Hazards of Hurricane Sandy Clean-Up

HOW TO PROTECT YOURSELF

Caution

This training does not replace any training that your employer is required to provide.

This training does not provide the knowledge and skills needed to perform asbestos removal or lead removal.

This training is mean to prepare you to recognize hazards

Workplace Justice: WORKERS' SAFETY AND HEALTH

SAFETY HAZARDS

Are anything that can create a physical hard or injury

SLIPS

Happens due to low traction between shoes and surface. Wet, grease, snow

TRIPS

Happens when the lower part of the body, while in movement, hits an object/materials

FALLS

Happens due to the loss of balance on an uncovered edge/elevation

SLIPS

- Poor cleaning
- Lack of signs
- Lack of training
- Lack of mats and other measures that make the floor less slippery
- Use of slip-resistant shoes

TRIPS

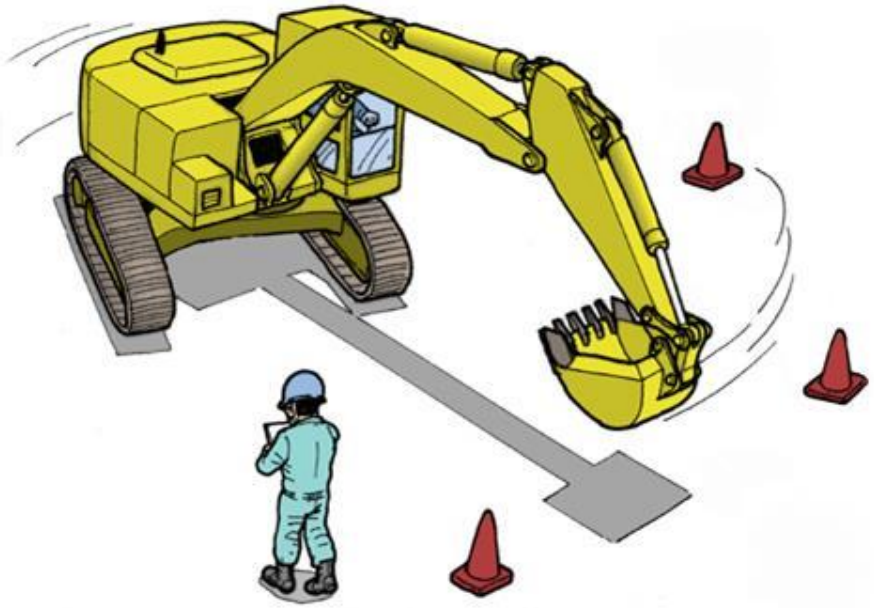
- Poor housekeeping
- Uneven floors, tiles, stairs
- Uncovered/Unfixed holes on the floor
- Loose cables
- Lack of signs
- Lack of training

FALLS

- No “Standard Railing Systems” such as hand and stair rails
- Lack of railing around opening on the floor or elevated surfaces
- Lack of training
- Lack of fall protection

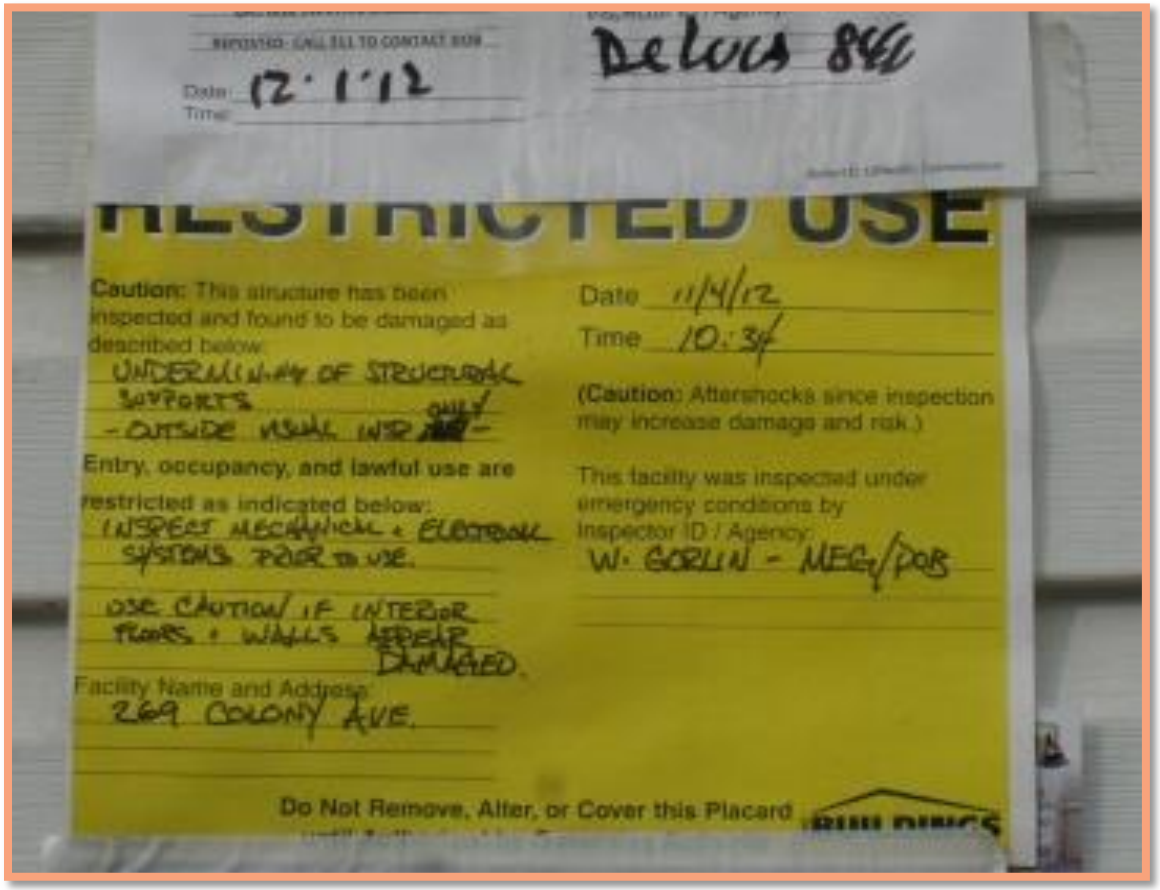
STRUCK-BY:

