



# Ultraviolet (UV) exposure from broken metal halide lights

Teachers who attended a day-long meeting in a school gym reported sunburn-like skin reactions and eye irritation. Further investigation revealed that ultraviolet (UV) radiation emitted from a broken metal halide light was responsible for the symptoms.

## What are metal halide lights?

Metal halide lights are a type of long-lasting, high-intensity lighting system used both indoors and outdoors. Common workplaces where these lights are installed include large warehouses, sports arenas, and gymnasiums.

The light source (an “arc tube”) emits ultraviolet (UV) radiation, which is normally filtered out by an outer glass bulb or a protective fixture.



*Metal halide lights*

## How can I be exposed to UV radiation from metal halide lights?

UV radiation from these lights is a concern when the metal halide bulb or the outer fixture is broken or cracked. When this happens, not all of the UV radiation is filtered out.

In school gyms, there have been cases where an object (such as a ball) hits a light and breaks the bulb and/or the outer fixture. Because the arc tube may continue to emit high-intensity light, it is difficult to see if the bulb or fixture is broken. The damage may go unnoticed, potentially exposing people to UV radiation.

## What happens if I am exposed to UV radiation?

Symptoms of exposure to UV radiation may include

- Sunburn-like inflammation on the face, neck, and/or arms
- Skin irritation
- Erythema (skin reddening)
- Eye irritation
- Conjunctivitis (irritation of the membrane lining the eyelids and eyeballs)
- Temporary loss of vision
- Long-term damage to the corneas

## How can I protect myself?

If a ball or other object strikes a metal halide light (or you see broken glass on the floor), take the following steps:

1. Turn off the light.
2. Check the bulb and/or fixture for damage.
3. Replace the bulb and/or fixture if damaged.

Remember to always turn off the light before checking or replacing a metal halide bulb or fixture.

## What can employers do?

- For metal halide lights that require bulbs, use only “T-type” bulbs. (Look for a “T” in the bulb’s serial number.) These bulbs self-extinguish (shut themselves off) within 15 minutes if broken. This can reduce the risk of UV exposure. “R-type” bulbs will not self-extinguish if broken. This increases the risk of UV exposure.
- Replace open or wire-grid covers with fully enclosed fixtures to protect the light bulb.
- Inspect and maintain metal halide lights on a regular basis.
- Immediately replace any light fixture that is damaged.

## More information and resources

Canadian Centre for Occupational Health and Safety (CCOHS): Ultraviolet radiation  
[http://www.ccohs.ca/oshanswers/phys\\_agents/ultravioletradiation.html](http://www.ccohs.ca/oshanswers/phys_agents/ultravioletradiation.html)

WorkSafe Saskatchewan: Hazard alert  
<http://www.lrws.gov.sk.ca/damaged-metal-halide-light-injures-workers>

U.S. Food and Drug Administration (FDA):  
Radiation safety alert  
<http://www.fda.gov/Radiation-EmittingProducts/RadiationSafety/AlertsandNotices/ucm116540.htm>

Washington State Department of Labor and Industries: DOSH hazard alert  
<http://www.lni.wa.gov/WISHA/hazalerts/122007MetalHalideLightsHazardAlert.pdf>