spread still spread it to others through prolonged close contact.

## Monkeypox, Cont.

(Continued from page 2)

### How do you catch monkeypox?

Monkeypox is spread when you come into contact with an animal or a person infected with the virus. Animal-to-person transmission occurs through broken skin, like from bites or scratches, or through direct contact with an infected animal's blood, bodily fluids or pox lesions (sores).

Monkeypox can spread from person to person, but it's less common. Person-to-person spread (transmission) occurs when you come in contact with the sores, scabs, respiratory droplets or oral fluids of a person who is infected, usually through close, intimate situations like cuddling, kissing or sex. Research is ongoing, but researchers aren't sure if the virus is transmitted through semen or vaginal fluids. You can also get monkeypox by coming into contact with recently contaminated materials like clothing, bedding and other linens used by a person who is infected or an infected animal.

### How is monkeypox diagnosed?

Because monkeypox is rare, a healthcare provider may first suspect other rash illnesses, such as measles or chickenpox. But swollen lymph nodes usually distinguish monkeypox from other poxes.

To diagnose monkeypox, your healthcare provider takes a tissue sample from an open sore (lesion). Then, they send it to a lab for polymerase chain reaction (PCR) testing (genetic fingerprinting). You may also need to give a blood sample to check for the monkeypox virus or antibodies your immune system makes in defense of it.

### Is monkeypox curable?

Monkeypox is usually a self-limited disease with symptoms lasting from two weeks to four weeks. Most people with monkeypox get better on their own without treatment. Following diagnosis, your healthcare provider will monitor your condition and try to relieve your symptoms, prevent dehydration and give you antibiotics to treat secondary bacterial infections if they develop.

There's currently not an approved antiviral treatment for monkeypox. Antiviral drugs may help, but they haven't been studied as a treatment for monkeypox. Several investigational antivirals with activity against monkeypox are available, but only as part of a research study.

### How do you prevent monkeypox virus?

A smallpox vaccine provides protection against monkeypox, but its use is currently limited to clinical trials. Prevention depends on decreasing human contact with infected animals and limiting person-to-person spread. The best way to help prevent the spread of monkeypox virus is to:

- Avoid contact with infected animals (especially sick or dead animals).
  - Avoid contact with bedding and other materials contaminated with the virus.
  - Thoroughly cook all foods that contain animal meat or parts.
  - Wash your hands frequently with soap and water.
  - Avoid contact with people who may be infected with the virus.
  - Practice safe sex, including the use of condoms and dental dams.
  - Wear a mask that covers your mouth and nose when around others.
  - Clean and disinfect frequently touched surfaces.
- Use personal protective equipment (PPE) when caring for people infected with the virus.

### How long does monkeypox last?

Monkeypox normally takes about two weeks to four weeks to run its course. If you're exposed to monkeypox, your provider will monitor you until the rash resolves.

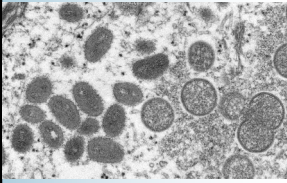
### Is monkeypox fatal?

The less severe West African clade is causing the current world outbreak (2022). No one has died from this outbreak to date. But monkeypox can lead to other problems (complications) like pneumonia and infections in your brain (encephalitis) or eyes, which can be fatal.

*"... (this is a) disease with symptoms lasting from two weeks to four weeks."*

(Continued on page 4)

## Monkeypox, Cont.



*“...different viruses cause monkeypox and chickenpox.”*

(Continued from page 3)

### How do I take care of myself?

If have monkeypox symptoms, there are over-the-counter medications that can help you feel better, including:

- **Pain relievers and fever reducers.** Medicines like ibuprofen (Advil®, Motrin®) and acetaminophen (Tylenol®) can help you feel better.
- **Oatmeal baths.** Soaking in a warm bath with colloidal oatmeal can relieve the dry, itchy feeling that comes with skin rashes.
- **Isolate yourself if you’re infected.** Avoid contact with others until all of your lesions have scabbed.
- **Cover single or local lesions.** Use gauze or bandages to limit the spread to others and the environment.
- **Take good care.** It’s important to stay home and rest when you’re sick, wear a mask around others and drink plenty of fluids.
- **Avoid contact with pets (especially rodents).**

### When should I see my healthcare provider?

Call your healthcare provider if you:

- Feel sick with fever, aches or swollen lymph nodes.
- Have a new rash or sores.
- Have been in close contact with a person who is infected.

