

## Symptoms of kidney disease

- Changes in water intake
- Changes in urination (more frequent, or having accidents in the house)
- Decreased appetite/not eating
- Weight loss
- Vomiting and/or diarrhea
- Dehydration
- Depression and fatigue
- Ulcers on the tongue, gums, and lips
- Pale gums

## Testing recommendations

Testing recommendations made by your veterinarian are based on your pet's breed, age, clinical signs, and history.

- Chemistry Panel, Complete Blood Count
- Chemistry Panel, Complete Blood Count, Thyroid Testing, Urinalysis
- Chemistry Panel, Complete Blood Count, Thyroid Testing, Urinalysis, Blood Pressure, Electrocardiogram

### Physiological Age in Human Years

Cat <sup>1</sup>		Dog <sup>2</sup>				
Current Age (Year)	Human Years	Current Age (Year)	Human Years			
			0-20 lbs	21-50 lbs	51-90 lbs	Over 90 lbs
6 Months	10	1	15	15	15	15
1	15	2	24	24	24	24
2	24	3	28	28	30	32
3	28	4	32	33	35	37
4	32	5	36	37	40	42
5	36	6	40	42	45	49
6	40	7	44	47	50	56
7	44	8	48	51	55	64
8	48	9	52	56	61	71
9	52	10	56	60	66	78
10	56	11	60	65	72	86
11	60	12	64	69	77	93
12	64	13	68	74	82	101
13	68	14	72	78	88	108
14	72	15	76	83	93	115
15	76	16	80	87	99	123
16	80	17	84	92	104	
17	84	18	88	96	109	
18	88	19	92	101	115	
19	92	20	96	105	120	
20	96					
21	100					

## My Next Appointment

Pet: \_\_\_\_\_

Date: \_\_\_\_\_

Doctor: \_\_\_\_\_

Contact Number: \_\_\_\_\_

Reason for Appointment: \_\_\_\_\_

\_\_\_\_\_

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1. Adapted from American Association of Feline Practitioners - <http://catfriendly.com/cat-care-at-home/life-stages/>

2. Adapted from Eldredge, Debra M, Carlson, Liisa D. et al. Dog Owner's Home Veterinary Handbook, 4th edition, Wiley, Ames, IA, 2007.

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# A PET OWNER'S GUIDE TO KIDNEY DISEASE



The primary function of the kidneys is to filter out toxins from the body, reabsorb water, and concentrate urine. The kidneys are also responsible for maintaining normal red blood cell levels, blood pressure, proper calcium levels, and electrolyte balance. In a diseased state, the kidneys lose their ability to function normally, resulting in dehydration and failure to filter toxins out of the blood stream. These toxin buildup depress appetite and, which further dehydrates your pet and decreases nutrient intake. Toxins buildup can cause vomiting, generalized weakness and lethargy throughout the body.

## Causes of kidney disease

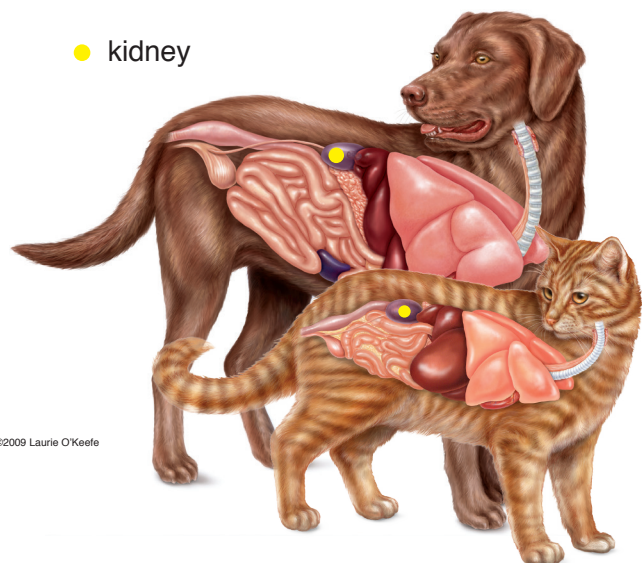
Kidney disease can affect both dogs and cats, with incidence increasing as the animal ages (the mean age of onset is 9 years old). As a pet ages, or if the kidneys are damaged, kidney function can be lost and symptoms of disease result. The term chronic kidney disease, or CKD, refers to the damage to a dog or cat's kidneys that has been present for months to years. When greater than two-thirds of kidney function is lost, pets are no longer able to conserve water, and they will pass larger amounts of urine.

