

Marine Life Injuries

Cause:

- Careless divers bumping into or handling marine animals
- Animals defending themselves or their territory if it has been invaded

General care

- Clean the wound
- Use clean fresh water, sterile water or saline, and flush (irrigate) the wound
- Use sea water to flush jelly fish tentacles away, not fresh water

First aid (dependent on injury type)

- Heat
- Vinegar or other neutralizer
- Immobilization



Marine Life Injuries continued

Treating by Applying Heat

- Injected toxins from urchins, fish spines, etc. are heat labile (break down from heat).
- Immerse the wounded area in hot water - not scalding (110°–113° F or 43°–45° C).
- Soak for 30 to 90 minutes; be sure the water stays as hot as can be tolerated.
- Repeat above step until the pain diminishes.
- For spines that have broken off in the tissue, use vinegar soaks.
- Transport the victim to medical attention as the wound may need medical attention.

Marine Life Injuries continued

Treat with white vinegar

Toxin from stinging cells of jelly fish, fire coral, stinging hydroids, Portuguese Man-of-War



1. First rinse the area with SEA WATER. Fresh water will cause more stinging cells to activate.
2. Gently scrape any tentacles and stinging cells off that may still stick and be present. A credit card or C-card is a good tool to do this task.
3. Apply vinegar to neutralize the stinging cells and reapply vinegar in 15 minutes.
4. You can also use a paste of baking soda
5. Wash the area with soap and water
6. Apply a thin layer of hydrocortisone cream
7. Monitor for signs of an allergic reaction
8. Seek medical attention, if necessary
9. Reapply hydrocortisone at night



Vinegar being applied with a spray bottle

Marine Life Injuries continued

Treating by Pressure Immobilization

Used for blue-ringed octopus, sea snake bites, or cone shell punctures which can be life threatening.



- Call for help - 911.
- Place a four inch by four inch (10 cm by 10 cm) by an inch (3 cm) thick cloth or gauze pad over the wound.
- Wrap with an elastic bandage at least an inch (2.5 cm) above and below the pad, tight enough to press the pad into the skin, but not cut off circulation.
- Apply a splint to immobilize the limb.
- Monitor for breathing, circulation, and signs of an allergic reaction.
- Administer oxygen
- Transport the victim to medical attention.

Marine Life Injuries

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Bites - Morays, sharks, barracuda, and other fish will bite if threatened, or when you try to feed them



First aid:

- It may be necessary to unhook by pushing inward first before withdrawing
- Assist the diver to the surface
- Clean the wound and remove any tooth fragments
- Control the bleeding and bandage as necessary
- Give oxygen to prevent shock and transport the victim to medical attention for possible stitches and antibiotics, if necessary

Marine Life Injuries

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Envenomation

- Jellyfish
- Sea urchins
- Stingrays
- Stonefish, scorpionfish, lionfish, or catfish
- Blue-ringed octopus
- Cone snails (family Conidae)
- Sea snakes
- Bristleworms or fireworms
- Sea cucumbers
- Crown of Thorns seastar
- Sea sponges





Marine Life Injuries

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Coelenterate:

- Portuguese man-of-war, **jellyfish**, **fire coral**, box jellyfish, sea nettles, **hydroids**, sea wasps, and **anemones**
- Nematocysts (stinging cells) inject venom on contact with living tissue.

Prevention

- Exposure protection-Dive skin

First Aid

- Use “Treating by white vinegar” as described
- Chironex box jellyfish (Australia) can be lethal, antivenin is available



Marine Life Injuries

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Portuguese man-of-war :

Special note should be made of this coelenterate. They float on the surface with tentacles extending downward over 30 feet in length. The floating gas filled bladder is at the mercy of the wind. The tentacles are almost transparent and extremely difficult to see. Divers have ascended into the tentacles or the chopped up particles from boat props.

Care should also be taken with man-of war that have washed up on shore as the nematocysts can still be active and sting.



Marine Life Injuries

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Sea Urchin Puncture:

- Spines remain embedded, and can pierce gloves or wetsuit

Treatment

- Use “Treating by Heat” as described
- Attempt to remove spines
- Deeply embedded spines may require medical treatment/removal

Stingray Puncture:

- barbed spine in their tails injures leg or foot when stepped upon, usually in shallow waters.

Treatment

- Local lidocane, use “Treating by Heat”
- Seek medical attention to avoid infection/complications

Marine Life Injuries

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Fish Spine Envenomations:

- Stonefish, scorpionfish, and catfish have spines and venom
- Excellent natural camouflage make these animals dangerous to divers, especially if handled or molested
- NOTE: Lionfish are described later

Treatment

- Use “Treating by Heat” as described
- Medical attention may be necessary

Blue-Ringed Octopus Bite:

- Small, tidal pool creature found in Australia and Indo-Pacific
- Bite may go unnoticed, but is deadly
- Small bruise or blood blister may be only sign

Treatment

- Pressure immobilization as described
- Immediate medical care is required



Marine Life Injuries

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Cone Snail Sting: (Found only in the Pacific)

- Proboscis at the narrow end of the shell has a harpoon that can penetrate skin and light clothing

Treatment

- Pressure immobilization as described
- Immediate medical care is required

Lion Fish: **You will find these from NC to the Caribbean**

- Inhabit tropical/temperate waters of Atlantic and Caribbean
- **Do not try to handle this fish**
- Spines contain venom
- If venom has been injected, can be deadly

Treatment

- Pressure immobilization as described
- Hot water treatment
- Life support as needed - oxygen



Marine Life Injuries

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LIONFISH STING FIRST AID GUIDELINES

Remember: Prevention is the best first aid. Seek proper training and use proper tools and techniques to avoid stings.