### When should I go to the ER?

Seek medical care if you develop the following symptoms:

- Trouble breathing.
- New or worsening chest pain.
- Stiff neck.
- Are confused or can’t think clearly.
- Difficulty speaking or moving.
- Loss of consciousness.
- Seizures.

### Monkeypox vs. chickenpox

Although they both cause skin rashes, different viruses cause monkeypox and chickenpox. Monkeypox is an orthopoxvirus, while chickenpox is a herpes virus. Both viruses can be spread through skin-to-skin or prolonged face-to-face contact, but chickenpox is very contagious and spreads more easily than monkeypox. People with monkeypox are more likely to have swollen lymph nodes than people with chickenpox. The rashes act differently, too. While the chickenpox rash can appear in waves, monkeypox sores develop at the same time. Chickenpox symptoms — including the rash — tend to get better within two weeks, while it takes two weeks to four weeks for monkeypox to resolve.

### Monkeypox vs. smallpox

Smallpox and monkeypox are both part of the orthopoxvirus family, so they’re caused by similar but distinct viruses. Thanks to effective vaccines, smallpox was eradicated (is no longer a circulating disease) by 1980. Smallpox was very contagious and spread more easily than monkeypox. Monkeypox symptoms are similar to smallpox, but milder.

## The GHS Acute Toxicity Pictogram

Acute toxicity refers to serious adverse health effects (i.e. lethality) occurring after a single or short-term oral, dermal or inhalation exposure to a substance or mixture.





Substances can be allocated to one of five toxicity categories based on acute toxicity by the oral, dermal or inhalation route according to the numeric cut-off criteria as shown in the tables below. Acute toxicity values are expressed as (approximate) LD50 (oral, dermal) or LC50 (inhalation) values or as acute toxicity estimates (ATE).

Explanatory notes are shown following Table :

**Acute Toxicity Estimate (ATE) Values and Criteria for Acute Toxicity Hazard Category**

Exposure route	Category 1	Category 2	Category 3	Category 4	Category 5
<b>Oral</b> (mg/kg bodyweight)	ATE ≤ 5	5 < ATE ≤ 50	50 < ATE ≤ 300	300 < ATE ≤ 2000	
<b>Dermal</b> (mg/kg bodyweight)	ATE ≤ 50	50 < ATE ≤ 200	200 < ATE ≤ 1000	1000 < ATE ≤ 2000	
<b>Gases</b> (ppmV)	ATE ≤ 100	100 < ATE ≤ 500	500 < ATE ≤ 2500	2500 < ATE ≤ 20000	
<b>Vapours</b> (mg/l)	ATE ≤ 0.5	0.5 < ATE ≤ 2.0	2.0 < ATE ≤ 10.0	10.0 < ATE ≤ 20.0	
<b>Dusts and Mists</b> (mg/l)	ATE ≤ 0.05	0.05 < ATE ≤ 0.5	0.5 < ATE ≤ 1.0	1.0 < ATE ≤ 5.0	

**Acute Toxicity Label Elements**

	Category 1	Category 2	Category 3	Category 4	Category 5
Symbol					No symbol is used
Signal Word	Danger	Danger	Danger	Warning	Warning
Hazard Statement					
-Oral	Fatal if Swallowed	Fatal if Swallowed	Toxic if Swallowed	Harmful if Swallowed	May be harmful if swallowed
-Dermal	Fatal in contact with skin	Fatal in contact with skin	Toxic in contact with skin	Harmful in contact with skin	May be harmful in contact with skin
-Inhalation	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled	My be harmful if inhaled



*Severe*  
*Category 1-3*

*Acute toxicity can take two different symbols*



*Harmful*  
*Category 4*

## Should Earbuds be Allowed in the Workplace?



*“Blaring audio from earbuds could mask the sounds of moving equipment.”*

With more and more people owning wireless earbuds, listening to background music on the job- including in the lab- has become much more popular. While having background music helps many people to focus, earbud use in labs can pose some risks that should be considered. OSHA does not have specific guidelines regarding wearing earbuds or headphones in work settings. However, OSHA began consideration of the hazards these types of devices can pose with the rise in popularity of portable cassette players such as the Sony Walkman in the 1980s. In a 1987 letter regarding the use of the Walkman and similar radios in the workplace, OSHA directed that using earphones violated hearing protection standards when:

- Noise is above levels requiring hearing protection- 85 decibels or more over an 8-hour work day;
- Earphones are worn over hearing protection.

