

# Bite Type, Infection Risk Should Dictate Treatment

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Senior Writer

PARIS — The risk of infection from bites varies considerably depending on the type of wound that is inflicted, and therefore careful assessment and treatment are required, according to wound experts speaking at a meeting of the World Union of Wound Healing Societies.

In the United States, bites account for 0.4% of all emergency department visits each year, said U. Lenz, M.D., a surgeon in Sindelfingen, Germany. On an annual basis, dog bites make up 80% (1 million to 2 million) of bite wounds; cat bites account for up to 15% (about 400,000); and human bites account for 2%-3%.

Dogs and cats typically bite adults on the head, shoulders, or arms; they tend to bite children on the head and neck. Human bites on the arms and hands are usually the result of aggression; those that are on the breasts, genitals, and thighs are usually the result of sexual acts, Dr. Lenz said.

Although dog bites may be the most common, only 2%-20% of them become infected. In contrast, as many as 50% of cat and human bites become infected. Risk factors for infection include location (hand or foot), deep puncture wounds, long delays in treatment, immunosuppression, and preexisting muscular disease.

Most infections develop as the result of puncture wounds. Of the infectious agents in dog and cat bites, *Pasteurella* bacteria are the most common, followed by *Streptococcus* and *Staphylococcus* species. Human bites have a high risk of infection because as many as 190 species of microorganisms can be found in the human mouth. In particular, human bite wounds average five to

nine species of microorganisms, with *Streptococcus* and *S. aureus* being the most common.

The wounds of fewer than 20% of those bitten by a rabid animal become infected, Dr. Lenz said.

Wild animals—primarily raccoons, skunks, bats, and foxes—accounted for 93% of U.S. rabies cases in 2001, according to the Centers for Disease Control and Prevention.

The CDC recommends observing

healthy animals for 10 days after a biting incident. Patients should not be given rabies prophylaxis unless the animal develops clinical signs of the disease.

If an animal is suspected of having rabies, vaccination should be started immediately. Rabies vaccines are administered intramuscularly in the upper arm following a bite from a rabid animal.

Tetanus shots also should be considered, said Dr. Laurence Le Mouel, a wound specialist at Hôpital Sainte Perrine

in Paris. If the patient has never been vaccinated for tetanus, do so. If more than 5 years have elapsed since the last shot, administer a booster.

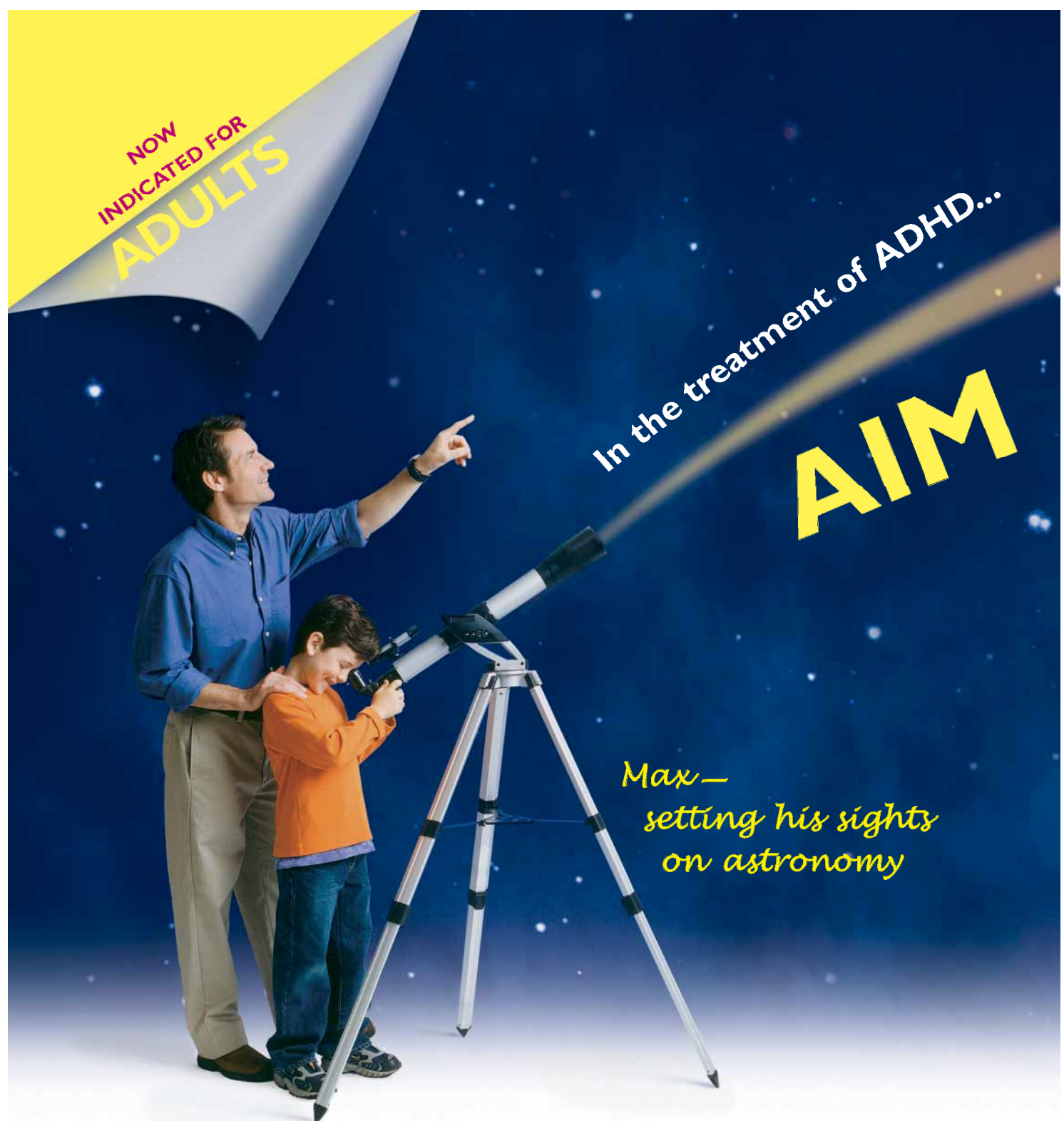
The diagnosis of a bite wound should be made based on the patient's immune status and history as well as the circumstances surrounding the bite.

