



# Auburn University Marine Extension & Research Center

SEA GRANT EXTENSION

## A DIVER'S FIRST AID REFERENCE TO POTENTIALLY HAZARDOUS MARINE LIFE

LOAN COPY ONLY

BRISTLE WORMS

CIRCULATING COPY

**ETIOLOGY:** The setae (the white tufts of barbed spicules) penetrate the skin. When broken the setae release a venom.

**SYMPTOMS:** Inflammation, itching, numbness, burning or stinging sensation.

**TREATMENT:** Remove the setae using the adhesive side of a piece of tape or possibly tweezers. Apply a dilute (1:10) acetic acid (vinegar) solution, alcohol, anaesthetic ointment or spray (e.g. Lignocaine, Trade name = Xylocaine) to the affected area.

**PREVENTION:** Do not handle these worms. If you must, use rubber gloves as the setae will penetrate cotton and thin neoprene gloves.

### COELENTERATES

(hydroid, jellyfish, sea anemone, soft coral)

**ETIOLOGY:** Venom containing nematocysts (stinging cells) are fired when changes in pressure or osmolarity (the concentration of an osmotic solution, salt water) occur.

**SYMPTOMS:** Localized pain, itchy rash, blistering, swelling, and welts. Most jellyfish stings are usually mild. The sea wasp and the Portugese man-o-war may produce nausea, fever, delirium, paralysis, respiratory and/or cardiopulmonary difficulty or failure.

**TREATMENT:** Soak the wound in a dilute (1:10) acetic acid (vinegar) solution or sodium hydroxide. Remove tentacles using a paste made from baking soda and water. Soak the affected area in hot water (as hot as tolerable) for 30 minutes. An anaesthetic ointment (e.g. Lignocaine, Trade name = Xylocaine) may reduce the pain. In the case of the sea wasp and the Portugese man-o-war, medical support, an antivenom, and CPR may be necessary.

**DO NOT:** Immerse the affected area in fresh water. The change in osmotic pressure will cause additional nematocysts to fire. Nematocysts of a dead jellyfish are still capable of firing for some time.

**PREVENTION:** Wear body suits made of nylon or lycra.

### ECHINODERMS

#### SEA CUCUMBER

**ETIOLOGY:** Dermatitis or conjunctivitis may develop from exposing the skin to the holothurin compound on the surface of the sea cucumber.

**SYMPTOMS:** A mild irritation of the skin.

**TREATMENT:** Wash the affected area using soap and hot water.

**PREVENTION:** If you must handle sea cucumbers, use gloves.

## ECHINODERMS (cont.)

### SEA URCHINS AND STARFISH

**ETIOLOGY:** A puncture wound from wading in the shallows, mishandling specimens, or improper buoyancy control while diving. A mild toxin may be injected by some species by way of the spine.

**SYMPTOMS:** A sharp, burning pain and discomfort due to residual spine pieces. Some swelling may occur. Possibly a mild systemic illness.

**TREATMENT:** Hot water (as hot as tolerable) soaks; remove spine(s) if possible; small spine fragments may dissolve or work their way out. Antibiotics may be required.

**PREVENTION:** Use caution when wading in shallow water and do not wade in your bare feet. Use proper buoyancy control in order to keep feet off of the bottom and use gloves if you must handle these animals.

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## FISHES

### BITE WOUNDS (barracuda, grouper, moray eel, shark)

**SYMPTOMS:** Pain, shock, unconsciousness; loss of blood due to deep lacerations, puncture wound, or loss of tissue.

**TREATMENT:** Remove the diver from the water as soon as possible. Stop or reduce bleeding using hand pressure, pressure bandage, arterial pressure, or a tourniquet as a last resort. Treat for shock by elevating the legs above the head and cover the diver with a light towel, etc. **DO NOT** remove clothing or equipment if this will promote excessive bleeding. CPR may need to be administered. Seek medical attention as soon as possible.

**PREVENTION:** Do not swim, dive, or spear fish where barracuda and sharks are prevalent. Avoid wearing reflective jewelry and equipment. In the case of groupers and moray eels, do not hand feed or place your hands into blind holes or crevices, respectively.

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### STING RAYS

**ETIOLOGY:** The serrated tail spine which is used as a defensive response can inflict a venom transferring puncture or slashing wound.

**SYMPTOMS:** Immediate localized pain and swelling.

**TREATMENT:** Soak the wound in hot water (as hot as tolerable). Remove the spine if possible and seek medical attention as soon as possible.