However, OSHA directed that use of headphones in the workplace was at the manager’s discretion as long as noise levels were below those requiring hearing protection, and that wearing them does not cause a serious safety hazard.

So, what are the potential risks of wearing earbuds in labs? Most importantly, wearing earbuds or headphones reduces your situational awareness, meaning you may not be as aware of what is going on around you. For example, earbuds can make it difficult to hear alarms, particularly those on equipment like fume hoods, freezers, and incubators. Additionally, adjusting earbuds or taking them out of your ears in the lab can lead to them being contaminated by what you are working with, either from your gloves, or from a spill, vapor, or aerosol.

As long as noise levels are not too high, both from the earbuds themselves and in the lab environment, and wearing them does not pose a safety hazard, it is up to the primary investigator and/or lab manager whether or not researchers can wear earbuds or other devices in the laboratory. However, it may be best to only have one earbud in so that you can hear what is going on around you, and to never touch your earbuds when wearing gloves.

One of the leading workplace hazards in the construction industry are “struck-by” deaths. Blaring audio from headphones and earbuds could mask the sounds of moving equipment, traffic or audible safety signals, thereby increasing the chances of struck-by occurrences.

There are no direct regulations from OSHA regarding use of earbuds or headphones in a workplace setting.

According to [29 CFR 1910.95\(b\)\(2\)](#), in Table G-16, administrative and engineering controls must be administered at a continuous 90 dBA or more for an 8 hour work day. If these controls fail, hearing protection must be provided.

According to [29 CFR 1910.95\(i\)\(2\)\(ii\)](#), employers must ensure hearing protection is worn when an employee is exposed to 85 decibels or higher over an 8-hour shift.

[From a letter issued by OSHA in April 1987 regarding the use of Walkmen](#), use is up to managerial discretion if the noise level is below those specified in Table G-16 of 29 CFR 1910.95(b)(2), and unless their use causes a serious safety hazard. Additionally, use of Walkman headsets over required ear protection is considered a violation.

## Chemical Spotlight: Hydrogen Sulfide

Hydrogen sulfide is a gas and is most dangerous when inhaled. Inhaling very large amounts of hydrogen sulfide can quickly cause respiratory paralysis, loss of consciousness, and death. Hydrogen sulfide is produced naturally from decaying organic matter and can be released from sewage sludge, liquid manure, and sulfur hot springs, as well as with natural gas. It is also used in or is a byproduct in many industrial processes including petroleum production and refining; sewer and wastewater treatment; agricultural silos and pits; textile manufacturing; pulp and paper processing; food processing; hot asphalt paving; and mining.

Inhaling very large amounts of hydrogen sulfide can quickly cause serious health problems. Symptoms of overexposure to hydrogen sulfide can include: Headache and dizziness, confusion, decreased coordination, visual disturbance, nausea, drowsiness, eye, nose, and throat irritation, and breathing difficulties

Prolonged exposure, even at lower levels, may lead to respiratory problems, appetite and weight loss, and headache. Hydrogen sulfide is not believed to accumulate in the body. Skin contact is not generally a problem with gases, though prolonged or major exposure could cause dermatitis.

Proper protective clothing is essential when working with hydrogen sulfide. Here's what you need to do.



Always read, if applicable, the hydrogen sulfide's safety data sheet (SDS) to identify the particular type of protection you need, such as gloves, clothing, or eye protection.

Because hydrogen sulfide is a serious inhalation hazard, workers at risk of exposure at or above permissible limits must use a self-contained breathing apparatus (SCBA) for protection.

Inspect all PPE before you use it, and remember to clean or dispose of PPE properly when you finish using it.

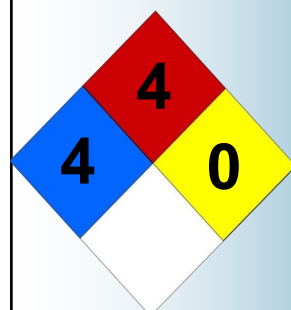
Hydrogen sulfide is a colorless gas that smells like rotten eggs. But because exposure to hydrogen sulfide can make you unable to recognize the smell, you can't depend on its odor to warn you. So be aware of any tasks or locations that could present exposure to hydrogen sulfide.

It's important to follow all applicable OSHA and company rules and procedures to avoid exposure to hydrogen sulfide. To avoid inhalation of hydrogen sulfide, use all assigned respirators and be sure ventilation is adequate where you are working .

