

EMERGENCY EYE IRRIGATION



IN ACCORDANCE WITH STANDARD MEDICAL PROTOCOLS

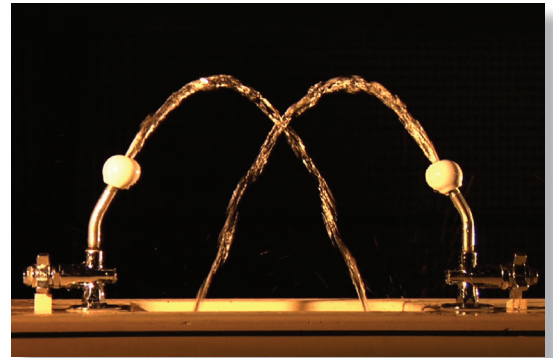


Emergency Eye Irrigation in Accordance with Standard Medical Protocols

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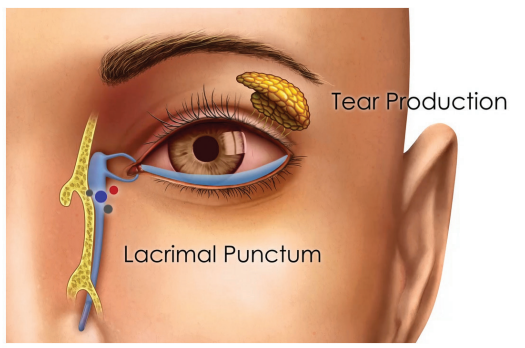
An injury can change one's life in an instant. According to the National Safety Council, occupational injuries occur every 7 seconds in the United States. Luckily, through the years stringent regulation and a growing concern for the health and well-being of employees has led to advancements in processes, safety procedures, and first aid protocols to treat the injured. This movement has had a profound impact on emergency equipment including the eyewash industry.

In the early 1900s, it was said that a well-known energy company created the first emergency eyewash by taking two bubbler heads from drinking fountains and mounting them on opposite sides of a sink facing each other with plumbing running to both of the heads. When activated, the water streams formed a double arch that directed water from the outer perimeter of the sink to the center. An injured victim would place their face into the double streams and irrigate both eyes simultaneously. It was a great concept, and one that took the safety industry to a new level over the subsequent years.



As medical advancements evolved, eye irrigation processes did not.

Yet as medical advancements continued to evolve, the eye irrigation process in emergency situations did not follow suite. By irrigating with water streams that contact the eye at its outer corner, or canthus, and flow inward toward the nose is diametrically opposed to the way medical professionals irrigate eyes. Think about how you use eye drops, general practice is to tilt the head back and place the dropper near the inner corner for the drops to drain to the outside of the eye and down the outside of your cheek, thus following medical protocols.



THE LACRIMAL SYSTEM

To comprehend the logic behind how the medical community treats eye contamination situations you should first understand the eye's lacrimal system. The human eye is equipped with an automatic lubricating and cleansing mechanism, called the lacrimal system. It consists of the lacrimal gland which produces tears, the ducts that channel tears from the lacrimal gland to the ocular surface, and the lacrimal puncta which are drains that channel excess fluids out of the ocular surface. Importantly, the lacrimal puncta drain excess fluids directly into the nasal cavity. This process is the reason why your nose runs when you cry.

The eyelid also plays a key role. As we blink, the eyelid wipes the cornea pushing contaminants and excess fluids toward the lacrimal puncta – or the ocular surface's drains.

If a hazardous substance is introduced into the eye, nature's own cleansing mechanism can serve to force the contaminant into the nasal cavity, where it can be breathed into the lungs or swallowed.

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EYE IRRIGATION: THE MEDICALLY CONSISTENT WAY

Accordingly, the medical profession teaches and practices irrigating eyes by introducing the flushing fluid at the inner corner of the eye – adjacent to the nose – and letting it run across the eye to the outer edge. In effect, irrigation is performed by moving the fluid away from the lacrimal puncta. This is opposite the flow direction of traditional eyewash products that flow water from the outside-in, pushing contaminants toward the inner corners of the eyes where these susceptible tear ducts, glands and canals are located. Pushing contaminants toward the nose not only risks introducing them into the nasal cavity, but also can allow the same contaminant to be introduced into the other eye.

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The ideal method of irrigating eyes is by using products that mirror approved medical protocols. Eyewash streams that are inverted contact the eyes at the inner canthus, or corner, adjacent to the bridge of the nose. Contaminants are thus swept away from the lacrimal system to the outside of the eye where gravity takes over and runs them into the eyewash bowl. This irrigation method aids in protection to valuable internal organs and can help reduce unnecessary exacerbation of injuries.



CONSISTENT LAMINAR FLOW FOR VICTIM COMFORT

Additionally, the use of the laminar flow design in the eyewash streams is another medical recommendation. A laminar flow is one in which there is an absence of turbulence, because the stream is “built” in layers. Turbulence or inconsistencies in the flow stream can strike the eye as a change in total pressure, making the victim much less comfortable during the flushing process and less likely to stay in the water for the required duration. The

best approach is to provide an even, comfortable, predictable stream height and circumference, accomplished by using laminar design principles.

Times are changing, as are the protocols and practices of emergency equipment manufacturers. Irrigating eyes in a manner that is consistent with medical procedures provides the ideal flushing method for a victim from a comfort and effectiveness standpoint during an emergency.