Unsafe/partially collapsed buildings
Falling objects (building materials)
Falling trees/branches during trimming
Falling debris during removal/demolition



RED - UNSAFE AREA: Do not enter or occupy!

Source: New York City Department of Buildings



YELLOW - RESTRICTED USE: This house is damaged. Do not enter without permission!

Source: New York City Department of Buildings

GREEN - INSPECTED: No reports of unsafe conditions. Proceed with caution.

Source: New York City Department of Buildings

MACHINERY AND POWER TOOLS

Bruits, Cuts and Amputations

MACHINERY AND POWER TOOLS

- Get caught in-between moving parts

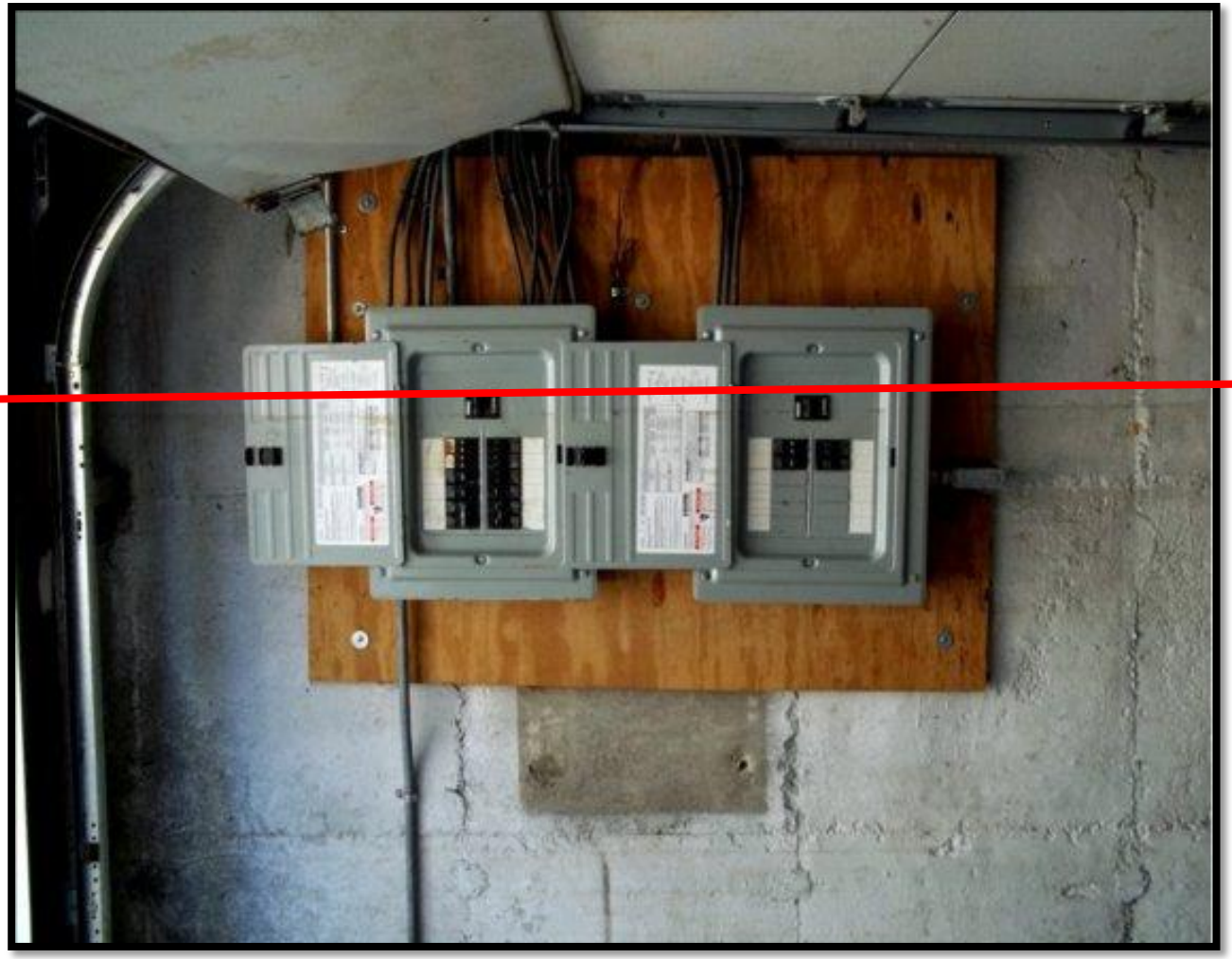
- Electrical shock or electrocution due to loose or broken wires

