

Marine Toxinology

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Marine toxinology includes both marine envenoming (jellyfish stings and venomous fish injuries) and marine poisoning (ingestion of toxic marine fish). Marine envenoming is common, but the majority, such as *Physalia* stings, cause only minor effects and don't require medical treatment. Injuries due to venomous marine creatures is divided into jellyfish stings due to contact with stinging cells (nematocysts), and penetrating injuries from spiny fish, stingrays and sea urchins. Box jellyfish are the most dangerous and may cause severe and potentially life-threatening effects. First aid for jellyfish stings includes removal of the tentacles, hot water immersion for bluebottles and vinegar for major box jellyfish. Severe *Chironex fleckeri* stings may require early resuscitation, or analgesia and local dressings in less severe cases. Irukandji syndrome causes severe generalised pain associated with autonomic effects with little local pain or reaction. Treatment is symptomatic often with large doses of analgesia. Myocardial depression and pulmonary oedema may occur. Spiny fish and stingrays cause a combination of traumatic injury and venom-mediated effects. First aid is hot water immersion and treatment includes analgesia, thorough wound cleaning and regular follow up for secondary infection. Stingray injuries are associated with more significant trauma and can rarely result in penetrating abdominal or thoracic injury. There are four major clinical syndromes of marine poisoning, three that have important neurological manifestations – ciguatera, tetrodotoxin poisoning and paralytic shellfish poisoning – and scrombroid where the effects are similar to an allergic reaction. Ciguatera is the commonest form of marine poisoning, but is rarely life-threatening. It causes gastrointestinal effects (vomiting, diarrhoea and abdominal cramps) and neurological effects (myalgia, paresthesiae, cold allodynia and ataxia). Tetrodotoxin poisoning and paralytic shellfish poisoning are less common and have a higher fatality rate. They are characterised by mild gastrointestinal effects and a descending paralysis that rapidly progresses to respiratory failure in severe cases. The diagnosis in all marine poisoning is clinical as well as based on the circumstances of ingestion (type of fish and location). The mainstay of care is supportive and no antidotes currently exist.