

## Mini Review

## Biomedical Science and Clinical Research

## Medically Importance of Scorpions, Scorpionism Treatment and Control

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## 1. Mini Review

Scorpions belong to the Class: Arachnida, Order: Scorpionida, the main important scorpions are: *Hemiscorpius lepturus*, *Scorpio maurus*, *Androctonus crassicauda*, *Buthotus saulcei*, *Mesobuthus eupeus*, *Odonthobuthos doriae* (Fig.1)



**Figure 1:** Different Species of Scorpion

Scorpion sting is one of the main health problems in developing, tropical, and subtropical countries. Their venom with various potentialities has made them look both scary and fascinating. They become active after darkness has fallen and cease activity sometime before dawn. Once the prey has been detected, the scorpion turns, runs to the prey, and seizes it. The prey is stung

if it is relatively large, aggressive, or active. They may live from three to five years. Some can live for as long as 10 to 15 years. When the eggs are fertilized, the female retains them inside her body. When the young leave the female's body, they climb up onto her back (Fig.2). They will molt another six times until they reach maturity.



**Figure 2:** Offspring of Scorpions on Mother's Body

Researchers reporting that identified a new fluorescent compound from scorpion exoskeletons (Fig.3).



**Figure 3:** Fluorescent Compound from Scorpion Exoskeletons

Mexico has the highest rate of scorpion sting and mortalities. A total of 300,000 cases of scorpion sting are reported annually in Mexico. In 1995, 7000 cases of scorpion stings occurred in Brazil, and 1% were fatal despite receiving antivenom serum. Scorpion stings constitute 40,000 cases of medical problems in Tunisia every year. Morocco is faced with 40,000 cases of scorpion stings annually. The mortality rate of scorpion stings has been 3-22% for children. Severity of poisoning depends

on factors such as: health status, age of victim, site of sting, scorpion species, size of scorpion, degree of the scorpion's stimulation. Symptoms of scorpion sting are: restlessness, convulsions, roving eyes, thick tongue sensation, slurred speech, drooling, muscle twitches, abdominal pain and cramps, respiratory depression (Fig. 4). These symptoms usually subside within 48 hours, although stings from a scorpion can be life-threatening.



**Figure 4:** Symptoms of Scorpion Sting

## 2. First Aid

Ice may be applied directly to the sting site (never submerge the affected limb in ice water), remain relaxed and calm, do not take any sedatives, capture the scorpion for identification if it is possible to do so safely.

## 3. Treatment of Scorpion Sting

Cooling reduces pain, keep the victim calm and still, anesthetic, antibiotic, anti-tetanic, anti-venom, anti-inflammatory, analgesic [1-7].

## 4. Scorpions Control

removing food sources and sealing house and eliminate excess moisture, clean up crumbs and do dishes promptly so bugs don't have a food source, sprinkle borax or diatomaceous earth around the baseboards and under the sinks in your home, considering spraying insecticides around your home to kill insects, do research and approach this method with caution, since some insecticides are poisonous to humans and pets, remove scorpion shelters, store cardboard boxes on shelves instead of the floor. No keeping clutter around your home or under the beds. Keeping closets and bedrooms neatly, get rid of piles of wood, rocks or yard clippings, sealing home, scorpions can slip through an opening the size of a credit card. sealing of home is an important method for keeping them from scorpions, using caulk to fill in holes and cracks in walls, baseboards, or the foundation of home, making sure windows close tightly so scorpions can't climb in get door seals to prevent scorpions from coming in under the doors, use long-handled tweezers, a knife, or the bottom of your boot to kill the scorpions, spray insecticide designed for scorpions. The WHO recommend insecticide are: azamethiphos 10 g/l (1%), bendiocarb 2.4-4.8 g/l (0.24-0.48%), chlorpyrifos 2-5 g/l (0.2-0.5%), deodorized malathion 50 g/l

(5%) or propoxur 20 g/l (2%), dusts of bendiocarb 10 g/kg (1%), carbaryl 20-50 g/kg (2-5%), pirimiphos methyl 20 g/kg (2%), propoxur 20 g/kg (2%) , The same insecticides at the same dosages are used for outdoor residual sprays, carbaryl 100 g/kg (10%) , granules of diazinon 100 g/kg (10%).

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