WORK ZONE: TRANSPORTATION HAZARDS

Workers, emergency responders and residents are at risk of being hit by moving vehicles.

ELECTRICAL HAZARDS

ELECTRICAL HAZARDS



BURNS (minor), SHOCKS (severe), and ELECTROCUTION (fatality)

Assume power lines are ‘energized’
LOOK for damaged wires, cracked/ wet power outlets
Use extension cords safely and correctly
Use appropriate, heavy duty electrical equipment
Never work with electricity while wet

Confined Space

By definition, a **confined space**:

1. Is large enough for an employee to enter fully and perform assigned work,
2. Is not designed for continuous occupancy by the employee, and
3. Has a limited or restricted means of entry or exit.

Closed Spaces

HEALTH HAZARDS

Are anything at work that can cause illness or damage to your health

A hurricane causes a hazard of

FLOOD WATER

FLOOD WATER
Is a mix of raw sewage and sand

Sewage systems stops working and raw sewage is dumped into waterways

Backflow of sewage goes into buildings

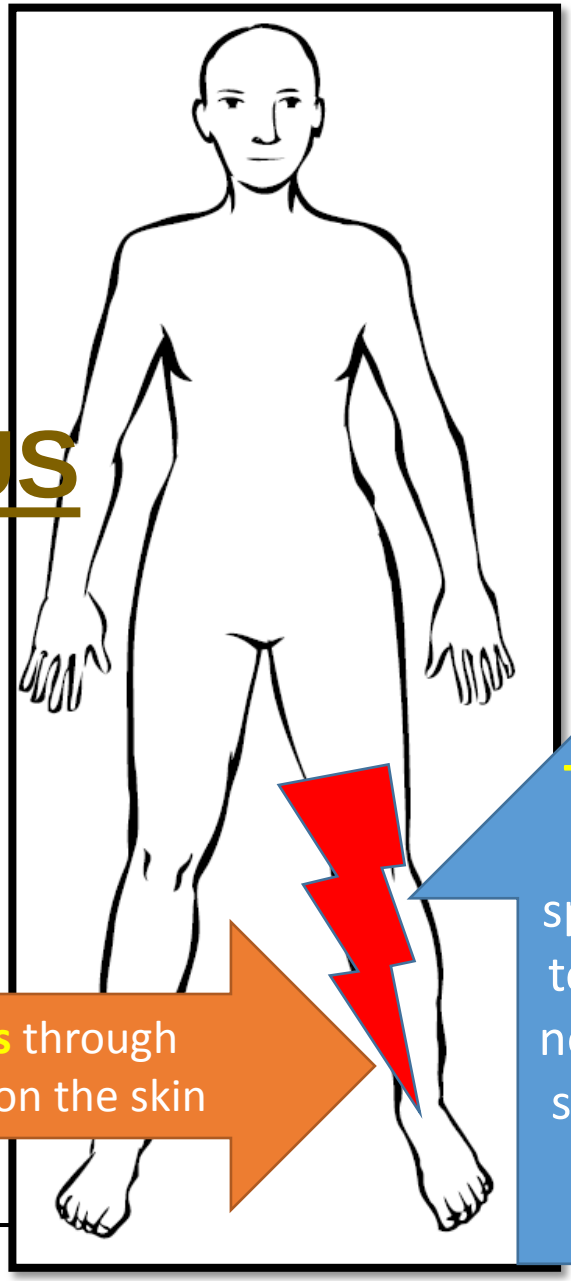
Buildings, materials and, anything that has been touched by floodwater can contain and spread infectious germs and bacteria

Worker In a flooded site

Can be exposed to bacteria

Symptoms: Can cause nausea, vomiting, diarrhea, abdominal cramps, muscle aches, and fever

