

Thank you Missah.

In this lesson, we discuss Safety Precautions, face and eye protection, various types of PPE, disposal, and decontamination procedures.

So please stay safe and good studying.

Safety Standards and OSHA Regulations

- EMS providers are much more likely to be injured on the job due to conditions at the scene
- Best practice preparedness
- OSHA, NREMT and NHTSA guidelines
- Non-compliance could be fatal

OSHA® Occupational Safety and Health Administration
www.osha.gov



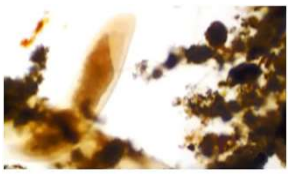
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OSHA guidelines effectively balance timely medical treatment for the patient and the need to protect the EMS provider as well. Hence, we examine OSHA, NREMT, and NHTSA's best practices to help you and your colleagues stay as safe as possible.

Methods to Maintain Hand Hygiene

- Methods to maintain hand hygiene
  - ✓ Regular hand washing and keeping them dry
  - ✓ Alcohol based hand rubs that has minimum 60% alcohol
  - ✓ Usage of gloves
- Procedures for handwashing and using Alcohol based rubs
  - ✓ 40 to 60 seconds of washing using water and handwash
  - ✓ Make sure you use Alcohol based hand rubs before and after touching a patient even if you are wearing gloves





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So, why do we reinforce hand hygiene? Well, it's bad enough if you get yourself sick. But what if it's the patient or hospital clinicians you put at risk too.

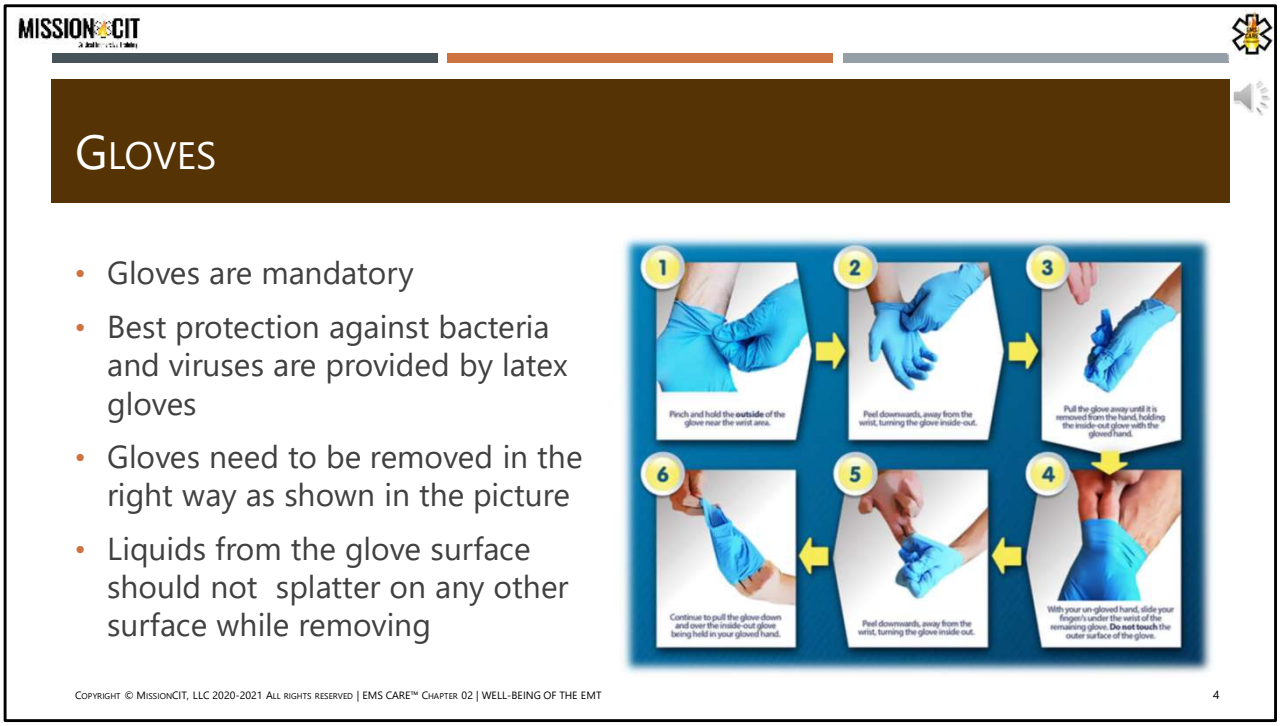
A 2015 study on Hand Washing Practices Among Emergency Medical Services staff concluded that pre-hospital providers have poor hand hygiene. The study concluded that change in practice is needed. As infection control is part of an EMT's job, developing good hygiene habits is essential for the best possible outcomes.

