

Health Hazards of Imported Fire Ant Stings

Background

Fire ants are stinging insects that belong to the same order as bees and wasps. The red-black imported fire ant now infests more than 260 million acres in the southern United States, where it has become a considerable agricultural pest and a significant health hazard. Fire ant mounds may measure up to three feet in diameter and 18 inches in height. Each mound may be teeming with up to 250,000 worker ants that measure approximately ¼ inch in length.



RIFA Biting Skin and Stinging

Fire ants may attack with little warning. After firmly grasping the skin with its jaws, the fire ant arches its back as it inserts its rear-end stinger into the flesh, injecting venom from the poison sac. It then pivots at the head and typically inflicts an average of seven to eight stings in a circular pattern. Fire ant venom is unique because of the high concentration of toxins, which are responsible for the burning pain characteristic of fire ant stings.

Reactions

Fire ant sting reactions range from localized itching and swelling with pustule formation to severe, life-threatening anaphylaxis.

Almost all people stung by fire ants develop an itchy, localized hive at the sting site which usually subsides within 30 to 60 minutes. This is followed by a small blister at the site of each sting within four hours. A sterile sore with pus forms in 8 to 24 hours; it then ruptures and scars in 48 to 72 hours. Treatment is

aimed at preventing secondary bacterial infection, which may occur if the pustule is scratched or broken. Diabetics and others with circulatory disorders, including varicose veins and phlebitis, are at special risk for complications.

Up to 50% of patients develop large local reactions at the site of fire ant stings. Swelling may last for several days and may be accompanied by itching, redness and pain.

Anaphylaxis

Anaphylaxis is a generalized, systemic allergic reaction to fire ant stings that may be life-threatening. It usually occurs in persons sensitized by a previous sting. It may be manifested by flushing, generalized hives, swelling of the face, eyes or throat, difficulty breathing, or loss of consciousness. A physician survey documented 32 deaths due to anaphylactic reactions to fire ant stings in patients 16 months to 65 years of age.

Treatment

Local Reactions:

- Elevate the extremity and apply ice or a cold compress to reduce swelling and relieve pain.
- Clean the blisters with soap and water to prevent secondary infection.
- Do not break the blister.
- Topical steroid ointments and oral antihistamines may relieve the itching associated with these reactions.
- Treatment with antihistamines and oral steroids may be useful in severe cases.
- Since the swelling is due to allergy and not infection, antibiotics are usually not necessary.
- Seek medical attention if the swelling progresses or if infection is suspected.

Anaphylaxis

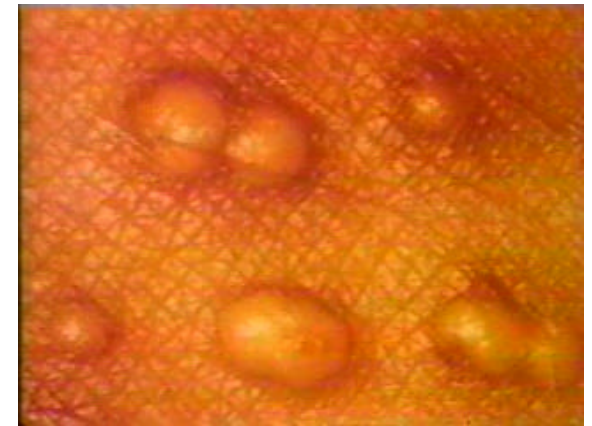
Anaphylactic reactions should be managed as a medical emergency! If stung, persons at risk should immediately self-administer epinephrine, take an antihistamine, and report to a physician or emergency room. Further treatment may include epinephrine, antihistamines and corticosteroids. Persons suffering fire ant sting anaphylaxis should be

referred to an allergist for skin testing and immunotherapy.

Adrenalin (epinephrine) is the first drug of choice in the treatment of anaphylaxis. Insect sting-allergic patients should carry an emergency kit containing epinephrine (e.g., EpiPen or AnaKit), for self-administration in case of a sting.

Allergy-Shots/Immunotherapy

Allergen immunotherapy (allergy shots) has proven to be an extremely effective form of treatment for individuals at risk of insect sting anaphylaxis. Anyone who has suffered a systemic allergic reaction to a fire ant sting should be referred to a trained



RIFA Sting Blisters

allergist for skin testing and evaluation for immunotherapy. Treatment goals are to:

- prevent life-threatening reactions;
- reduce complications;
- and alleviate anxiety.

Fire ant whole body extract has been shown to contain relevant venom allergens and appears to be protective. Research studies are presently being conducted to determine the relative effectiveness of fire ant venom and whole body extract in the diagnosis and treatment of fire ant allergy.

The optimal duration of fire ant immunotherapy has not been clearly established. In one study, immunotherapy was discontinued in 31 patients after 2-19 years of treatment. All patients tolerated a fire

ant sting challenge at 3 months and 16 of 17 (94%) had no reaction to re-sting one year later.

Avoidance

Fire ant allergic patients should wear closed-toed shoes, socks, and gloves when gardening and take other precautions to avoid stings. Fire ant mounds near the home should be identified and treated with an ant bait insecticide.

Control

Effective methods for insecticide treatment of fire ant mounds use attractant baits consisting of soybean oil, corn grits or chemical agents. The bait is picked up by the worker ants and taken deeper into the mound to the queen. It can take weeks for these insecticides to work.

Prevention

Insect sting allergy is a major health hazard for a significant number of individuals in the southern United States. Fire ants have been found as far west as California and as far north as Washington, D.C. Their migration appears to be limited by the frost line.

Immunotherapy can reduce the risk of subsequent reactions. Standard preventive care measures should include:

- Precautions for insect avoidance;
- Prescription of emergency treatment kits containing epinephrine;
- Referral for allergy evaluation.

These preventive measures should help to reduce the health hazards caused by imported fire ant stings.

Your allergist can provide you with more information on fire ant stings.

Oklahoma State University and the Oklahoma Cooperative Extension Service is dedicated to Integrated Pest Management research and training. If you have any further questions please contact:

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North American Fire Ants

Solenopsis geminata: tropical fire ant, inhabits coastal areas.

Solenopsis xyloni: southern fire ant, inhabits Southeast United States.

Solenopsis richteri: black fire ant, inhabits Northern Mississippi and Alabama.

Solenopsis saevissima richteri: hybrid cross of black and red imported fire ant, inhabits Mississippi and Alabama.

Solenopsis invicta: red imported fire ant, inhabits Southern U. S., movement continues to spread.

The Red Imported Fire Ant biological information contained in this brochure was borrowed from the University of Florida and Florida Cooperative Extension Service Fact Sheet ENY-226. The pictures displayed herein were borrowed from the Imported Fire Ant Bytes CDROM, produced by the University of Arkansas College of Engineering and University of Arkansas Cooperative Extension Service. The information given herein is for educational purposes only.

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Health Hazards Associated With Red Imported Fire Ants

As Red Imported Fire Ants continue to become more numerous throughout the United States cases involving fire ant stings also increase. Red Imported Fire Ant stings can be as deadly to humans as those of bees or wasps. It is important to understand our bodies' reactions to the stings and what to do when stung. Enclosed in this brochure you will find information about fire ant stings, reactions, and treatment. It is hoped that with this basic information you will be better prepared to deal with the Red Imported Fire Ants you encounter.



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