Health Hazards: **TETANUS**



Bacteria **enters** through cuts/punctures on the skin

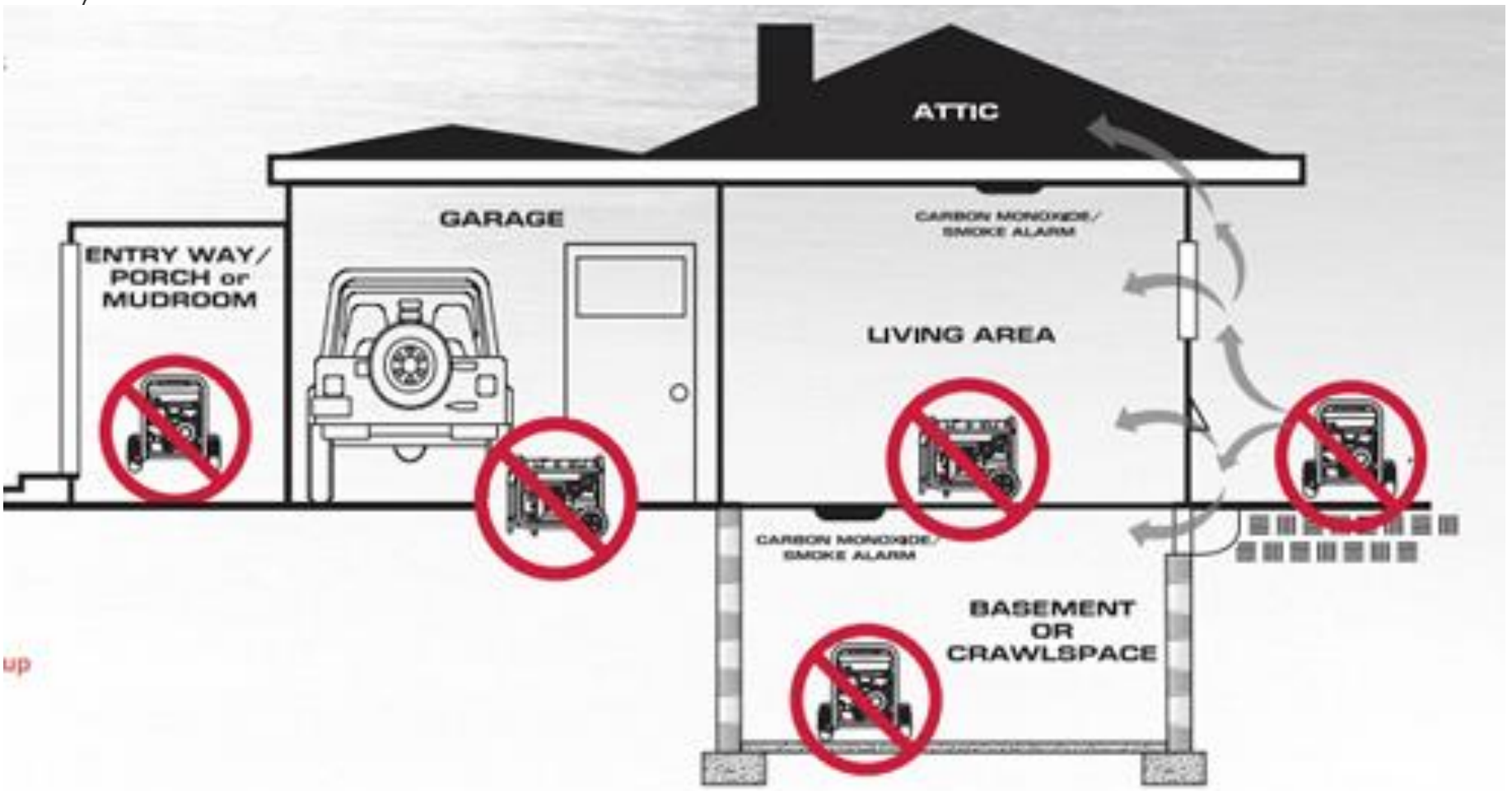
Then, it spreads to your nervous system

May begin as a headache later develops into difficulty swallowing or opening the jaw

Then, severe symptoms:
Spasm of vocal cords; respiratory muscles causing problems to breathe. The stiff of muscles can fracture the spine or bones

Other: elevated blood pressure, abnormal heartbeats, coma, clotting in the blood vessels of the lung, and pneumonia.

Portable Generator Hazards



Never use generators inside or close to windows, ventilation or doors.

