



**Sept/Oct  
2018**

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*"Safety Comes First"*

## **Case Western Reserve University Environmental Health and Safety**

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### ***Hearing Injuries...from Chemicals?***

October is National Protect Your Hearing Month. Did you know that hearing impairment can be caused by exposure both to noise and to chemicals? The impairment from either of those two exposures can be worse if there is exposure to both. Damage to hearing from chemicals is called ototoxicity. The chemicals in question are called ototoxicants. Industries that use potential ototoxicants include manufacturing, mining, utilities, construction, and agriculture. The many ototoxicants include pharmaceuticals, solvents, asphyxiants, nitriles, and metals and compounds.

Ototoxicants affect central portions of the auditory system. The effects include both loss of hearing and loss of clarity. Specifically, speech discrimination dysfunction—the ability to hear voices separately from background noise—may occur and involve compressed loudness (sound distortion). The following are some things you can do to protect yourself :

- Know that the chemicals are present in the workplace. Review the safety data sheets (SDSs) for ototoxic substances and/or chemicals.
- Ask a supervisor if it's possible to replace a hazardous chemical with a less toxic chemical.
- Use engineering controls, like isolation and enclosures, to control exposure to ototoxicants and noise.
- Talk to your supervisor to see what unnecessary tasks that cause noise or ototoxicant exposure can be avoided.

Wear the appropriate personal protective equipment assigned by your employer, including hearing protection and hand protection. Wearing chemical-protective gloves, arm sleeves, aprons, and other appropriate clothing can assist in reducing dermal exposure, as many ototoxic substances can be absorbed through the skin.

Source: Safety.BLR

## Workstation Ergonomics-Computer Monitor



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### *How to properly use a computer monitor*

Placing a computer monitor correctly is key to avoiding awkward body postures that lead to neck and back pain, as well as eyestrain.

### **How should you position the computer monitor?**

Place the computer monitor so that you can easily read text displayed. Your head and torso should be upright, and your back should be supported by your chair. Position the monitor directly in front of you.

If you are working with printed materials, do not place the materials flat on a table. Instead, place the materials on a document holder that attaches to the top left or right corner of the monitor. Your documents should be close to your monitor and the same distance from your gaze. This will prevent awkward postures such as turning your head to see your screen or printed materials properly.

### **How do you adjust the monitor for eye level?**

Place the top one-third of the computer monitor's screen at or directly below your natural gaze. Place the monitor between 18 and 24 inches from your eyes (or about one arm's length away.) If you reach out, your fingertips should be able to touch, or almost touch, the screen of your monitor.

Placing the monitor too far from you or too close to you can cause eyestrain and back and neck pain. Adjust the height of your chair, or remove or add risers under the monitor to adjust your viewing angle.

If you are a bifocal user, lower the monitor or raise the chair height so you can maintain the appropriate neck posture. Tilt the monitor up toward you if needed. Watch out for glare when adjusting the tilt of your monitor.

### **How much time do you spend using the monitor?**

Do not stare at the computer monitor for long periods of time. This causes eye fatigue and dryness. Often, users will blink less when viewing a monitor. Every now and then, focus on objects that are far away.

Give your eye muscles a chance to relax. Look away from the screen, and blink at regular intervals to moisten your eyes. Alternate your tasks with other work duties that do not involve using the computer.

### **What is the proper amount of lighting to use?**

Make sure you have proper lighting at your workstation. The light should be enough for you to clearly see the monitor screen and your printed materials but not so bright that there is a glare on the monitor screen. If available, use the monitor's function keys to adjust your brightness and contrast settings to reduce eyestrain.

*Source: Safety.BLR*

## *Indoor Pesticide Use*

Fall is the time of year when pests begin to move in with you for the winter. No, not unwelcomed relatives, but insects and rodents.

Pesticides aren't used just for pesky bugs. According to the EPA, pesticides are chemicals used to control pests, which include bacteria, fungi, and other organisms, as well as insects and rodents. Over 75% of U.S. households use indoor pesticides that come in the form of sprays, liquids, sticks, powders, crystals, balls, and foggers. These products contribute to poor indoor air quality.

Whether you are at work or at home, use these steps to reduce your exposure to harmful pesticides and maintain good indoor air quality.

- When possible, use a nonchemical pesticide method.
- Keep your home clean, dry, and ventilated in order to avoid a pest or odor problem.
- Use only pesticides that are approved for the general public at home.
- Read the pesticide label for instructions for use. Check for any hazards on the label.
- Use only the recommended amount of the pesticide.
- Mix or dilute the pesticide if needed.
- Ventilate the area as much as possible when using pesticides. Open windows or doors for air flow. Take plants or pets outside when applying pesticides or flea/tick chemicals.
- Throw out pesticides that you do not need to reduce the amount of extra chemicals in your home. Make sure to dispose of the containers in a safe method.
- If you use moth repellents on your clothing, keep those clothes in a separately ventilated area.

