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Contact: Jennifer Moorer, *District PIO*
Phone: (706) 272-2125, ext. 346
Cell: (706) 280-9115
Fax: (706) 272-2221
Email: jamoorer@dhr.state.ga.us

RABIES - Deadly and Preventable

By Ray King, Environmental Health Director, North Georgia Health District

Although rabies is the most important disease transmitted from animals to people with an estimated 60,000 human deaths annually in the world, many public misconceptions persist about it. A typical view of rabies is the ‘mad’ dog, frothing at the mouth. However, cats have been the leading domestic animal with rabies in the USA for over thirty years. For most people, the word ‘rabies’ still invokes visions of an unexpected attack from a strange-behaving dog, and if you were in Africa, Asia or South American that would be typical but not in the USA. It is estimated that worldwide, 95% of human rabies deaths are the result of dog bites.

Dogs in our country can still get rabies from other species (mostly wild carnivores like raccoons and skunks) but rabies passed *among* dogs is almost non-existent. It seems hard enough to get pet owners to have their dogs vaccinated but even fewer have their cats vaccinated against rabies although it is at least as important for protecting your animals and your family.

With rabies, it all begins and ends with animals and animal bites. There are strange and rare exceptions including organ transplants from humans who died of rabies and cavers who were infected by breathing inside humid caves with many thousands of bats; but these very rare cases amount to only a handful in history. Vaccination of pets and prevention of animal bites are the most important factors in controlling rabies. In the USA, rabies in humans is a completely preventable disease. Even if you are bitten by a rabid animal, treatments are available that are 100% effective if given in time. But there is an odd twist because of the few persons who have recently died of rabies in the USA, investigations revealed less than half with a known history of an animal bite. So how were they infected? The answer is seemingly casual or unknown contact with a bat. Examination of the victims’ brain tissues showed the viruses which killed them to be of the rabies bat ‘variant’. A ‘variant’ of rabies is simply a rabies virus which is genetically

adapted to a particular species and generally passed from one member of that species to another, but occasionally infects another species. The raccoon rabies variant is another example. Make no mistake, all rabies variants can and do kill, and it is a horrific death either for animals or humans. This is why the Centers for Disease Control and Prevention changed its recommendations about contact with bats. Any direct contact with a bat must be considered potential exposure to rabies and carefully evaluated for anti-rabies treatments. Even finding a bat in your bedroom in the morning can be considered reason for initiating treatments (if the bat cannot be found and tested).

The risk of developing rabies from a bite depends on the site of the bite, severity of the bite, the species inflicting the bite, and presumably the rabies virus variant. With the exception of saliva and tears, exposure to most body fluids, blood and tissues from a rabid animal is not considered reason for anti-rabies treatments. Exposure to brain tissue or salivary tissue would probably be considered exposure and warrant treatments. But in any such case, consult your physician at once.

In North Georgia, the outbreak is a continuation of the northerly progress of rabies in raccoons that started in Florida in the 1950's. The raccoon rabies virus 'variant' maintains itself among raccoon populations with occasional 'spillovers' to other wild carnivores such as skunks and foxes. Raccoons have been the wild animal species most frequently diagnosed as rabid in the United States since the early 1990's.

Outbreaks of rabies in raccoons follow a typical cyclic pattern with a large susceptible population suffering the first epidemic outbreak with a series of successive smaller outbreaks occurring at increasing frequency. Epidemics follow a distinct course of increased activity separated by intervals in which rabies may seem to disappear or reach undetectable levels. Over time there develops a 'background' level of sporadic cases until a healthy population of raccoons recovers resulting in another outbreak. How prevalent rabies is among raccoons or how large the epidemic may become are difficult to estimate because the size of the susceptible raccoon population is almost never known. So to one degree or another, rabies is probably here to stay in North Georgia unless there is successful use of the Oral Rabies Vaccine (ORV) for wildlife throughout northern Georgia and our neighboring states.