Recognition of Carbon Monoxide Poisoning

ACTIVITY:
IDENTIFYING HAZARDS

A

B

C

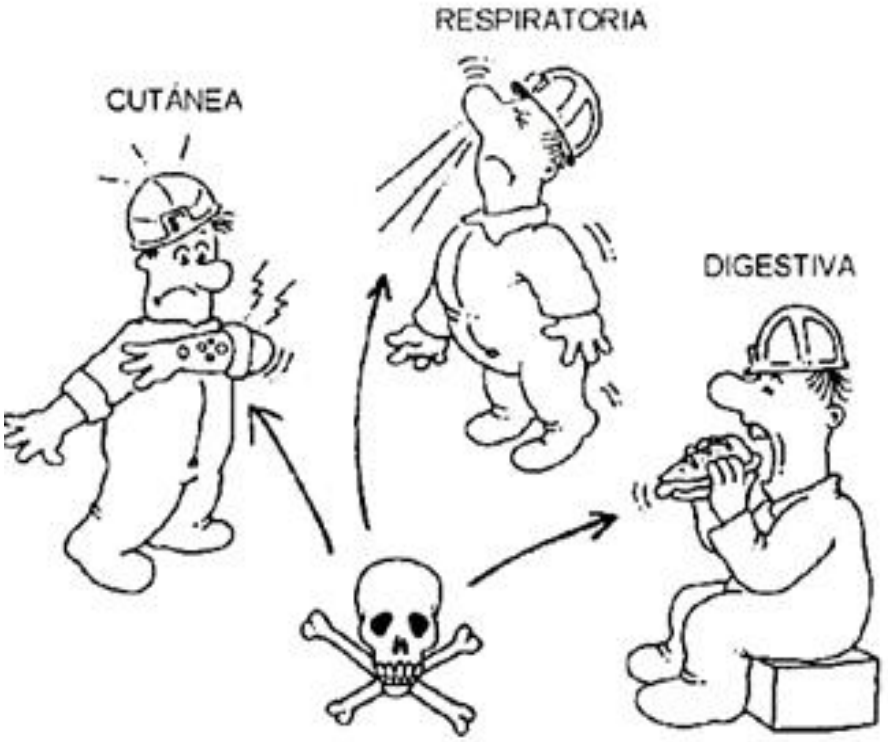
D

E

CHEMICALS HAZARDS

are present when a worker is exposed to a chemical in the workplace.

How do chemical toxins enter the body?



What happens when chemicals get into the body?

INMMEDIATE EFFECTS

- ❑ Headache
- ❑ Dizziness
- ❑ Cough
- ❑ Sore Muscles
- ❑ Rash
- ❑ Drowsiness

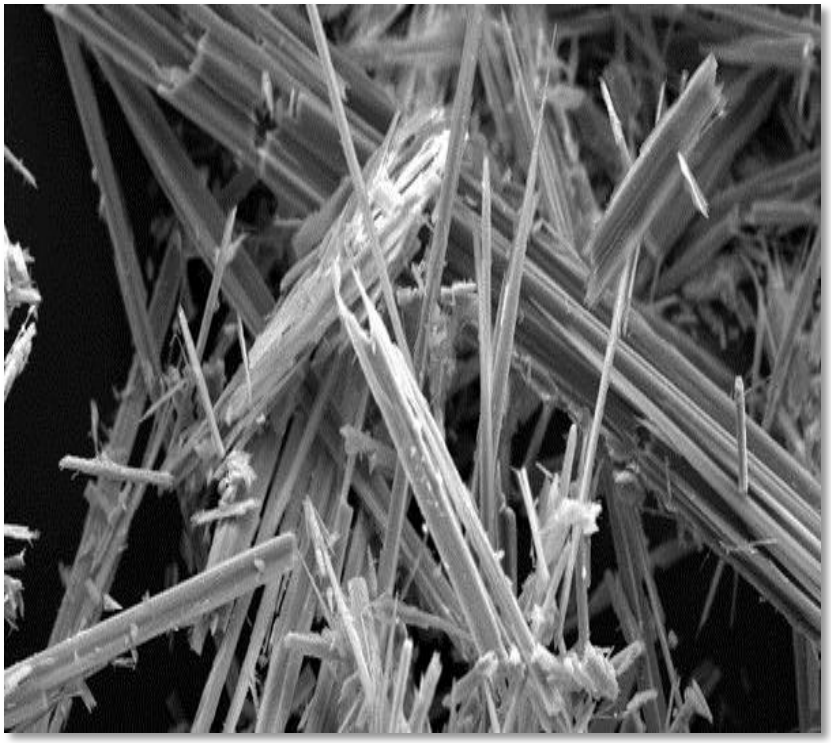
- ❑ Asthma
- ❑ Chronic Cough

- ❑ Reproductive Problems
- ❑ Nervous system effects

LONG TERM EFFECTS (1 – 20 years)

- ❑ Cancer
- ❑ Death

ASBESTOS



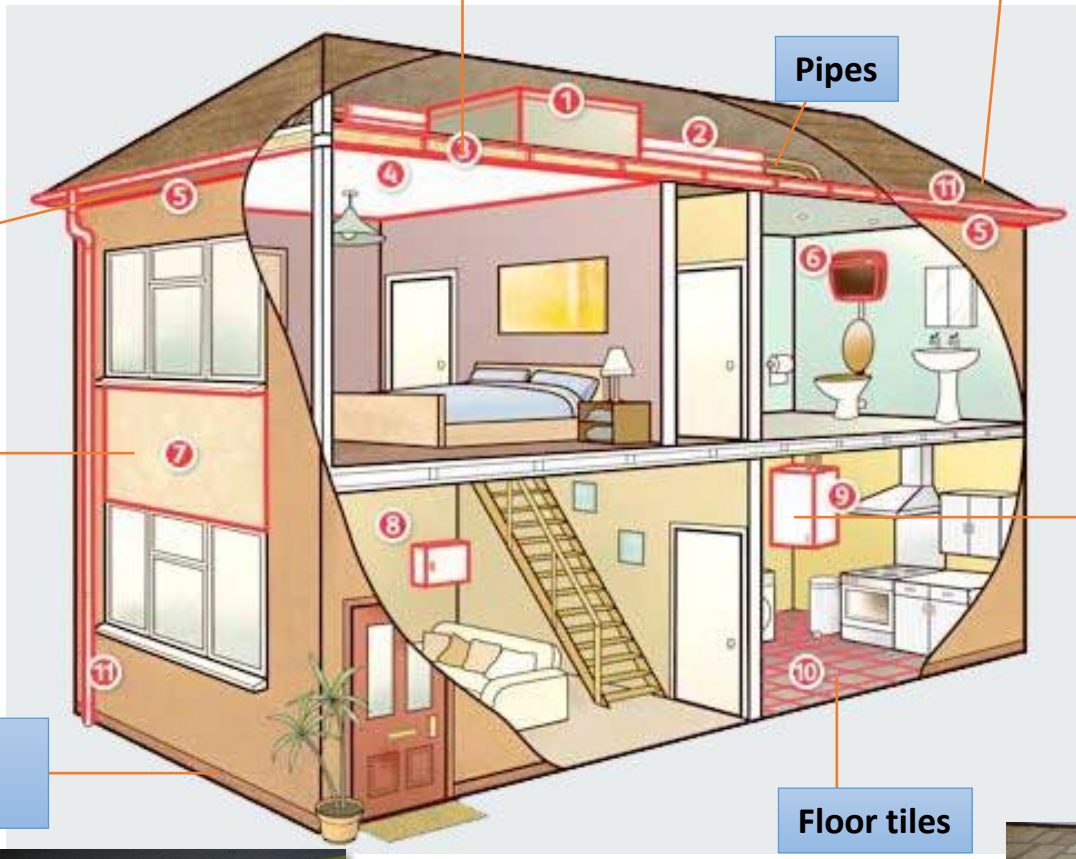
Microscopic fibers mixed with other materials to make products.

