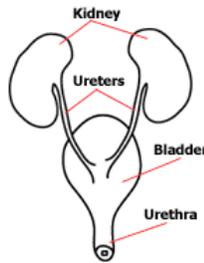




Urinary Tract Infections

The urinary tract is composed of the kidneys, ureters (connects kidneys to bladder), bladder, and urethra (connects bladder to the outside world). A urinary tract infection indicates an infection in any of these components. Bladder infections are the most common.



Cause

Bacteria, fungus, or viruses can all cause urinary infections. Most often, urinary tract infections (UTIs) are caused by bacteria. Urine is normally sterile, meaning free of bacteria. An infection occurs when bacteria is introduced to the area and given the opportunity to thrive. Bacteria can backtrack into the urinary system by traveling up the urethra.

If your pet has a decreased immune system, the bacteria will start to multiply. Things that can decrease the immune system include stress, underlying illnesses such as a mild cold, allergies, or immune suppressing diseases.

Bladder or kidney stones can also present an opportunity for bacteria to grow. Stones damage the smooth bladder wall lining and cause inflammation. This disruption of the normal barrier allows an infection to occur.

Signs



Signs of a urinary tract infection include increased drinking, increased urination, frequent urination, and possibly bloody urine. Cats with urinary tract infections tend to urinate outside the box. Dogs may have accidents in the house.

In cases of a severe infection, your pet may be painful when urinating or have a fever. If your pet tries to urinate and cannot produce any urine, he or she likely has a blockage. **This is a potentially fatal medical emergency!** Take your cat or dog to a veterinarian immediately.

Diagnosis

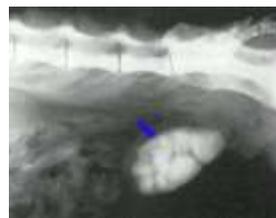
To diagnose an infection, we need to examine a urine sample. This tells us many things:

- The likelihood of an infection
- If there is kidney disease
- Possible causes of the infection
- What the pH is
- If stones are likely
- If the pet is diabetic (they are more prone to bladder infections)
- If the urine is concentrated
- If blood is present

A culture and sensitivity of the urine sample is performed to confirm an infection. The lab grows the bacteria (if any is present) and determines the most effective antibiotics. If a urine sample is not available, the doctor may decide to treat based on the signs and history.

Other possibilities

Several different things can be mistaken as a urinary tract infection. Inflammation of the bladder, known as cystitis, causes very similar signs including increased drinking and increased urination. It can be painful and cause bloody urine. However, with cystitis, there are no bacteria present.



This x-ray shows stones in the bladder

Kidney disease, diabetes mellitus, and hyperthyroidism can cause increased drinking and urination. These diseases also make your pet more prone to developing a urinary tract infection.

In females, the urethra opens into the vagina. Therefore, bacteria in the urine may be caused by an infection of the reproductive tract instead of the urinary tract.

This is why the true cause of the infection or inflammation needs to be determined. The doctor may decide to do additional testing such as blood tests or x-rays.

Treatment

Treatment involves a round of oral antibiotics. If a culture is available, the doctor will use this information to determine the best antibiotic to use for your pet. A culture should be repeated before finishing the medicine to make sure the infection is completely gone.



If we don't have a urine sample or there is no culture available, the doctor will choose an antibiotic that is most likely going to work. If the initial round of antibiotics does not clear the infection or improve clinical signs, a urinalysis is needed. If an infection is present or highly suspected, a culture is needed to confirm the infection and determine the best antibiotic to use.

Supplements are available to improve urinary tract health. Use them to help clear up infections and to prevent new ones. Probiotics should be given at the same time as antibiotics to prevent gastrointestinal upset. Given long term, probiotics also help boost the immune system and have protective properties for the kidneys and bladder.



Fish oil helps decrease inflammation and boosts the immune system. Glucosamine and chondroitin help rebuild the protective layer of the bladder. Cranberry extract helps prevent bacteria from starting infections.

Special prescription urinary diets help maintain a healthy pH and prevent stone formation. Some herbal formulas help to maintain urinary tract health, support the immune system, and may help reduce crystal and stone formation.



If your pet has had a urinary tract infection in the past, testing a urine sample every 6 months will help to find problems at an early stage. All senior pets should have a sample tested annually as part of a routine checkup to look for the start of diseases and infections.