What is the Oral Rabies Vaccine? It's a bait packet usually dropped from fixed-

wing aircraft containing a core of liquid vaccine, which the raccoon or other animal ingests. In addition to high costs with sustained applications of ORV, there are both public health threats and challenges to applying ORV and maintaining vaccine barriers. One of the problems is that ORV will not stop the disease if a raccoon is nearing the ‘rabid’ stage. So if an epidemic is at its height, ORV will do little good. Of course many species of animals eat the ORV bait and there is the danger of humans and pets becoming ill from exposure to it. So the ORV is not a panacea. Spot-treatments for local outbreaks are hard to justify especially when the object of the federal ORV program is to stop northern progression by vaccinating raccoon populations not yet exposed.

The epidemic associated with raccoons in the northeastern USA is believed to have been caused by the inter-state translocation of raccoons incubating rabies from Georgia for the purpose of restocking dwindling local populations of raccoons. It resulted in one of the most intensive outbreaks of rabies ever recorded because it eventually spread to areas with very high densities of raccoons never exposed to rabies living in urban and suburban areas. Raccoons adapt very well to human development, feeding from our food wastes.

So why not just kill all the raccoons? Elimination of wild animal reservoir populations like raccoons as a means to control rabies is neither achievable nor desirable. How would you go about killing all the raccoons when there are many areas in North Georgia that are wilderness preserves? How could you poison or trap raccoons without killing many other wild species? What is the cost-benefit? There have only been two human deaths in the USA caused by the raccoon rabies variant in more than fifty years; on average more people die of rabies acquired from bats in the USA every year. Rabies is always a tragic deadly disease, but how many of us complain about not having the federal ORV program for raccoons when our own pets are not vaccinated or are out of date.

Most cases of raccoon rabies involve a raccoon coming into the yard of a residence and then fighting with or being killed by the family dog. Sometimes the raccoon is extremely aggressive but often the raccoon walks slowly and seems disoriented and sick. **Vaccination of your dogs and cats is the barrier between you and that rabid raccoon.** If your dog or cat have been exposed to rabies and are properly

vaccinated, there's little to worry about; your pet is given a booster vaccination and simply observed at your home for the next 45 days. No big deal! But what if your pet is unvaccinated or the vaccination is far out of date?

When unvaccinated pets are exposed to rabies, extremely hard decisions must be made. The Georgia Rabies Control Manual states that such animals must be destroyed; but if the owner is unwilling to euthanize it, the dog or cat must be put in strict isolation for six months. Strict isolation means no human contact of any kind while confined to a double-pen enclosure on the owner's property.

If you are bitten by any animal that might have rabies, including dogs and cats, wash the wound thoroughly for several minutes and rinse with clean water for several more. Washing and rinsing reduces the amount of virus particles in the wound and greatly increases your chance of not contracting rabies. Apply a disinfectant and seek medical attention *at once*. Report any such bite to the Environmental Health Office of your local health department as soon as possible so that you can be evaluated for the risk of contracting rabies. The status of the biting animal is critical including the species (wild or domestic), site of the wound, time elapsed, prevalence of rabies in the area, wound treatment, and vaccination of the dog or cat. Healthy dogs and cats can be confined and observed for symptoms of rabies for ten days, and if no symptoms appear in ten days then there is no danger of rabies transmission. This is because we know that the rabies virus cannot be in the saliva of the dog or cat for more than five days before other symptoms occur. We double this time to ten days observation for a 100% margin of safety. However, this ten-day period of observation only applies to dogs, cats and domesticated ferrets and not to any wild carnivore species like raccoons. If you are bitten by a wild carnivore the animal must be killed and then tested by the state laboratory.

So do the right thing – have your pets properly vaccinated against rabies.

REFERENCE: **RABIES**, 2nd Edition. Alan C. Jackson & William H. Wunner.
Academic Press. 2007.