- Hand washing using soap and water,

- Antiseptic hand wash or lotions,
- Alcohol based gel or foam hand sanitizer, and
- Other approved antiseptic hand rubs.

The CDC recommends washing hands with soap and water when visibly soiled with blood or other bodily fluids. Here is a list of six recommended times to wash your hands with soap and water:

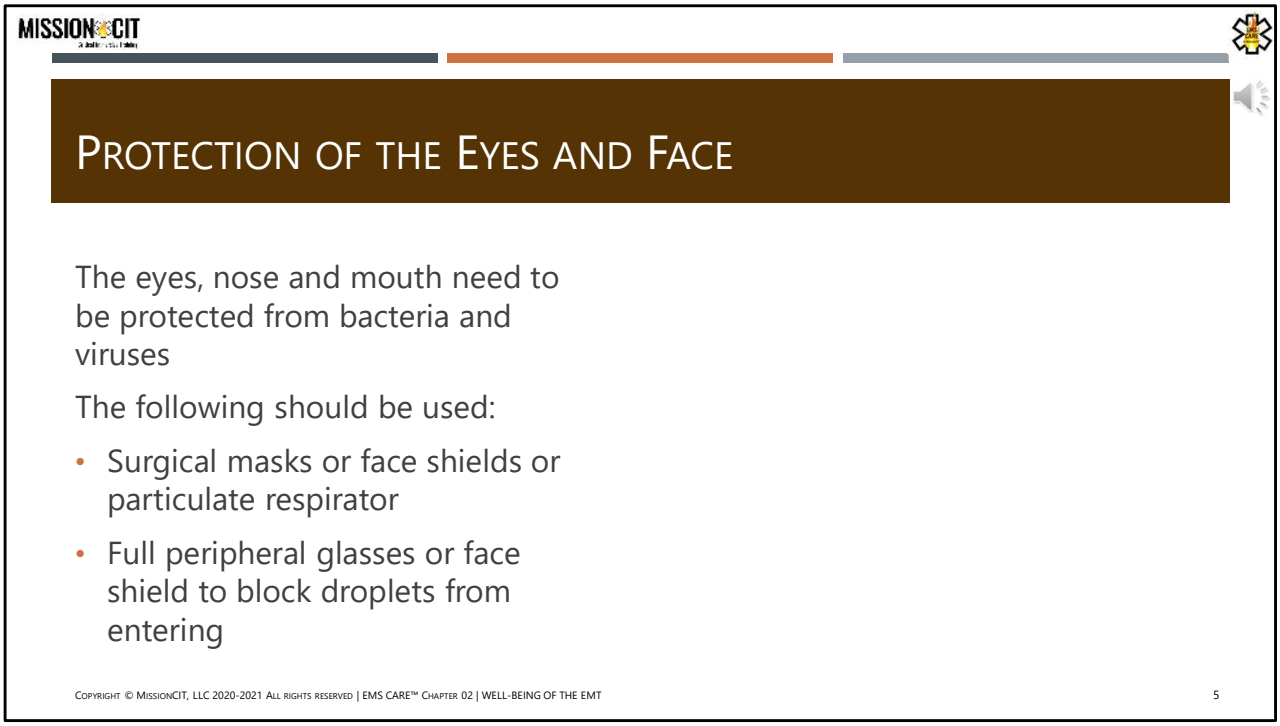
1. When hands are visibly soiled
2. After suspected or known exposure to infectious diarrhea
3. If you suspect clostridium difficile or c-diff
4. Before eating
5. After using the restroom, and
6. Suspected or known exposure to other serious pathogens



