Can I Eat It?

By Dr. James C. Kroll, Ph.D.

Over the years I have maintained a list of questions folks ask me about deer, and from this list I've constructed an all-time top 10 group. One of the top five usually comes into the office as a hurried phone call. Some guy is out in the middle of no where and wants to know if it’s safe to eat the buck he just shot.

“Hey Doc, black bucks all over his face, he will say. “Can I eat him?” Another fellow will call in about a pile of nasty worms that showed up beneath the deer hanging on his pole, while another is wondering about the udder sore on the side of a doe. So I thought I would save myself a lot of time and answer these and other questions about the wholesomeness of the venison you are about to put in your mouth.

Deer are hosts of a host of diseases and conditions, no different from any other hoofed mammal. They are infected by many diseases and have an amazing number of accidents. Fortunately, most of these diseases and anomalies have little or no potential effect on humans, even though they are the ones most devastating to deer. Let’s start with the above questions and work our way down my list of possible concerns.

Warts commonly occur on the skin of deer. They can be quite grotesque in appearance; some may even cover the entire face of a deer. They are called “fibromas,” “papillomas,” or “papilloliosis,” depending on the makeup of the tissue involved. They are caused by viruses transmitted from one deer to the next, either by insects or direct contact with a ruptured wart. It takes about six to seven weeks for the wart to develop, and it grows very slowly. Most deer develop immunity to their own warts and lose them within a year. A skimmed species transmission. So it is perfectly safe to eat an infected deer, but it may be a little difficult to get your mind past the ugly outward appearance.

Now let’s turn to the worms. These are commonly called “nose bores,” and they are the maggots of a large fly that goes under the scientific name Cephenemyia sp. They have been known since the time of the Greeks, and Aristotle even commented on them. The one most often found in Texas and southern deer is C. phahleri. The female hatches the young maggots in her body and deposits them around the nose of a deer. They crawl into the nose and migrate to the area just behind the tongue known as the retropharyngeal pouches. The maggots feed and remain there until they reach a length of one to 1½ inches, then exit the nostrils and fall to the ground. (You may have noticed deer sneezing and snorting for no apparent reason. This probably is caused by maggot irritation. Pupation takes place in the ground and usually takes no more than three weeks. The emerging adults are like some butterflies in that they cannot eat, making their life relatively short. Papua produces late in the soil until warm conditions permit emergence. Again, other than being really ugly and somewhat distasteful, deer infected by bores are perfectly good to eat—unless, of course you want to eat the nose! What about sores and abscesses?

These are caused by a host of bacteria, including Bacteroides nodosus and Fusobacterium necrophorum. These bacteria occur commonly in the soil and can gain entrance to a deer through wounds such as abrasions to the foot and mouth and from damage from fighting. The bacteria work together symbiotically to decay the tissue around the infection site. Other bacteria may also join in on the “feast,” producing, in some cases, a large and rather nasty abscess filled with pus. Many times the deer is able to overcome the infection, but not until considerable damage is done. The bacteria and their associates also can infect humans, and the bacteria can spread within a deer’s body. Hence, it is probably not a good idea to consume venison from a seriously infected animal. You should look for a deer over carefully to assure there are no obvious infections.

Now let’s turn to parasites. Deer contract several species of worms, including large stomach worms, whip worms, hook worms, lung worms, and abominal worms. The most obvious parasite is the liver fluke (Fasciolaria magna). It is a large, flat, liver-colored worm that burrows into the liver and forms a fluid-filled cyst. The adults produce eggs that pass out of the deer’s digestive tract. If deer faces fall on wet or moist soil, the eggs then turn into an intermediate life stage, called “miracidia.” These in turn infect snails, where they then reach a further stage of development called “ cercaria.” The cercaria emerge from the snail and form cysts on vegetation (metacercaria). Deer eating vegetation along edges of streams or ponds then pick up the metacercaria, and the process begins anew.

I have found liver flukes in deer all over the South and Southwest—but just because a geographic area is dry does not mean liver flukes cannot flourish. Any place where deer congregate to feed or water can harbor liver flukes. For those of you who like to eat deer liver, the best thing to do is examine the liver by cutting it into slices about an inch thick. That will expose any flukes housed in the organ. Obviously, if you find any flukes, discard the liver. Liver flukes rarely do significant damage to a deer, but can make them less leathery. As for humans, there is no way to contract liver flukes from eating an infected liver—but a heavily infected liver is pretty nasty.

As deer populations continue to increase at an alarming rate, really serious diseases such as epizootic hemorrhagic disease (EHD) and its close cousin blue tongue, as well as coccidiosis and tuberculosis, are also increasing. The most commonly occurring are the status caused EHD and blue tongue diseases. The virus is carried by biting brats, which emerge from mud around wet
Dr. Deer

areas. Feeding on the belly region of a deer, the goats transmit the viral agent from one deer to the next. In about 14 days, the deer comes down with a very high fever, and the tissues of the mouth, digestive tract, and other organs begin to deteriorate, hence the term 'hemorrhagic fever.' It is a terrible way for a deer to die, not unlike the fate of humans infected with Ebola virus. The deer usually dies within 48 hours, but some survive due to partial resistance or because of a less deadly strain.

In the past, most deer dying from EHD/blue tongue were observed in late summer to early fall. We would find their carcasses around water, where they'd come to escape high fever. With climate change, however, we are seeing the disease almost year-round in many areas. A survivor will appear fairly normal, except for hooves with a definitive line marking the point where growth was interrupted. Bucks may also have abnormal antlers, sometimes appearing bowing and soft at the tips. The lucky deer that survive EHD/blue tongue do not appear very thirsty. They

often lose a considerable amount of weight and may not eat their summer coat until much later in the fall. A deer with such an appearance, no matter what the cause, probably should not be eaten, just to be on the safe side. However, although similar to Ebola, the viral agents causing these diseases cannot be transmitted to humans. The only real concern would be the associated pathogenic bacteria that often accompany the disease.

Lastly, bovine tuberculosis (bTB) has been a concern for farmed deer for many years. First appearing in New Zealand red stag, bTB has been reported among captive herds in a few U.S. states and Canadian provinces. The only free-ranging infection I am aware of is in the northeast portion of the Lower Peninsulas of Michigan. The disease appears to have originated as early as the 1930s from untamed Mexican cattle brought into the area. Since then, deer and cattle have co-mingled and re-infected each other many times. In spite of attempts to eradicate the disease, bTB still occurs at a fairly low infection rate in Michigan.

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I believe that unless you are immune compromised, your chances are almost zero of catching bTB from a deer. However, you should be vigilant when dressing out your deer.