Insulation

Roof

Pipes

Ceiling



Wall panel joints

Heater cupboard

Basement:
Boiler and Pipes

Floor tiles

Can asbestos be identified by a worker?

No. Use a rule of thumb:

For structures built before 1980, assume asbestos is present.

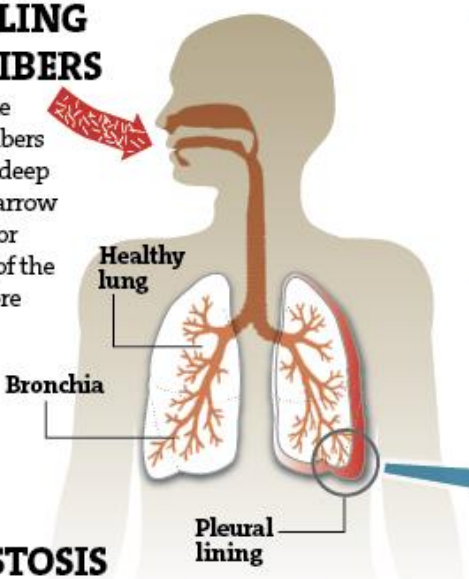
When asbestos products are disturbed and cause airborne dust, they are a hazard.

Asbestos fibers can remain in the air for hours and days, even if they are not seen.

ASBESTOS AND LUNG DISEASE

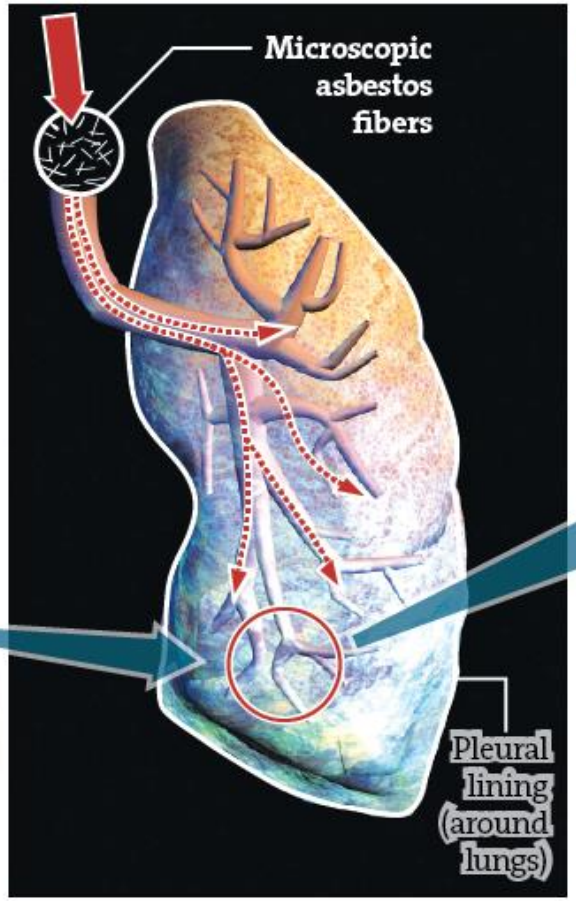
1 INHALING THE FIBERS

Needle-like asbestos fibers can travel deep into the narrow branches, or bronchia, of the lungs before sticking.



2 ASBESTOSIS

Accumulation of fibers causes inflammation and scarring of the airways. That leads to chronic coughing and chest pain — symptoms of asbestosis.



3 MESOTHELIOMA

The pleural lining becomes inflamed and plaque builds up, restricting breathing. The condition may progress to mesothelioma, cancer of the pleural lining.