- Gloves are mandatory when there is a minimum possibility of exposure to blood or body fluids.
- Latex gloves provide the best protection against bacteria and viruses. However, synthetic gloves would be a better choice to protect your hands from chemicals.
- Nitrile gloves are latex-free and yet provide a fair amount of protection from both viruses and chemicals.
- Gloves need to be removed in the right way, as shown

in the picture. While removing gloves, be sure not to splatter liquids from the glove onto any other surface.

- After removing, be sure to dispose of your gloves into a biohazard bag or leak-proof container in a proper disposal bin.



EMS providers are at risk of eye contamination or injury from blood and other body fluids. Protect your self from fine and large particulates, splashes from liquid medications, chemicals, and forms of blunt or penetrating trauma. According to NIOSH, even minor eye injuries can lead to lifelong vision problems.

According to OSHA, appropriate eyewear should have the "ability to protect against specific workplace hazards, should fit properly, and be reasonably comfortable to wear." It should also "provide unrestricted vision and movement, should be durable, cleanable and should

allow unrestricted functioning of any other required PPE."

In many instances, prescription glasses or non-prescription sunglasses offer adequate splash protection to EMS providers. However, If there is a foreseeable or expected blood or bloodborne pathogen contact with the eye's mucous membranes, appropriate eye protection needs to be worn.

Depending on the scene size-up and your local protocols, select appropriate protective eyewear from this list:

- Hybrid, prescription, or non-prescription safety glasses
- Goggles
- Face shields, and
- Full-face respirators.



Hazardous Waste Operations and Emergency Response (HAZWOPER) is a set of guidelines produced and maintained by OSHA. It regulates hazardous waste operations and emergency services. HAZWOPER provides 4 PPE levels that correspond to the nature of the hazard.

According to OSHA, Level A PPE should be worn when the greatest potential for exposure to hazards exists. This level provides the highest available respiratory, skin, and eye protection from solid, liquid, and gaseous chemicals. This ensemble is needed when dealing with highly toxic

chemicals. You need special training to use this gear.

Level B PPE is needed under circumstances when you require the highest level of respiratory protection, but a lower level of skin protection. This protective ensemble is used on initial site entries where hazards may not have been identified yet. Level B provides liquid splash protection but does not safeguard against chemicals and vapors.

EMTs are generally not trained for Level A or B environments.

