

## ARKANSAS BUGS: CHIGGERS, MOSQUITOES, AND TICKS

### CHIGGERS

Chiggers are barely visible to the naked. A magnifying glass may be needed to see them. They are red in color and may be best appreciated when clustered in groups on the skin.

Chigger mites infest human skin via areas of contact with vegetation, such as pant cuffs or shirt sleeves and collars. They migrate on the skin in search of an optimal feeding area. A common myth about chiggers is that they burrow into and remain inside the skin. This is not true. Chiggers insert their feeding structures into the skin and inject enzymes that cause destruction of host tissue. Hardening of the surrounding skin results in the formation of a feeding tube called a stylostome.

Chigger larvae then feed upon the destroyed tissue. If they are not disturbed (which is rarely the case because they cause substantial itching) they may feed through the stylostome for a few days.

The chigger's mouth and feeding structures are delicate and are best able to penetrate the skin at areas of wrinkles, folds, or other areas of skin that are thin. Most bites occur around the ankles, the crotch and groin areas, behind the knees, and in the armpits. Barriers to migration on the skin such as belts may be one reason that chigger bites also commonly occur at the waist or at other areas where their migration is prevented by compression from clothing. The location of chigger bites contrasts with that of mosquito bites, which are usually in exposed areas of skin where mosquitoes can land.

A chigger bite itself is not noticeable. After the chigger has begun to inject digestive enzymes into the skin (usually after about 1-3 hours), symptoms and signs typically begin. Pronounced itching is the most common symptom. The area of the bite may be reddened, flat, or raised; sometimes it resembles a pustule or blister. The itch is due to the presence of the stylostome and usually is most intense within 1-2 days after the bite.

The itching persists for several days, and complete resolution of the skin lesions can take up to two weeks.

If multiple bites are present, the condition may be mistaken for eczema or allergic contact dermatitis. A history of outdoor activity can suggest that chigger bites are the cause of itching and characteristic skin changes.

### What is the treatment for chigger bites?

Many home remedies for chigger bites are based upon the incorrect belief that chiggers burrow into and remain in the skin. Nail polish, alcohol, and bleach have been applied to the bites to attempt to get rid of the chiggers by "suffocating" or killing the chiggers. But because the chiggers are not present in the skin, these methods are not effective. Home remedies to help relieve the itching associated with chigger bites may help some people. These can include:

- Taking a cool shower or applying cool compresses
- Sitting in a cool bath
- Using bath products that contain colloidal oatmeal
- OTC medicine for chigger bites (**Chigger-X**)

Treatment for chigger bites is directed toward relieving the itching and inflammation. Calamine lotion, corticosteroid creams, may be used to control itching, oral antihistamines (such as diphenhydramine (Benadryl) cetirizine (Zyrtec)), may also be used for symptom relief.

### **What are complications of chigger bites?**

Chigger bites themselves do not produce any long-term complications. However, because of the intense itching, prolonged scratching may lead to skin wounds that may become infected by bacteria. Chiggers in North America are not known to carry any diseases, unlike some other arthropods.

### **How can chigger bites be prevented?**

Washing with soap and water after outdoor activity may remove any chiggers that may be migrating on the skin and prevent their bites. Likewise, washing clothing that was worn outdoors in hot water will kill any chiggers remaining on the clothing.

Attention to the outdoor temperature can help with prevention of chigger bites. Chiggers do not bite at colder temperatures (below 60 F or 15.5 C). Chiggers also are not found in areas hotter than 99 F or 37.2 C, so hot rocky areas on sunny days can provide chigger-free seats.

As with mosquito bites, proper outdoor clothing can help prevent chigger bites. Long pants and long-sleeved shirts as well as thick socks and high shoes or boots can help prevent infestation. Pants legs should be tucked into shoes or boots if possible.

All mosquito repellents (such as DEET), applied to skin and clothing, are effective at repelling chiggers. DEET containing products are typically used as early as 6 months of age and typically 25% or less DEET containing for children.

### **Mosquito bites**

Mosquito bites are the itchy bumps that appear after mosquitoes use their mouthparts to puncture your skin and feed on your blood. The bump usually clears up on its own in a few days. Occasionally a mosquito bite causes a large area of swelling, soreness and redness. This type of reaction, most common in children, is sometimes referred to as "skeeter syndrome".

Bites from mosquitoes carrying certain viruses or parasites can cause severe illness. Infected mosquitoes in many parts of the world transmit West Nile virus to humans. Other mosquito-borne infections include yellow fever, malaria and some types of brain infection (encephalitis).

Mosquito bite signs include:

- A puffy, white and reddish bump that appears a few minutes after the bite
- A hard, itchy, reddish-brown bump, or multiple bumps, appearing a day or so after the bite or bites
- Small blisters instead of hard bumps
- Dark spots that look like bruises
- More-severe reactions may be experienced by children, adults not previously exposed to the type of mosquito that bit them, and people with immune system disorders. In these people, mosquito bites sometimes trigger:
  - A large area of swelling and redness
  - Low-grade fever
  - Hives
  - Swollen lymph nodes

Children are more likely to develop a severe reaction than are adults, because many adults have had mosquito bites throughout their lives and become desensitized.

### **When to see a doctor**

If mosquito bites seem to be associated with more-serious warning signs — such as fever, headache, body aches and signs of infection — contact your doctor.