*Source: Safety.BLR*



*“Over  
75% of  
U.S.  
house-  
holds use  
indoor  
pesticides  
that...  
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poor in-  
door air  
quality.”*

## 2018 Illnesses from *Salmonella*?



*“Kratom is a plant consumed for its stimulant effects and is used as an opioid substitute.”*

**On January 3, 2018:** Evershing International Trading Company recalled all 16 oz. Coconut Tree Brand Frozen Shredded Coconut after *Salmonella* Newport was identified in the product.

**On February 21, 2018:** Triple T Specialty Meats, Inc. recalled all chicken salad produced from January 2, 2018 to February 7, 2018 possibly contaminated with *Salmonella* Typhimurium.

**Posted February 28, 2018:** Epidemiologic evidence indicated that raw sprouts were the likely source of this multistate outbreak of *Salmonella* Montevideo. Infected people in this outbreak reported eating raw sprouts on sandwiches served at Jimmy John’s restaurants in Illinois and Wisconsin.

**On March 16, 2018:** International Harvest, Inc. recalled bags and bulk packages of Organic Go Smile! Raw Coconut and Go Smiles Dried Coconut Raw possibly contaminated with *Salmonella* Typhimurium.

**On March 19, 2018:** Vitamin Cottage Natural Food Markets, Inc. recalled packages of Natural Grocers Coconut Smiles possibly contaminated with *Salmonella* Typhimurium.

**On March 29, 2018:** Healthy Nut Factory recalled 7-ounce pouches of Organic Coconut Smiles possibly contaminated with *Salmonella* Typhimurium.

**On April 13, 2018:** Rose Acre Farms of Seymour, Indiana, voluntarily recalled 206,749,248 shell eggs because they could have been contaminated with a strain of *Salmonella* Braenderup.

**Posted May 24, 2018:** Several companies recalled kratom products because they might be contaminated with *Salmonella*. Kratom is a plant consumed for its stimulant effects and is used as an opioid substitute.

**On June 14, 2018:** The Kellogg Company recalled Honey Smacks cereal as it could be contaminated with *Salmonella* Mbandaka and make people sick.

**On July 17, 2018:** Hy-Vee, Inc. recalled its Spring Pasta Salad because it might have been contaminated with *Salmonella*.

**Posted July 19, 2018:** Epidemiologic and laboratory evidence indicates that raw turkey products from a variety of sources are contaminated with *Salmonella* Reading.

**Posted July 26, 2018:** Caito Foods, LLC of Indianapolis, Indiana was the likely source of a multistate outbreak of *Salmonella* Adelaide infections from pre-cut melon.

**Posted August 29, 2018:** Eight people have been hospitalized, including one death reported in New York as a result of kosher chicken products contaminated with *Salmonella* Reading from the Empire Kosher brand.

**On September 8, 2018:** Gravel Ridge Farms recalled cage-free large eggs possibly contaminated with *Salmonella* Enteritidis.

## 2018 Illnesses from *Salmonella*?, cont.

(Continued from page 4)

### What is *Salmonella*?

*Salmonella* is a bacteria that makes people sick. It was discovered by an American scientist named Dr. Salmon, and has been known to cause illness for over 125 years. The illness people get from a *Salmonella* infection is called salmonellosis.

Most people infected with *Salmonella* develop diarrhea, fever, and abdominal cramps between 12 and 72 hours after infection. The illness usually lasts 4 to 7 days, and most individuals recover without treatment. In some cases, diarrhea may be so severe that the patient needs to be hospitalized. In these patients, the *Salmonella* infection may spread from the intestines to the blood stream, and then to other body sites. In these cases, *Salmonella* can cause death unless the person is treated promptly with antibiotics. The elderly, infants, and those with impaired immune systems are more likely to have a severe illness<sup>1</sup>.

### How Common is *Salmonella* Infection?

CDC estimates *Salmonella* causes about 1.2 million illnesses, 23,000 hospitalizations, and 450 deaths in the United States every year. Among these illnesses, about 1.1 million are acquired in the United States. Among the illnesses acquired in the United States, CDC estimates that food is the source for about 1 million illnesses, 19,000 hospitalizations, and 380 deaths.

There are many different kinds of *Salmonella* bacteria serotypes. [Salmonella serotype Typhimurium](#) and [Salmonella serotype Enteritidis](#) are the most common in the United States. *Salmonella* infections are more common in the summer than winter.

### Who is at Highest Risk for *Salmonella* Infection?

Children are at the highest risk for *Salmonella* infection. [Children under the age of 5 have higher rates of \*Salmonella\* infection than any other age group.](#) Young children, older adults, and people with weakened immune systems are the most likely to have severe infections.