MANAGING A LIONFISH STING WHILE DIVING

- Remain calm.
- Allow small punctures to bleed.
 - » *This may decrease venom load.*
- Notify the dive leader and/or your buddy.
- Safely end your dive.
 - » *Perform a normal ascent rate, safety stop & any deco obligation.*
- Provide first aid.



Marine Life Injuries

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Bristleworms (fireworms):

- Segmented worms found throughout the tropical seas.
- Can bite, or bristles may penetrate skin.

Treatment

- Use “Treating by Heat” as described



Sea Cucumbers:

- Elongated tubular creatures with tentacles around the oral opening.
- Can cause rash if eaten inadequately cooked, or if you have contact with excrement.
- Dangerous to eyes and can lead to blindness.

Treatment

- Use “Treating by White Vinegar” as described, or if eye injured, flush with 1-2 gallons (4-8 liters) fresh water.

Marine Life Injuries

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Crown of Thorns Seastar:

- 13 to 16 arms with spines as long as 2" (5 cm)
- Contact with spines and venom injected

Treatment

- Use "Treating by Heat" as described

Sea Sponge:

- Grow attached to shells and stones
- Contact with spicules can cause rash

Treatment

- Use "Treating by White Vinegar" as described



Marine Life Injuries continued

Ingested Fish Poisoning:

- Some fish and shellfish are poisonous to eat
- Fish toxins are unaffected by cooking, soaking
- May not be an obvious “off” taste or smell

Ciguatera Poisoning (food chain poisoning)

- 400 species implicated – but sporadic and unpredictable
- Eating a fish that has eaten something that has made it toxic to human consumption such as red tide
- Some species are:
 - Barracuda
 - Grouper
 - Snapper
 - Sea bass
 - Surgeonfish
 - Mackerel
 - Parrotfish
 - Wrasse
 - Jackfish
 - Amberjacks
 - Moray eels
 - Large reef fish



Marine Life Injuries

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Ciguatera Poisoning (continued)

- **Signs and Symptoms**

- Reversal of hot and cold perception
- Chills
- Weakness
- Numbness
- Paresthesias-tingling, burning of the skin
- Arthralgias
- Dizziness
- Diarrhea, nausea, and vomiting
- Abdominal pain

- **First Aid**

- Induce vomiting if eaten within the last three hours.
- Mannitol given by medical personnel.
- Freeze a piece of the fish for analysis.
- Transport the victim to medical attention.

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Scombroid Poisoning

- Results from eating fish not preserved or refrigerated after caught and includes:
 - Albacore, bluefin, and yellowfin tuna
 - Mackerel
 - Wahoo
 - Skipjack
 - Bonito
 - Bluefish
 - Dolphinfish (mahi-mahi)
 - Sardines
 - Anchovies
 - Amberjack
 - Herring

Marine Life Injuries

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Scombroid Poisoning (continued)

- **Signs and Symptoms**

- Flushed skin of the face, neck, and upper torso that gets worse with exposure to the sun
- Sensation of warmth but normal temperature
- Itching or hives
- Red eyes
- Puffy face and hands
- Difficulty breathing with wheezing
- Nausea, vomiting
- Headache
- Thirst
- Difficulty swallowing

- **First Aid**

- Induce vomiting if eaten within the last three hours
- Transport the victim to medical attention

Marine Life Injuries

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Tetrodotoxin Poisoning - eating puffer (fugu), sunfish or porcupine fish

- **Signs and symptoms**

- Oral numbness and tingling
- Lightheadedness, general numbness and tingling
- Drooling
- Difficulty swallowing
- Sweating
- Fatigue
- Headache
- Vomiting or nausea
- Abdominal pain
- Weakness
- Difficulty walking, incoordination
- Paralysis



Marine Life Injuries

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Tetrodotoxin Poisoning (continued)

- **Prevention**
 - Do not eat fish without scales.
 - Only eat Fugu prepared by a licensed chef.
- **First Aid**
 - Induce vomiting if the victim ate the fish within the last three hours.
 - Perform artificial respiration if the victim is not breathing.
 - Seek immediate medical attention.

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Paralytic Shellfish Poisoning

- Eating shellfish that have ingested quantities of plankton and protozoans that cause “red tides”
- Clams, Oysters, Scallops, Mussels
- **Signs and Symptoms**
 - Numbness and tingling inside and around the mouth, including the tongue and gums
 - Neck, hands, and feet numbness
 - Weakness
 - Floating sensation
 - Loss of balance
 - Incoordination
 - Difficulty speaking or swallowing
 - Vomiting, nausea and diarrhea
 - Paralysis

Marine Life Injuries

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Paralytic Shellfish Poisoning (continued)

- **Prevention:**

- Lower the risk by thoroughly cooking.
- Avoid eating any shellfish where there have been “red tides,” or reports of “fish kills.”

- **First Aid**

- Induce vomiting if the victim ate the shellfish within the last three hours.
- Perform artificial respiration if needed.
- Reassure the victim. They might be completely paralyzed but still conscious and able to hear.
- Seek immediate medical attention.