

Hydrofluoric Acid Exposure/Burns

This protocol is for use only by specially trained **HAZMAT** treatment teams

Designation of Condition: Patient will have a known exposure to hydrofluoric acid (HF). Exposure may be by direct skin contact, inhalation, or eye exposure. HF is commonly used for polishing, frosting, and etching glass; it is also found in rust-removing agents and heavy-duty cleansers, a potential source of human exposures. HF is highly corrosive and causes damage by two mechanisms. It produces a corrosive burn from the high concentration of hydrogen ions, and the fluoride ion is able to diffuse rapidly through tissue, complexing with a wide variety of cations and causing a severe liquefaction necrosis not usually seen with other acid exposures. Also, the fluoride ion has the ability to form insoluble complexes with calcium, which, in turn, is leached out of the bloodstream rapidly, which may cause life-threatening electrolyte disturbances.

B	<p>Provider Safety: All responders should wear personal protective gear, including appropriate gown gloves and goggles.</p> <ul style="list-style-type: none">• Thoroughly decontaminate the patient.• Ensure no possibility of secondary contamination.• Remove patient from contaminated environment.• Immediately flush exposed areas with large amounts of water.• After thorough initial irrigation apply 2.5% calcium gluconate gel (if available) to burned area of skin every 15 minutes and massage gently until pain resolves• Rubber or neoprene gloves must be worn while touching victim. (Latex gloves are not an effective barrier against HF)• Eye Injuries: Immediately flush affected eye with water for at least 30 minutes while holding eyelid open. Keep effluent from entering unaffected eye. If available apply topical ophthalmic anesthetic solution.• If inhalation exposure: Give 100% oxygen by mask• Transport to Regional Burn Center.
I	<ul style="list-style-type: none">• IV/IO NS or saline lock away from site of exposure.• See Adult Pain Management or Pediatric Pain Management• If patient shows signs of hypovolemia:<ul style="list-style-type: none">• Adult: Bolus in 250 ml increments, reassessing between boluses• Infant/Child: Bolus in 10-20 ml/kg increments, reassessing between boluses
P	<ul style="list-style-type: none">• Monitor ECG <p>If inhalation injury presents:</p> <ul style="list-style-type: none">• As soon as possible give Calcium Gluconate neb. (If available)• Place solution in nebulizer and connect to oxygen to provide effective fog.• Carefully watch the patient for edema of the upper airway with respiratory obstruction. Consider endotracheal intubation or cricothyrotomy if necessary. <p>Suspect systemic toxicity if there is a large surface area exposure or inhalation exposure. Signs of systemic toxicity include tetany, EKG changes (Prolonged QTC. (>500 msec), or ventricular arrhythmias. If present treat with IV Calcium gluconate. (If available)</p> <p>Adult</p> <ul style="list-style-type: none">• Administer 10% calcium gluconate <p>Pediatric:</p> <ul style="list-style-type: none">• Administer 10 % calcium gluconate use Pediatric Dosing Chart• Transport patient to Regional Burn Center.• If multiple patients see MCI Appendix A• This protocol is for use only by specially trained HAZMAT treatment teams