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Kidney [disease](#) is more common as [dogs age](#). It is estimated that about 1 in 10 dogs will develop kidney disease over a lifetime<sup>1</sup>, so it's an important topic to understand. When healthy, the two kidneys efficiently:

- Filter the [blood](#)
- Process protein wastes and excrete them into the [urine](#)
- Conserve and balance body water, salts and acids
- Help to maintain normal red blood cells

Kidney disease occurs when one or more of these functions are compromised or reduced. Unfortunately, it typically goes undetected until the organs are functioning at approximately 33% to 25% of their capacity. Dogs with moderate to severe chronic kidney disease (CKD) are prone to dehydration and you may notice that your dog is [lethargic](#) and has a poor appetite. Treatment options for advanced kidney disease are usually limited to treating the symptoms because dialysis and kidney transplants are not readily available for dogs. Protecting your pooch from kidney disease means you should be prepared to look for problems early.

### Causes of chronic kidney disease in dogs

[The International Renal Interest Society or IRIS](#) is a group of veterinary specialists studying kidney disease in dogs and [cats](#). They list several risk factors that make pets more susceptible to kidney disease, such as age or [breed](#), and investigate reversible factors that initiate or accelerate kidney damage. Such factors include:

- [Glomerulonephritis](#)
- Pyelonephritis (kidney infection)
- [Nephrolithiasis \(kidney stones\)](#)
- Ureteral obstruction & hydronephrosis (stones)

causing a blockage)

- Tubulointerstitial disease (involving the kidney tubules)
- [Leptospirosis](#)
- [Cancer](#)
- Amyloidosis (protein problem)
- Hereditary nephropathies (genetic problem)

### Signs of chronic kidney disease in dogs

One of the earliest signs of kidney disease in dogs is [urinating](#) and [drinking](#) more (polyuria/polydipsia or PU/PD). Often, dogs need to urinate at nighttime (nocturia) or have "accidents." There are many other causes of PU/PD, but kidney disease is one of the most serious concerns. Taking water away from your dog could make chronic kidney disease worse, so please don't try to do this without your [veterinarian's](#) direction. Having your dog examined promptly when you note a change in water intake and urine production is key! Dogs tend to be pretty sensitive to changes in their blood levels of waste so even mild to moderate changes may cause signs of illness.

### Other signs of chronic kidney disease include:

- [Urinary incontinence \(urine leakage\)](#)
- Dehydration
- Lethargy
- [Reduced appetite](#)
- [Vomiting](#)
- [Weight loss](#)
- [Bad breath with a chemical odor](#)
- Oral ulcers
- Pale appearance

### Testing your dog for chronic kidney disease

**Your veterinarian will often suggest these basic tests:**

[Physical Examination](#)— The first test your veterinarian is likely to perform will be a physical examination, and remember that taking your dog in for routine physical examinations is an excellent way to help protect him. Even normal physical exams may be useful later as a baseline of comparison. During the exam, your veterinarian might detect:

- Enlarged, painful kidneys
- Back or flank pain

- Changes in the prostate or urinary bladder

A rectal examination can give more detail about the possibility of urethral, bladder or prostatic disease that might relate to kidney disease. Finding a large bladder in a dehydrated pet, or other, less specific, findings may also warn your veterinarian about a kidney problem, for example:

- Low body temperature
- Excessive skin tenting
- Dry gums (showing dehydration)
- Unkempt hair coat

### Other testing may include:

- **Complete blood count (CBC)**—The CBC may reveal anemia (too few red blood cells) or an elevation in white blood cells consistent with [infection](#), [stress](#) or [inflammation](#). Less commonly, blood [parasites](#) or circulating cancer cells are found.
- **Chemistry profile with electrolytes**
- **Urinalysis with sediment exam**—Examining a urine specimen, especially prior to any treatment, is a simple and economical way to gauge urine quality.
- **Urine culture with susceptibility**
- **Urine protein to creatinine ratio**
- **Infectious disease testing**—Regular testing for [heartworm infection](#) and for vector borne diseases such as [Ehrlichiosis](#) and [Lyme](#) can identify risk factors for kidney disease.
- **Diagnostic imaging**—Using radiography ([X-rays](#)) and diagnostic ultrasound to identify changes in the size, shape and architecture of the kidneys may suggest a specific blockage that needs [emergency](#) treatment.
- **Blood pressure measurement**—High blood pressure is common in dogs with chronic kidney disease.
- **Kidney Sampling**

### Management and monitoring of chronic kidney disease

Sick pets with signs of kidney disease that include

dehydration will likely require more intensive care in a hospital setting, while those that are happy tail waggers and are completely self-supporting will often be treated at home. Your veterinarian will work diligently to find a treatable cause of kidney disease and make individual recommendations for your dog.

### General treatment goals for dogs with kidney disease include:

- Providing adequate and appropriate [nutrition](#) with a kidney friendly [diet](#) (always check with your veterinarian before making any diet changes).
- Ensuring excellent hydration.
- Balancing salts and acid-base levels.
- Aggressively treating any protein problems or high blood pressure, since these conditions tend to worsen kidney damage<sup>2</sup>.
- Keeping plenty of fresh water available—this is essential!

Keep in mind that dogs with kidney disease are usually going to need more trips outside for bathroom breaks, so building this into the household schedule will be important. A friendly neighbor can help out, or a professional dog walker can come to give your pooch a midday break and help you avoid coming home to a puddle or two on the floor. He really can't help it!

Your pet's condition, any other illnesses found and your personal goals for treatment will help determine the course of treatment and dictate how often you visit the veterinarian.

### Chronic kidney disease prognosis/advances

Some dogs with chronic kidney disease will live years after diagnosis and have a good quality of life. Others will not be so lucky. Your veterinarian will evaluate after testing is finished.

As a motivated pet guardian you can take an active role in your pet's preventive care by planning for wellness exams and routine lab testing. Team up with your veterinarian to address any problems before they get worse. The discovery of new biomarkers for kidney

function, such as SDMA, provides for early recognition of kidney disease before other blood values change and offers the prospect of earlier intervention and kidney care<sup>3</sup>.

*If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.*

### Resources:

1. [Brown SA. Renal dysfunction in small animals. The Merck Veterinary Manual website. Updated October 2013. Accessed January 14, 2015.](#)
2. Polzin DJ et al. Evidence-based management of chronic kidney disease. In Bonagura J, Twedt D (eds), Kirk's Current Veterinary Therapy XIV, Elsevier Saunders, St Louis 2009: 872-879.
3. <https://www.idexx.com/small-animal-health/solutions/articles/sdma-diagnose-kidney-disease.html>