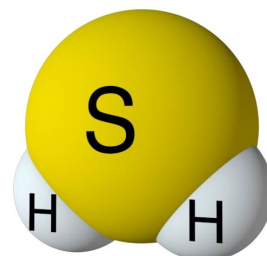
Don't attempt to rescue anyone exposed to hydrogen sulfide unless you are trained and equipped to do so. Anyone who inhales hydrogen sulfide should immediately get to fresh air and get medical attention.

In addition to being an inhalation hazard, hydrogen sulfide is flammable and explosive. Follow these steps to avoid such occurrences:

- Keep hydrogen sulfide away from heat, flame, sparks, or any ignition sources.
- Keep hydrogen sulfide away from oxidizers that could cause dangerous reactions.
- Do not smoke in the vicinity of hydrogen sulfide.
- Read labels and SDSs carefully for storage and handling instructions.



*“Prolonged exposure (to H<sub>2</sub>S), even at lower levels, may lead to respiratory problems, appetite and weight loss, and headache.”*

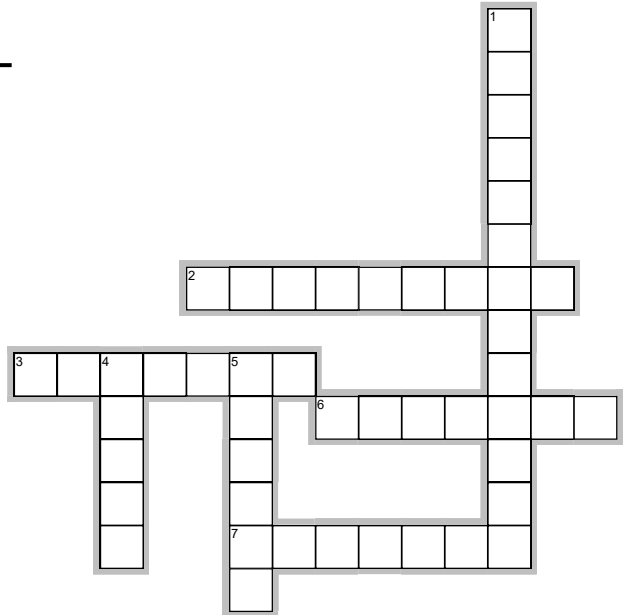


# Fun Page

F  
U  
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A  
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E

## Across

2. The \_\_\_\_\_ virus was mostly seen in Africa.
3. Hydrogen \_\_\_\_\_ is a colorless gas that smells like rotten eggs.
6. Improper \_\_\_\_\_ can lead to back sprains, strains, and herniated disks.
7. Blaring audio from headphones and \_\_\_\_\_ could mask the sounds of moving equipment.



## Down

1. Smallpox and monkeypox are both part of the \_\_\_\_\_ family.
4. swollen \_\_\_\_\_ nodes usually distinguish monkeypox from other poxes.
5. The two signal words for categories of acute toxicity are \_\_\_\_\_ and warning.

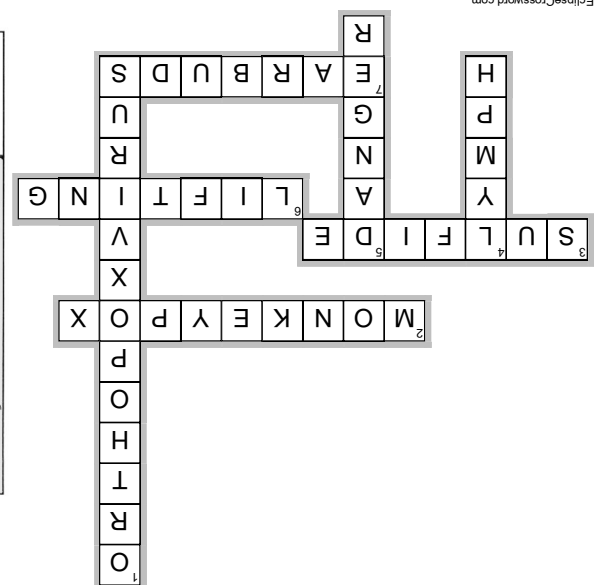
EclipseCrossword.com

## Funny Corner



"Helloooo... do the words 'ergonomic nightmare' mean anything to you people?"

## Puzzle Answers



EclipseCrossword.com



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### *Safety Quotes*

*When you  
gamble  
with  
safety, you  
bet your  
life.*

*~Author  
Unknown*

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