Animals with genetic predisposition for kidney disease include:

**Canine:** Bull Terrier, Cairn Terrier, Shar Pei, German Shepherd

**Feline:** Abyssinian, Persian

● kidney



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If you think your pet may be at risk for kidney disease, or has been diagnosed with kidney problems, talk with your veterinarian regarding your concerns. Your veterinarian will outline their recommendations for treatment, clinical diagnostic evaluation, and expectations.

Working closely with your veterinary team can help detect early disease, increase response to treatment and lessen overall cost of care.

## Diagnosing kidney disease

The diagnosis of kidney disease is based largely on tests that evaluate the kidney's ability to filter toxins out of the blood stream, regulate hydration status and electrolytes, control blood pressure, and influence red blood cell production. Your veterinarian may recommend some of the following testing:

### Complete Blood Count (CBC)

This hematology test provides measurements of red blood cells (RBC), white blood cells (WBC), and platelets.

### Urinalysis

This test allows the medical team to assess if your pet can concentrate urine normally, if there is protein in the urine or if there are changes in the cells of the urine that could suggest infection, cancer, or other kidney disease. Results of this test also assist in staging your pet's kidney disease, and determine if causes other than kidney dysfunction are present.

### Blood Pressure

Diagnose/monitor concurrent hypertension, and tailor antihypertensive therapy for your pet.

### Chemistry Blood Tests

These tests provided useful indicators of the health and function of your pet's organ systems and fluid balance, measure toxins that should normally be removed, and evaluate electrolytes for problems that may cause worsening kidney damage or other symptoms. Parameters that focus on the kidneys include:

#### • Albumin (ALB)

A protein that helps carry necessary nutrients around the body. In some forms of kidney disease, albumin is lost due to decreased function of the kidneys. Severely low albumin levels result in poor healing and fluid accumulation in the chest and abdomen.

#### • Blood Urea Nitrogen (BUN)

A form of conjugated ammonia produced within the liver to be excreted by the kidney. As kidney disease worsens, BUN increases proportionally.

#### • Creatinine (CRE)

A small amino acid excreted primarily by the kidneys. In general, the more the kidneys are affected, the higher the blood creatinine level.

#### • Electrolytes (K+, Na+)

Potassium (K+) and sodium (Na+) can be affected when kidney function is compromised. Changes in electrolyte balance can affect energy, appetite, and strength.

#### • Phosphorus (PHOS)

An electrolyte excreted by the kidneys. With severe renal disease, elimination can be very difficult, and phosphorus levels can increase dramatically.

#### • Calcium (Ca)

Elevations can be an early sign of certain cancers. Imbalanced calcium and phosphorus levels are indicative of certain metabolic disease, such as those of the parathyroid gland and kidney disease. Ionized (iCa) calcium is sometimes needed to monitor disease progression and adjust medications.

## Advanced diagnostic testing and monitoring

Medical testing can vary depending on the patient, their presentation, and history.

In some cases, your veterinarian may also suggest additional testing to help diagnose your pet. Advanced testing may include:

- Urine culture
- Abdominal radiographs (x-rays)
- Abdominal ultrasound
- Biopsy

Monitoring your pet's disease allows your veterinarian to assess the effectiveness of treatment and make changes to medication and diet as needed. Although chronic kidney disease is not curable, appropriate support and diagnostics allow your veterinarian to tailor treatment specific to your pet's disease state, and potentially slow down the progression of the disease, increasing the quality and length of your pet's life.