Source: National Insititute of Occupational Safety and Health, N.Y. Times, Agency for Toxic Substances and Disease Registry

MARK BOSWELL and DAVE SHAFFER • Star Tribune

Protection from Asbestos

- AVOID exposing yourself to asbestos dust.
- Do not enter work areas where asbestos products are being removed.
- Be trained and certified

LEAD

Lead is a heavy metal that is found naturally in the Earth.

Lead used to be added to paint to keep it from rusting and to help it last a long time.

Lead-based paint is a hazard if it is chipping, crumbling, deteriorated or being disturbed.

Indoor walls

Stairwells

Window sills

Porches

Radiators

Common Construction Activities that Generate Lead Dust

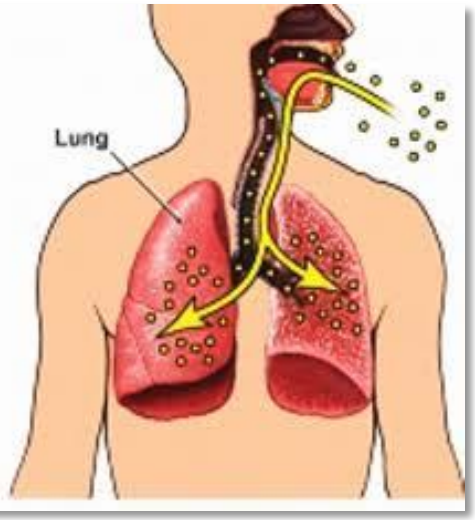
- Demolition
- Flame-torch cutting

- Welding
- Use of sanders, scrapers, or heat guns
- Blasting steel structures

How does lead enter the body?

1. Lead paint chips get broken down into dust.

2. People BREATHE lead dust in through their mouth and nose;



3. People EAT lead dust with hand to mouth contact

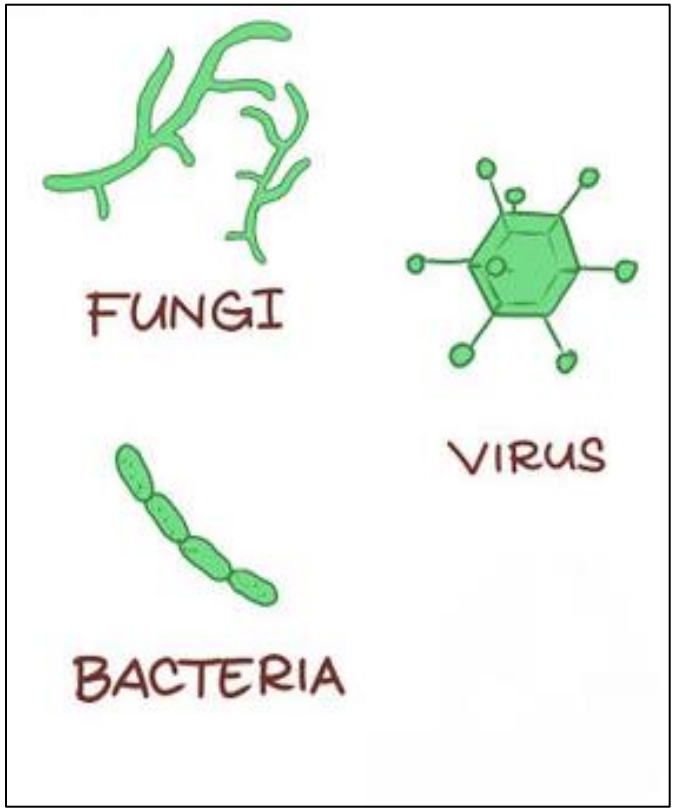
Once lead enters the body it gets into your blood stream

LEAD TRAVELS

Lead can travel workplace to worker from worker to family.

Lead Contractor and Worker should

- Use an industrial vacuum cleaner with a HEPA air filter to clean up dust and debris.
- Properly dispose of all lead contaminated materials. They are “Hazardous Waste.”
- Certified contractors will spray down work zone with water to reduce dust.
- Certified contractors cover surrounding area with plastic.



BIOLOGICAL HAZARDS

Exposure to living things or products of living things that can cause human illness.

MOLD

- IT COMES IN DIFFERENT COLORS AND SHAPES
- TO GROW, IT NEEDS:
    1. WATER
    2. MILD TEMPERATURE
    3. FOOD (ORGANIC, POROUS Material)

