

### How Does Welder's Flash Happen?

Photokeratitis (welder's flash, arc flash, arc eye, flash burn) is one of the many hazards associated with welding. It is caused by the ultraviolet (UV) light produced by the welding arc. The UV light causes a very painful inflammation of the mucous membrane in the front of the eye. It is a lot like getting a sunburn, only in your eye.

Since it is caused by UV light, it is not just a welding problem. The sun, very bright lights/lamps, lightning, a cutting torch or plasma cutter can cause arc flash.

Basically, any bright source of light that has an ultraviolet component can cause welding flash. This is true for direct exposure to UV radiation as well as radiation that is reflected from metal surfaces, walls and ceilings.

The amount of time required to cause symptoms depends on the intensity of the radiation, the distance from the welding arc, the angle at which the radiation enters the eye and the type of eye protection used by the worker or bystander.



It is important to note, exposure to just a few seconds of intense UV light can cause arc eye. Symptoms may not be felt until several hours after exposure.

### Treating Welder's Flash

1. Remove contact lenses if possible, after washing hands, so as not to contaminate the eyes. Close your eyes. The most important thing you need to do if you have suffered from welder's flash is to close the affected eye and let it rest. Keeping it closed also protects it from further damage and prevents bacteria from entering the eye.
2. Place gauze pads in cold water. Wring out excess water and find a comfortable spot to lie back. Place the cold gauze pads over the eye and keep in place until they are warm. Repeat the process if you are still experiencing pain or swelling. You can also boil a tea bag for two minutes, then place in the refrigerator to cool. Remove the cool tea bags from the water, wring out and place over the eye as you would the gauze pad.

3. Place an eye patch over your affected eye to protect it during sleep. Take a dry gauze pad and fold it into a square. Place that over your eye. Cover the gauze pad with the eye patch. This will keep a bit of extra pressure on the eyelid to help keep it closed.
4. Wear dark sunglasses with UV protection when being exposed to sunlight or bright light. Bright light strain can delay healing in an eye with flash burn and cause additional pain. Even with the affected eye shut, strain on your good eye can cause strain on the affected eye. If possible, rest in a dark room.
5. Take an over-the-counter anti-inflammatory to relieve the pain and swelling associated with the welder's flash burn. Ibuprofen, aspirin or naproxen are all choices that will temporarily reduce pain.
6. See a physician immediately. If the pain is severe or your vision is blurred, both of these symptoms can be indicative of a more serious flash burn that requires immediate medical attention.

It is important to see a physician regardless of severity with any eye injury to ensure the proper diagnosis. What feels like a minor case of welder's flash may actually be a foreign body in the eye. Once a doctor has inspected the eye, they may give you eye drops to relieve the pain.

### Protecting Yourself from Welder's Flash

People in the vicinity of welding operations can be protected from exposure to welding arcs by the use of screens, curtains, etc. Flash burn is not always caused by looking directly at the light source. It is very common that UV light will enter the eye from the side or be reflected while looking away from the source.

One of the best ways to prevent welder's flash is to always wear your safety glasses. This is especially important if you're working around people who are welding, even when you are not. Another option is to wear an approved welding helmet with the correct shade of lens for whichever welding or cutting process you are performing.

### Legislation

*OHS Regulations, 2020* Section 7-8(3) & 7-8(4) address the protection of workers who are exposed to welding operations in the workplace.