### Are there Long-Term Consequences to a *Salmonella* Infection?

People with diarrhea due to a *Salmonella* infection usually recover completely, although it may be several months before their bowel habits are entirely normal. A small number of people with *Salmonella* develop pain in their joints. This is called reactive arthritis. Reactive arthritis can last for months or years and can lead to chronic arthritis, which can be difficult to treat. Antibiotic treatment of the initial *Salmonella* infection does not make a difference in whether or not the person develops arthritis. People with reactive arthritis can also develop irritation of the eyes and painful urination.

Source: CDC

*“A small number of people with *Salmonella* develop... reactive arthritis.”*



## 63<sup>rd</sup> Annual Health Physics Society Meeting



***“Some of our staff members also were directly involved in organizing the venue for some of the major seminars.”***

The 63<sup>rd</sup> Annual Meeting of the Health Physics Society met in Cleveland this summer from July 15 to July 20, 2018. The main sessions of the meeting were held in downtown Cleveland at the Convention Center, but a number of our surrounding Institutions played major roles in meeting organization, execution and as education centers for specific program subjects. Specifically, Case Western Reserve University and University Hospital personnel coordinated or delivered several courses for the conference at CWRU. These included MRI Safety, by David Jordan, X-ray, C and ACR Accreditation by Chris Martel, Patient Dosimetry, by Peter Caraccapa, Nuclear Medicine Response to Exotic Spill and Issues by Joseph Ring, and Image-Guided Interventions by Rameses Herrera.

Radiation Safety Staff Members attended the National Meeting, acquainted themselves with new instrumentation useful to CWRU’s Radiation Safety Program and attended a variety of interesting seminars that were part of the meeting’s extensive program. For example, to hone their skills in meter calibration, two of our staff members attended a compressed crash course on this topic specific to Ludlum meters to make sure we were employing the most up to date approaches for meter calibration in our departmental laboratory. One manager also attended a talk on “Being Relevant to your Institution” to get tips on development of ideas that can be used to develop administrative methods to improve our programmatic approaches. David Jordan from UH gave an excellent talk on “MR Safety: A Health Physics Approach” that included a large number of useful illustrations and examples that were useful for human research and clinical MRI. This material, by extrapolation, covered topics of direct relevance to safe use of MRI in our animal research programs that fall under direct purview of our Department.

Some of our staff members also were directly involved in organizing the venue for some of the major seminars. One of these seminar sessions that was enthusiastically attended was used as a forum for senior health physicists to reflect on the history of their careers in talks that followed the evolution of their current positions in the context of colleagues who helped them change directions and implement new insights at critical career junctions. These talks illustrated how each person can keep an eye open for informative opportunities that may significantly affect the course of their careers. One of the talks in this session also speculated on how accelerating advancements in information technology may shape the future of health physics careers.

As with most National meetings, one of the most valuable parts of the experience was to get together with colleagues from across the country to hear their stories about working as Health Physicists in different contexts. Such interaction builds valuable contacts that can be brought to your home base of operations to generate new enthusiasm for the work you are carrying out. The interactions also provide useful contacts to help with resolution of unexpected problems and exploitation of opportunities.

CWRU EHS Staff

## Chemical Spotlight: Vinyl Chloride

Vinyl chloride is a colorless gas. This gas burns easily and is not stable at high temperatures. This substance is manufactured and does not occur naturally. Vinyl chloride is used to make polyvinyl chloride (PVC), which is then used to make plastic products, including pipes, wire and cable coatings, and packaging materials. You can breathe in vinyl chloride that has been released from plastics industries, hazardous waste sites, and landfills.

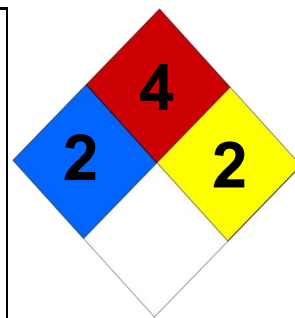
Vinyl chloride in its liquid form will evaporate easily. In water or in soil, this chemical evaporates rapidly if it is near the surface. Small amounts of vinyl chloride can dissolve in water. In the air, vinyl chloride breaks down in a few days to other substances, some of which can be harmful.

If vinyl chloride is spilled:

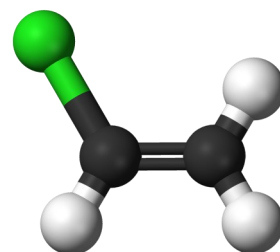
- Evacuate everyone, and secure and control the entrance to the area.
- Remove all ignition sources.
- Stop the flow of gas. If leaking from a cylinder, remove the leaking cylinder to a safe place in the open air. Repair the leak, or allow the container to empty.
- Turn the leaking cylinder so that the leak is upward to prevent the escape of gas in liquid state.
- Because of the possibility of explosion, keep vinyl chloride out of confined spaces, such as sewers.
- Vinyl chloride may need to be contained and disposed of as a hazardous waste. Contact your state environmental department or EPA regional office for questions about proper disposal.



