

# Bacterial Infections Common to Turtles and Tortoises

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Bacterial infections are a common cause of disease in turtles and tortoises. Proper nutrition, housing, and sanitation are the best methods of prevention. However, even in the most well-cared for turtles or tortoises, infections can still occur. Some of the most common bacterial infections are outlined below, as well as their recommended treatments.

It should be stressed that this is a simplified overview of several of the most common diseases. Some of these conditions can become very complicated and may require more exact diagnostics, cultures, and treatments than those listed. Many of the treatments require antibiotics that can only be obtained through a veterinarian. If you suspect that your turtle or tortoise may have a bacterial, viral, or nutritional disease, be sure to seek out the help of a veterinarian that specializes in the treatment of turtles and tortoises.

## Necrotic stomatitis

Necrotic stomatitis is an infection often caused by either the bacteria *Pseudomonas* or *Aeromonas*. It is commonly known as 'mouth rot' and is a common bacterial infection in turtles and tortoises. Mild conditions are often treated by swabbing the infected areas with diluted Betadine. More established infections often respond to antibiotics including cephalosporins and amoxicillin. In severe cases, injectable antibiotics must also be used. There are several factors that predispose turtles and tortoises to developing mouth rot. The most common is poor jaw alignment often caused by overgrown, damaged, or improperly trimmed beaks. Mouth injuries from thorns contacted during feeding can also be a cause. Tortoises may be particularly susceptible to these infections during hibernation.

## Eye infections and conjunctivitis

Eye infections often begin as a small white spot on the surface of the cornea (the clear front portion of the eye). As the infection progresses, it can spread over the entire surface and create an ulcer on the eye. It is important that these infections are not confused with cataracts or the less common hypovitaminosis A (Vitamin A deficiency). Infections may also occur in the eyelids creating irritation and swelling. The cause of many of these infections is contaminated water in aquatic or semi aquatic turtles, or low humidity in tortoises.



The treatment of eye infections usually consists of topical antibiotic eye drops with neomycin, chloramphenicol, or gentamycin most commonly used. In aquatic turtles, injectable antibiotics may often have to be used due to the inability of keeping topical drops or ointments on the eye for a long enough time to provide treatment.

## Cloacitis

Cloacitis is a bacterial infection of the cloaca that results in an inflamed cloacal opening and a foul smelling discharge. These infections are often associated with parasitic infections, or a stone-like cloacal calculus (mineral deposit). Treatment consists of removing the stone, treating the parasitic infection, if present, and then irrigating the cloacal area with a dilute Betadine or

chlorhexidine solution. A topical antibiotic ointment is then applied to the cloacal opening.

## **Pneumonia**

Pneumonia occurs in one of two forms. The first is the acute type, and can appear suddenly and cause death in just a matter of hours, if not treated quickly. The turtle will have problems breathing, such as respiratory distress with gasping and open mouth breathing. There may be coughing or disorientation. Some tortoises with acute pneumonia may actually become hyperactive.

The second form is chronic, and turtles may also have problems breathing and chronic nasal discharge. Radiographs (x-rays) may help confirm a tentative diagnosis. Treatment for both forms consists of injectable antibiotics. The acute form usually responds better to treatment. Common antibiotics include enrofloxacin (Baytril), ciprofloxacin, oxytetracycline, or ampicillin (may cause swelling at the injection site).

## **Ear Abscesses**

Ear abscesses are a relatively common problem, particularly in American Box Tortoises. The common signs are swelling of the tympanic membrane and the resulting discharge of pus into the back of the throat via the eustachian tube. Since these infections can often be very advanced before they are noticed, treatment usually consists of surgically opening and draining the abscess. In the early stages of the infection oral or injectable antibiotics can be used. These infections are often associated with contaminated water or improper temperature and humidity levels.

## **Ulcerative Shell Disease**

Ulcerative shell disease is often called SCUD or 'shell rot' and comes in two primary forms. The dry form is often associated with a fungal infection and needs to be treated with antifungal medications. The wet form is associated with gram negative bacteria and often develops after an injury to the shell. Treatment consists of removing the infected scute and irrigating the area with a diluted Betadine solution. A topical antibiotic is then often applied.

## **Septic Arthritis and Articular Gout**

Septic arthritis and articular gout are both serious conditions that can be seen individually, but are often found together in the same affected joint. The signs include swelling of the limb joints, stiffness, and pain when the joint is manipulated. This condition is sometimes confused with rickets caused by a Vitamin D deficiency. The occurrence of gout is closely associated with an overly high intake of dietary protein, which results in a higher than normal blood urea. This condition is most common in herbivorous tortoises that are fed animal protein instead of the more natural vegetarian diet. Treatment in mild cases usually consists of injectable antibiotics, with oxytetracycline or gentamycin commonly used. The diet also needs to be corrected. In more severe cases, the limb may need to be amputated.

## **Abscesses**

Abscesses are very common in all reptiles including turtles and tortoises. The most common locations are the ears, legs, nasal passageways, jaw, and liver. Abscesses often present as hard lumps or swellings under the skin. Antibiotics are not usually very effective in controlling these abscesses, so surgical removal is the preferred method of treatment.

## **Conclusion**

Bacterial infections are a common problem in pet and wild turtles and tortoises. Many of the infections can be avoided with good sanitation, housing, and nutrition. Fortunately, with prompt diagnosis and treatment almost all of these common infections can be effectively treated.