**PREVENTION:** Shuffle feet in the reef shallows and do not wade in your bare feet.

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### VENOMOUS FISHES (catfish, lionfish, scorpionfish, stonefish)

**ETIOLOGY:** Venom injected through a dorsal or pectoral spine.

**SYMPTOMS:** Immediate and severe pain, swelling, ecchymosis, and possible paralysis.

**TREATMENT:** Discomfort minimized by hot water soaks; severe reactions may require administering an antivenom or injection of Lignocaine (Trade name = Xylocaine).

**PREVENTION:** Do not wade in your bare feet, handle or provoke these fishes.

## **HARD CORAL** (fire coral)

**ETIOLOGY:** Venom released from nematocysts and microorganisms.

**SYMPTOMS:** Itchy, red, swollen cuts and abrasions that heal slowly.

**TREATMENT:** Clean the wound with hydrogen peroxide and apply chloramphenicol ointment, cortisone ointment or an antihistamine cream.

**PREVENTION:** Wear a full body lycra or nylon suit.

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## **MOLLUSCA**

### **CONE SHELLS**

**ETIOLOGY:** Injects a neurotoxin by means of a harpoon-like apparatus associated with the radula.

**SYMPTOMS:** Causes a burning, stinging sensation; may lead to paresthesias, paralysis and cardiopulmonary arrest.

**TREATMENT:** No antivenom is available. Scrub the wound with an antibacterial soap and water, suction venom out or soak in hot water (as hot as tolerable) or apply hot compresses for 30 minutes to inactivate the venom and reduce the pain. Seek medical attention immediately.

**PREVENTION:** Avoid contact, but if you must handle these mollusks, use tongs or forceps. Do not place these mollusks in pockets; the harpoon can penetrate clothing.

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### **OCTOPUS** (blue-ringed octopus)

**ETIOLOGY:** Injects a neurotoxin via beak bite.

**SYMPTOMS:** May produce edema, erythema, numbness, nausea, blurred vision, and respiratory failure.

**TREATMENT:** Similar to that of cone shells.

**PREVENTION:** Do not wade in your bare feet or handle these animals.

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## **REPTILIA**

### **SEA SNAKES**

**ETIOLOGY:** Neurotoxin injected via short fangs.

**SYMPTOMS:** Malaise, muscular stiffness, weakness, shock, paralysis and possible death.

**TREATMENT:** Apply an immobilization pressure bandage to delay the spread of venom; seek medical attention immediately. An antivenom is available.

**PREVENTION:** Do not handle or provoke.

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## **SPONGES**

(fire sponge, touch-me-not sponge)

**ETIOLOGY:** Minute spicules may puncture the skin injecting their own venom or obtaining it from bacteria, fungi or algae that colonize them.

**SYMPTOMS:** Burning, itching, redness, swelling.

**TREATMENT:** Soak the affected area in dilute (1:10) acetic acid (vinegar). If acetic acid is not available, soak the wound in hot water (as hot as tolerable); topical steroids may accelerate healing. Rubbing alcohol may help soothe the pain and itching.

**PREVENTION:** Wear a full body lycra or nylon suit.

# FIRST AID KIT CHECK LIST

- |                                   |                               |
|-----------------------------------|-------------------------------|
| _____ Adhesive Tape               | _____ Flashlight              |
| _____ Alcohol, Rubbing            | _____ Gauze (absorbent)       |
| _____ Antihistamine Cream         | _____ Gauze Pads (assorted)   |
| _____ Aspirin                     | _____ Gauze Roller Bandage    |
| _____ Baking Soda                 | _____ Hydrogen Peroxide       |
| _____ Band Aids (assorted)        | _____ Knife or Scalpel        |
| _____ Bandage Compress (assorted) | _____ Oxygen                  |
| _____ Blanket, Space Thermal      | _____ Scissors                |
| _____ Change for Telephone Calls  | _____ Soap, Antibacterial     |
| _____ Chemical Ice & Heat Packs   | _____ Sunscreen               |
| _____ Cortisone Ointment          | _____ Tweezers                |
| _____ Cotton Balls/Swabs          | _____ Vinegar, diluted (1:10) |

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## IMPORTANT TELEPHONE NUMBERS

- CHAMBER:** \_\_\_\_\_
- HOSPITAL:** \_\_\_\_\_
- PHYSICIAN:** \_\_\_\_\_
- RELATIVE:** \_\_\_\_\_
- USCG:** \_\_\_\_\_
- OTHERS:** \_\_\_\_\_
- \_\_\_\_\_

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