Source: Safety.BLR



*“...vinyl chloride breaks down in a few days to other substances, some of which can be harmful.”*

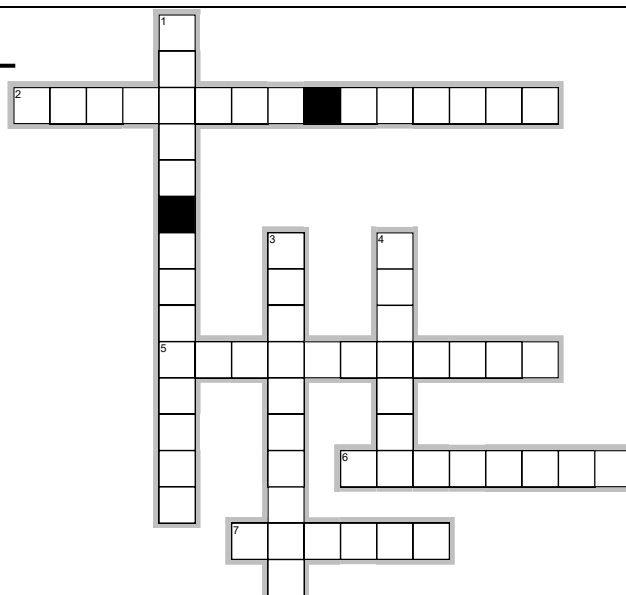


# Fun Page

# F U N P A G E

## Across

2. Last name of EHS associate featured in this issue.
5. Damage to hearing from chemicals is called \_\_\_\_\_.
6. Individuals with a Salmonella infection can develop pain in their joints called \_\_\_\_\_ arthritis.
7. Cleveland hosted the 63rd Annual Meeting of the \_\_\_\_\_ Physics Society.

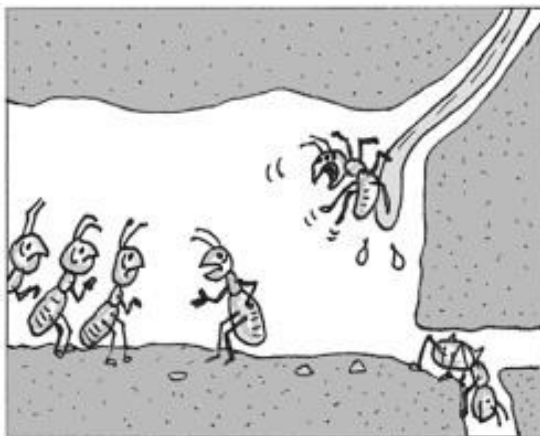


EclipseCrossword.com

## Down

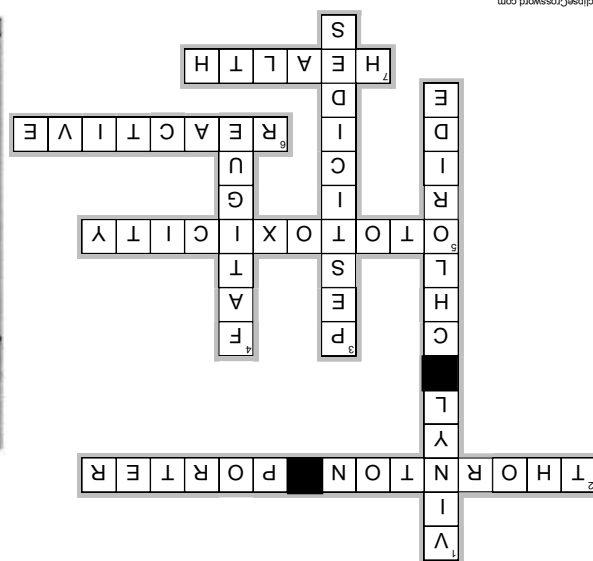
1. This is a colorless, flammable gas that's used in the manufacturing of plastic products.
3. \_\_\_\_\_ are chemicals used to control bacteria, fungi, and other organisms, as well as insects and rodents.
4. Staring at the computer monitor for long periods of time causes eye \_\_\_\_\_ and dryness.

## Funny Corner



"Hazards include human feet, insecticides, magnifying glasses, and... oh yeah, anteaters."

## Puzzle Answers



EclipseCrossword.com

## *Environmental Health and Safety Staff*

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**Felice THORNTON-PORTER** (fst2), Assistant Director of Radiation Safety, ARSO  
**Paula ZUPKE** (pez5), Student Safety Specialist



***Meet  
Felice Thornton  
Porter***

Assistant Director of  
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***Contact Felice  
with all  
questions and  
concerns about  
radiation safety***

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