During the exam, determine the type of bite damage—puncture vs. crush—and the depth of the wound; then assess nerve and tendon function. Powerful canine jaws

## Preventing Dog Bites: Eight Tips

Dog bites account for at least 80% of all bite wounds in the United States each year, so patients should be informed of ways to avoid being bitten. The Centers for Disease Control and Prevention recommends using the following behavior around dogs:

- ▶ Do not approach an unfamiliar dog.
- ▶ Do not scream and run from a dog.
- ▶ Remain motionless when an unfamiliar dog approaches you.
- ▶ If you are knocked over by a dog, roll into a ball and lie still.
- ▶ Do not allow children to play with a dog unless supervised by an adult.
- ▶ Avoid direct eye contact with a dog.
- ▶ Do not disturb a dog that is sleeping, eating, or caring for puppies.
- ▶ Do not pet a dog without first letting it see and smell you.



The most common adverse events in pediatric trials included loss of appetite, insomnia, abdominal pain, and emotional lability. The most common adverse events in the adult trial included dry mouth, loss of appetite, insomnia, headache, and weight loss. The effectiveness of ADDERALL XR for long-term use has not been systematically evaluated in controlled trials. As with other psychostimulants indicated for ADHD, there is a potential for exacerbating motor and phonic tics and Tourette's syndrome. A side effect seen with the amphetamine class is psychosis. Caution also should be exercised in patients with a history of psychosis.

typically result in crush wounds, while sharp feline teeth usually inflict puncture wounds.

Only infected wounds need to be cultured. X-rays can be useful in identifying fractures and foreign bodies.

Closed-fist injuries are the most common and significant type of human bites. These injuries typically occur during a fight when a fist strikes the teeth of another person with enough force to create a small wound.

In spite of their small size, these injuries have a very high risk of infection, said Dr. Le Mouel, because relaxation of the hand carries bacteria deeper into the tissues.

Surgical exploration is crucial with this type of injury.

Dr. Lenz recommends an aggressive surgical approach—extensive exploration and thorough debridement—for every bite deeper than a superficial wound. Thoroughly irrigate the wound with a sterile solution. If viral transmission is suspected, use an antiseptic solution such as Betadine, Dr. Le Mouel advised. Bite wounds can generally be left open; however, bites of the face and hand should be closed, Dr. Lenz noted.

Prophylactic antibiotics are recommended for human bites, delayed presentations, immunocompromised pa-

tients, and deep puncture wounds. “We use mainly amoxicillin/clavulanate [Augmentin] or the second-generation cephalosporins,” Dr. Lenz said. He typically uses the amoxicillin/clavulanate combination in doses of 875 mg given twice a day or 500 mg given three times a day.

Negative-pressure therapy is a good option for treating bite wounds, because it improves drainage, reduces local edema, and decreases local bacterial colonization.

Dr. Lenz recommends that bites on the hands, eyes, or face—or anywhere in children—be referred to a plastic surgeon. ■

#### VERBATIM

*‘Systemic [JIA] can present with systemic inflammatory manifestations such as pleuritis or pericarditis. It is possible that a sterile abscess may be a variation.’*

Elizabeth C. Chalom, M.D.,  
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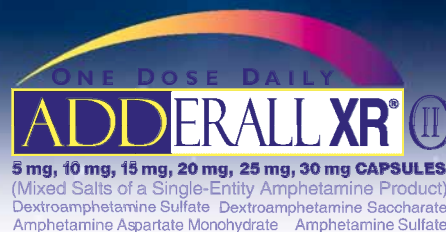
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