

STINGS

Cnidarians (nematocyst-carrying species) are responsible for more envenomations than any other marine phylum. These organisms contain stinging cells called cnidocyte that excel at venom delivery.



JELLYFISH

Of all the cnidarians, jellyfish cause the most frequent and severe human injuries. These result from direct contact with tentacles, and though painful, are not typically life threatening.



HYDROIDS

Although hydroids look like plants, these feathery cnidarians are actually a colony of small zooids that work together as a functioning animal. Like all cnidarians, these animals are armed with stinging cnidocytes. Hydroids, Portuguese man-of-war and fire coral belong to the same family, and contact with them can cause very similar reactions. Granted, their smaller contact area usually results in more localized and less dramatic reactions.



PORTUGUESE MAN-OF-WAR

Portuguese man-of-wars are free-floating cnidarians characterized by blue gas-filled bladders and long tentacles that drift on the ocean's surface. Contact with a man-of-war's tentacles can cause significant pain and systemic symptoms. Their tentacles contain cnidocytes that deliver a potent proteic neurotoxin. Despite its resemblance to jellyfish, Portuguese man-of-war are more closely related to fire coral than to true jellyfish.



FIRE CORAL

Fire coral are colonial marine cnidarians that cause a mild to moderate burning reaction when touched. This is the result of cnidocytes embedded in its calcareous skeleton, which fires nematocysts upon touch.



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HEALTH & DIVING REFERENCE SERIES

HAZARDOUS MARINE LIFE: STINGS



STINGS

A sting is a method of envenomation that certain species use to inject a venom or toxin. Envenomations are rare and are always due to direct contact with an animal, but can be life threatening and may require rapid first aid response.

STING PREVENTION

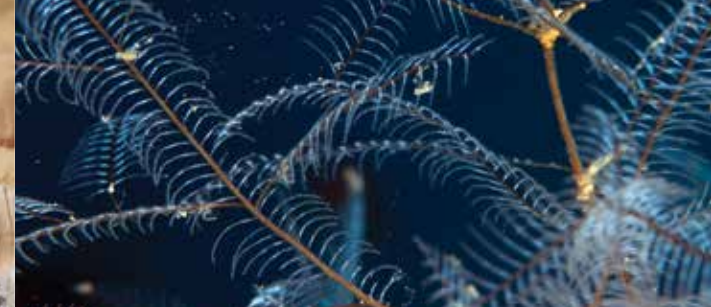
- 1 Properly research your dive sites and become familiar with potentially hazardous marine life.
- 2 Maintain a prudent distance from all marine life.
- 3 Minimize unprotected areas. Always wear full-body wetsuits to provide protection against the effects of contact.
- 4 Master buoyancy control.
- 5 Always look down while descending and up and around while ascending.
- 6 Consider seasonality. Some species of jellyfish are known to be more prevalent in certain regions of the world during specific seasons.
- 7 Ask local dive resources about marine life hazards.

APPLICATION OF VINEGAR FOR JELLYFISH STINGS

Carry sufficient household vinegar with you to all dive sites. The 2010 American Heart Association's guidelines advise vinegar application for all jellyfish (including Portuguese man-of-war).

APPLICATION TIPS

Optimize vinegar application by using spray bottles. Spray the area with vinegar for no less than 30 seconds to neutralize any invisible remnants. Pick off any remaining tentacles.



JELLYFISH & PORTUGUESE MAN-OF-WAR FIRST AID

If box jellyfish is suspected, activate emergency medical services as your first step.

- 1 **AVOID RUBBING THE AREA.** It will exponentially increase the affected surface area and therefore the envenomation process.
- 2 **MONITOR CIRCULATION, AIRWAY AND BREATHING.** Perform CPR if necessary.
- 3 **REMOVE TENTACLES.** Use tweezers or gloves. If not available, the skin of your fingers is likely thick enough to protect you. Keep in mind, however, that after touching tentacles with your bare fingers, your fingers may contain hundreds or even thousands of unfired nematocysts. So, treat your fingers as recommended from the next step on.
- 4 **FLUSH THE AREA WITH SEAWATER.** Once the tentacles and any remnants have been removed, use a high volume syringe and flush the area with a powerful stream of seawater to remove any remaining unfired nematocysts. Never use freshwater since this will cause unfired nematocysts to fire.
- 5 **APPLY HEAT.** Immerse the affected area in hot water with an upper limit of 113°F (45°C) for 30-90 minutes. Use the hottest water you can tolerate and avoid scalding. If you are assisting a sting victim, try the water on yourself first to assess tolerable heat levels. Do not rely on the victim's assessment, as intense pain from the sting can impair his ability to evaluate temperature tolerability. If hot water is not available, apply a cold pack.
- 6 **CONTINUE MONITORING** the patient until a higher level of care has been reached.

HYDROID & FIRE CORAL FIRST AID

- 1 Rinse the affected area with household vinegar.
- 2 Redness and vesicles will likely develop. Do not puncture them; just let them dry out naturally.
- 3 Keep the area clean, dry and aerated—time will do the rest.
- 4 For open wounds due to fire coral, seek a medical evaluation.

NOTE: Fire coral venom can have dermonecrotic effects. Share this information with your physician before any attempts to suture the wound, as the wound edges might become necrotic.
- 5 Antibiotics and a tetanus booster may be necessary.

For more information, explore [DAN.org/HEALTH](https://www.dan.org/HEALTH).