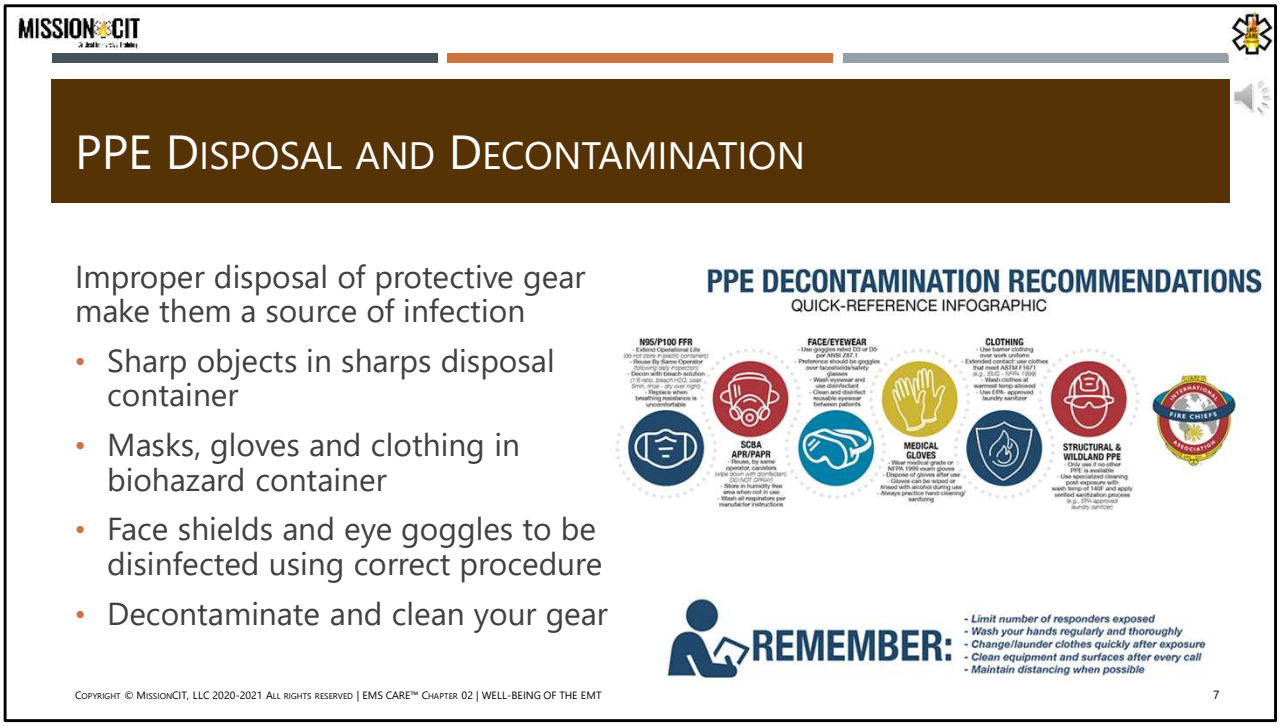
Level C protection is required when the concentration and type of airborne contaminants have been identified, and the criteria for using air-purifying respirators met. This level provides the same level of skin protection as Level B, but a lower level of respiratory protection. Level C ensembles are used when contact with contaminants on-site will not affect the skin.

Level C protective equipment consists of:

1. Air-purifying half-mask or full-face respirators.
2. Chemical-resistant clothing, with hood – a two-piece chemical-splash suit and disposable chemical-resistant overalls.
3. Out and inner chemical-resistant gloves.
4. Chemical-resistant steel-toe boots.

5. Outer boot-covers, and
6. Face shield (as needed).

Finally, Level D PPE is used for "nuisance" level contaminants and offers minimal protection against Level A, B, or C incidents. This level of protection is used when the atmosphere contains no known hazard, and work functions preclude splashes, immersion, the potential for inhalation, or direct contact with hazardous levels of chemicals. Level D ensemble provides no respiratory protection and only minimal skin protection. The ensemble includes coveralls, safety boots or shoes, and safety glasses or chemical splash goggles.



Once the event reaches the last phase, remember to place needles and sharps in an FDA-approved container as you are finishing up.

Next, properly dispose the contaminated materials, and prepare your reusable gear for the next use. Place single-use masks and gloves, contaminated clothing, and disposable gear in a protective plastic bag and take it back to the station for proper disposal.

For reusable gear at the scene, do your best to put yourself and the equipment through a decontamination station. Then enclose the contaminated gear in a

protective bag so as not to contaminate the truck. Follow local protocol to decontaminate, clean, and restore.

Once back at the station, clean face shields and goggles with an approved disinfectant solution. Using fresh gloves, wipe the inside and then the outside using a wipe or clean cloth. Then clean the outside using water or alcohol, and allow to dry.

We've reached the end of this lesson. Next, Missah will discuss the prevention of work-related injuries.