Mosquito bites are caused by female mosquitoes feeding on your blood. Female mosquitoes have a mouthpart made to pierce skin and siphon off blood. Males lack this blood-sucking ability because they don't produce eggs and so have no need for protein in blood.

As a biting mosquito fills itself with blood, it injects saliva into your skin. Proteins in the saliva trigger a mild immune system reaction that results in the characteristic itching and bump.

Mosquitoes select their victims by evaluating scent, exhaled carbon dioxide and the chemicals in a person's sweat.

Scratching bites can lead to infection.

Mosquitoes can carry certain diseases, such as West Nile virus, malaria, yellow fever and dengue fever. The mosquito obtains a virus or parasite by biting an infected person or animal. Then, when biting you, the mosquito can transfer that virus or parasite to you through its saliva. West Nile and encephalitis viruses are found in the United States. Dengue fever has been reported in several southern states and Hawaii. Other diseases, such as malaria and yellow fever, are far more common in tropical areas of the world.

You won't need to see your doctor for a mosquito bite, unless you develop a fever or other signs and symptoms that sometimes develop after such bites.

### **What you can do**

The same treatment and prevention strategies used for chiggers (see previously used for mosquitoes). Skeeter syndrome is actually the result of an allergic reaction to proteins in mosquito saliva.

You can take several steps to protect yourself from mosquito bites.

### **Avoid and exclude mosquitoes**

Limit exposure to mosquitoes by:

- Avoiding outdoor activities when they're most active, dusk to dawn
- Repairing any tears in the screens on your windows, doors and camping gear
- Using mosquito netting over strollers and cribs or when sleeping outdoors
- **Use insect repellent**

The most effective insect repellents in the United States include one of three active ingredients: DEET, Icaridin (also called picaridin) and Oil of lemon eucalyptus (a plant-based compound). These repellents temporarily repel mosquitoes and ticks. DEET may offer longer lasting protection. Whichever product you choose, read the label before you apply it. If you're using a spray repellent, apply it outdoors and away from food.

If you're also using sunscreen, put it on first, about 20 minutes before applying the repellent.

Used according to package directions, these products are generally safe for children and adults, with a few exceptions:

- Don't use DEET-containing products on infants younger than 2 months.
- Don't let young children get DEET or picaridin-containing products on their hands or faces.
- Don't use oil of lemon eucalyptus on children under age 3 years.
- Don't apply repellent under clothing.
- Don't apply repellent over sunburns, cuts, wounds or rashes.
- When you go indoors, wash with soap and water to remove any remaining repellent.

### **Treat clothing and outdoor gear**

Permethrin is an insecticide and insect repellent used for additional protection. This product is applied to clothing and outdoor gear, not skin. Check the product label for specific application instructions. Some sporting goods stores sell clothing pretreated with permethrin.

### **Use protective clothing and gear**

Weather permitting, wear:

- Long sleeves
- Socks and closed-toe shoes
- Long pants, possibly tucked into the tops of your socks
- Light colors
- A hat that protects your ears and neck or one with mosquito netting that covers your face

### **Take preventive medication**

If you tend to have large or severe reactions to mosquito bites (skeeter syndrome), consider taking a non-drowsy, nonprescription antihistamines (Zyrtec, Claritin, etc) when you know you'll be exposed to mosquitoes.

### **Reduce mosquitoes around your home**

Eliminate standing water, which mosquitoes need to breed. To keep your house and yard free of mosquito pools:

- Unclog roof gutters.
- Empty children's wading pools at least once a week, and preferably more often.
- Change water in birdbaths at least weekly.
- Get rid of old tires in your yard.
- Empty outdoor flower pots regularly or store them upside down so that they can't collect water.
- Drain your fire pit if water collects there.

### **Ticks**

Most tick bites cause only minor injury. But some ticks may transmit bacteria that cause illnesses, such as Lyme disease, Rocky Mountain spotted fever, or Erlichia.

### **To take care of a tick bite**

- **Remove the tick promptly and carefully.** Use tweezers to grasp the tick near its head or mouth and pull gently to remove the whole tick without crushing it. Other methods — such as applying petroleum jelly, fingernail polish, rubbing alcohol or a hot match — aren't recommended.
- **If possible, seal the tick in a container.** Put the container in a freezer. Your doctor may want to see the tick if you develop signs or symptoms of illness after a tick bite.
- **Wash your hands with soap and water.** Also wash the area around the tick bite.
- **When to seek emergency care**

Call 911 or your local emergency number if you develop:

- A severe headache
- Difficulty breathing
- Paralysis
- Heart palpitations

**When to contact your doctor**

- **You aren't able to completely remove the tick.** The longer the tick remains attached to your skin, the greater your risk of getting a disease from it.
- **The rash gets bigger.** A small red bump may appear at the site of the tick bite. This is normal. But if it develops into a larger rash, perhaps with a bull's-eye pattern, it may indicate STARI or Lyme's disease. Also consult your doctor if signs and symptoms disappear because you may still be at risk of the disease. Your risk of contracting a disease from a tick bite depends on where you live or travel to, how much time you spend outside in woody and grassy areas, and how well you protect yourself.
- **You develop flu-like signs and symptoms.** Fever, chills, fatigue, body aches and a headache may accompany the rash.
- **You think the bite site is infected.** Signs and symptoms include redness or oozing. If possible, bring the tick with you to your doctor's appointment.

The same prevention and bite treatment strategies discussed for chiggers and mosquitoes are also helpful for tick bites.