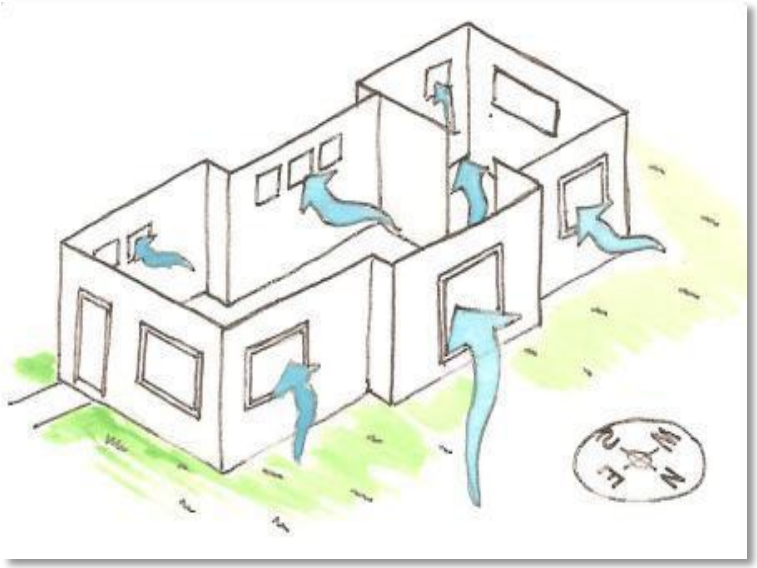
Identifying Mold

Mold will grow on most household surfaces that have gotten wet, including:

- Drywall
- Carpet
- Padding
- Upholstery
- Floor and ceiling tiles
- Insulation material
- Wooden support beams
- Furniture

Mold Clean Up

1. Clean up area must be well ventilated with fresh air



2. **Soft surface**, such as carpet, drywall and furniture must be carefully removed and thrown away

3. Hard surfaces, such as concrete floors use:

- soap and water
- stiff brush
- If bleach or biocides (not recommended) - use your half face respirator!

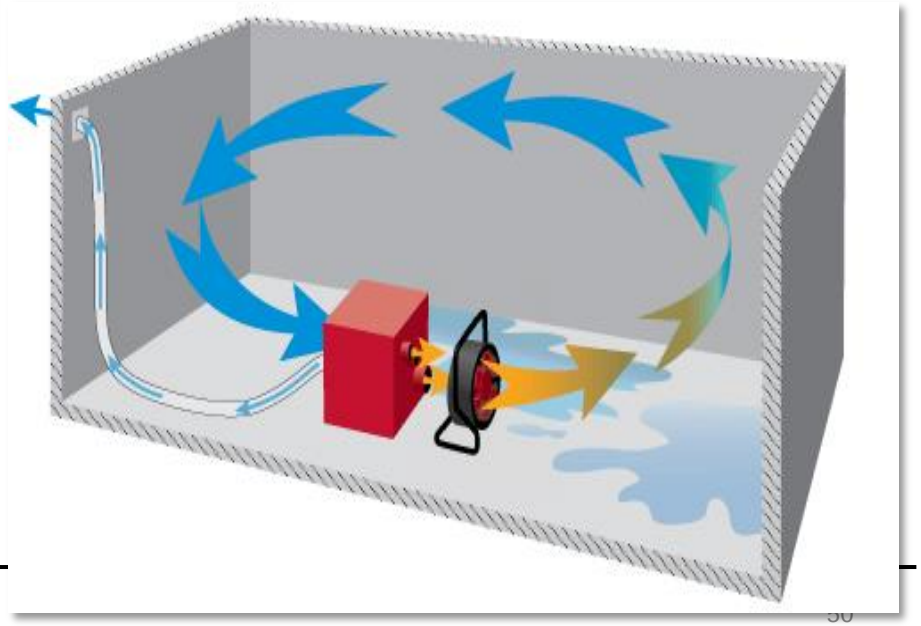
Mold Clean Up

4. **After** cleaning, vacuum the area using a HEPA vacuum:

- Vacuum has to have **HEPA** filtration system and be well sealed to prevent dust from escaping.

5. To prevent mold from growing back, worksite has to be completely dry after cleaning, use:

- ✓Dehumidifer
- ✓Fans



Mold Health Hazards

The hazard of mold is from spores that are present on surfaces or in the air.

It is hazardous if:

- ❑ You breathe it in
- ❑ It contaminates your skin

Mold Personal Protective Equipment

- **Half-face respirators -** These should be used. If this is not possible, N-95s are suitable.
- **Chemical resistant gloves -** Avoid touching mold or moldy items with your bare hands. Wash exposed skin immediately after contact.
- **Safety goggles -** To prevent eye irritation.
- **Skin covering -** Cover skin with clothing. If possible wear a Tyvex suit.

Acknowledgements

This training program is based on recommendations from NIEHS, NIOSH, OSHA and USW. Additional information and resources are available at their web pages:

- **OSHA** Fact Sheets, Info Sheets and Hazard Alerts:

http://www.osha.gov/pls/publications/publication.athruz?pType=Types&pID=2

- **Caravanos, J.** 2012. 'Hurricane Sandy: Protecting Workers and Volunteers from Mold' http://ophponline.umdnj.edu/mediasite/Viewer/?peid=5e7e3002237049789 92e9fdb382eca531d
- **NIEHS** Hurricane Sandy Resource Page:

http://tools.niehs.nih.gov/wetp/index.cfm?id=2472

- **USW** Training Materials (Written and produced by the Tony Mazzocchi Center for Health, Safety and Environmental Education):
- 'Mold remediation project'. 2010, edition 3, draft 1
- 'Basic Health and Safety Training for Devastated Communities'. 2010, edition 3, draft 1
- 'Process Safety Training'. 2007. Edition 8, Draft 1

Thank you!