



The Doctor is in

BY DR. DAVID HILL

Tick Talk

It's always been clear to me why most of the word "tick" is "ick." Few things are more repulsive than finding a live insect with its head buried in someone's skin. Ticks cause a variety of human diseases, and the more you know about them the safer you and your children are.

How dangerous are tick-bites?

The vast majority of tick bites do not cause any illness. Even in areas of the country where 30% of ticks carry the Lyme disease organism (*Borrelia burgdorferi*), the risk of a person contracting Lyme from a tick bite is only 1% to 3%. But ticks are the second most common insect vector for human disease, after mosquitoes. In addition to Lyme, they can transmit Rocky Mountain Spotted Fever (RMSF), Human Monocytic Ehrlichiosis (HME), Human Granulocytic Anaplasmosis (HGA), Tularemia, Q-fever, and Babesiosis. In addition to transmitting infections, some ticks secrete a nerve toxin in their saliva that can lead to paralysis with prolonged feeding.

Wouldn't I know if I or my child had a tick bite?

While some tick bites are itchy or even intensely painful, many are painless. Larval ticks can be as small as the period at the end of this sentence, and ticks may easily attach, feed, and drop off a host undetected. Only about half of RMSF patients ever recall a tick bite. While 90% of tick bites occur in the warm months, no time of the year is completely safe, especially in our climate.

How do ticks get on me or my children?

Contrary to what my camp counselors said, ticks don't leap like fleas. Instead they wait at the tops of tall grasses and brush for their prey. Dogs and cats can serve as vectors, bringing ticks indoors and passing them to their human companions. Once on board, ticks seek warmth, favoring the armpits, groin, scalp, and belt line.

How can we keep ticks them from biting us?

Start by avoiding tall grasses and dense vegetation. Wear long pants and long-

sleeved shirts, and avoid open-toed shoes. Tuck in whatever you can (shirt tails, pants legs). Wear light-colored clothing so ticks are easier to see. Insect repellants like DEET are effective against ticks, but remember DEET can be toxic, especially to infants and young children, so follow directions and spray clothing to minimize skin exposure. Your veterinarian should have products to protect your pets. If you or your children have been outside, perform a "tick check" twice a day. Take extra care at the neck and scalp; a fine-toothed comb can help.

How do ticks attach themselves?

Ticks use several means to get at their meal. Much like mosquitoes, they have a hypostome, a needle-like appendage they insert in the skin to suck blood. The hypostome is covered in tiny barbs that grip the skin like fish-hooks. The tick's legs also help it grasp its host. Finally, ticks secrete a natural cement that glues them in place. The germs that cause tick-borne illnesses live in the tick's digestive tract. The longer the tick feeds on its host, the more likely it is to cause an infection. For this reason frequent tick checks can literally be a life-saver.

I found a tick! How do I get it off?

First, some things NOT to do: gasoline, petroleum jelly, nail polish, alcohol, and hot matches generally do not work and may pose a risk of injury to the host. Ticks breathe 15 times an hour, so even if you could suffocate one, it would take a long time.

Ideally you want to remove the entire tick, including mouth parts and cement, without squeezing the tick's abdomen, which could drive infectious material from the tick into the host. Stores sell devices for tick removal, but generally fine-tipped tweezers or forceps will do the trick. Gently lift the tick's body perpendicular to the skin so you can grasp the head. Avoid compressing the abdomen by grabbing as close to the skin as possible. Then pull straight up slowly and steadily without jerking or twisting. Retained mouth parts may be removed with the forceps, but you'll likely do

more harm than good digging for them with a needle. Finally, clean the wound with alcohol or betadine, gently removing any cement the tick may have left behind.

I got the tick out. Are there any symptoms I should be watching for?

Some signs of tick-related illness are quite dramatic. A skin infection (cellulitis) appears as a red, warm, tender area on the skin, sometimes with streaks in the direction of the heart. These infections always warrant antibiotic therapy and may, when severe, require hospitalization. Lyme disease starts with a "target" or "bull's eye" rash around the site of the bite, usually with a red outer ring and clearing in the center. Rocky Mountain spotted fever can cause tiny red spots at the wrists and ankles.

Other signs of tick-borne disease are more subtle. Fever, headache, joint pain, muscle aches, nausea, and abdominal pain may be early signs of potentially serious infections. You may want to call your child's doctor about these symptoms if there has been a likely tick exposure in the previous few weeks.

What can my doctor do about tick bites?

Different species of ticks carry different diseases, so you may want to save any ticks you remove from your child or least take notes on the tick's size, shape, and color. For example, the deer tick that carries Lyme disease is quite small and doesn't have a white spot. After taking a history and performing an exam, the doctor may order blood tests. Because the relevant studies can take over a week to come back, your doctor will probably make a decision on treatment at the time of the visit. Fortunately, the choice of antibiotics is usually simple: doxycycline is highly effective against most of the tick-borne infections, including Lyme, RMSF, and Ehrlichiosis.

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