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Urine Protein

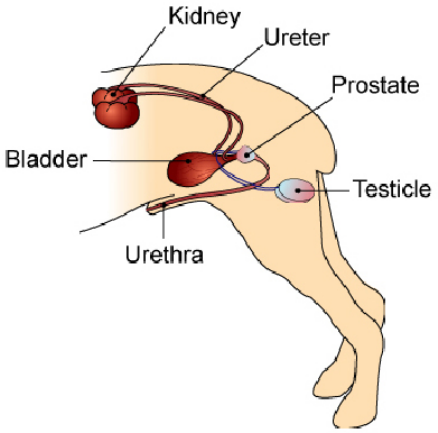
Why is finding protein in urine a cause for concern?

"...persistent loss of protein in the urine represents a waste of a precious resource that is difficult to replace."

Protein is used throughout the body in a variety of ways, and is especially important for growth and repair. Maintaining adequate levels of protein is critical for the long-term health of an animal, and any persistent loss of protein in the urine represents a waste of a precious resource that is difficult to replace.

What are the causes of protein in urine?

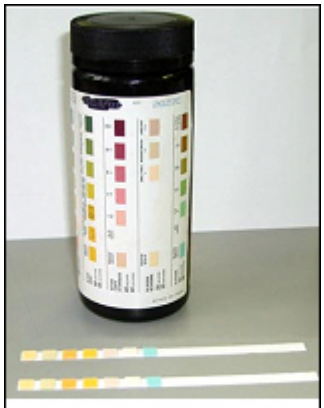
The presence of protein in urine is called *proteinuria*. The most common cause of proteinuria is inflammation or bleeding somewhere in the urinary system. The bladder is frequently the source, but the, kidneys, prostate gland (in the male dog), or vagina (in the female) can be involved. The most serious cause of proteinuria is primary kidney disease, resulting in the loss of protein without either inflammation or bleeding being present.



Is all proteinuria important?

Proteinuria is usually a sign of underlying disease and should always be investigated. Proteinuria caused by bleeding or inflammation is less worrisome because the underlying condition can usually be treated and cured. Unfortunately, when proteinuria is caused by a primary kidney problem, the underlying disease is often complex, difficult to diagnosis, and hard to treat. Therefore, protein loss from the kidney always warrants further testing.

What tests are required to determine the origin and significance of proteinuria?



A urine dipstick is used to test the chemical properties of urine such as

The first test is a **complete urinalysis, including sediment evaluation** (see handout "Urinalysis"). This test provides a preliminary estimate of how much protein is in the urine, and determines if there is substantial inflammation or bleeding that could explain the proteinuria.

What should be done if the urinalysis reveals proteinuria with signs of bleeding and inflammation?

If the urinalysis reveals inflammation or bleeding, the proteinuria is likely the result of a specific problem. Your veterinarian may suggest further testing to rule out a variety of conditions including bacterial infection, bladder stones, prostatic disease (in the male dog), and cancer. Following treatment, a repeat urinalysis is often recommended to determine if the inflammation, hemorrhage, and proteinuria have disappeared.

What if proteinuria is present in the absence of inflammation or bleeding?

"...serious problem may exist in the kidney."

If proteinuria is present and there is no detectable inflammation or bleeding, then a serious problem may exist in the kidney. The best test to determine the seriousness of the problem is the **Urine Protein**: **Creatinine Ratio** (see handout "Urine Protein:Creatinine Ratio). A persistent elevation in the protein:creatinine ratio above acceptable levels is a reliable indicator of kidney disease, and further testing may be recommended, including ultrasound of the kidneys and kidney biopsy. Once there is a definitive diagnosis, effective management of the problem may be possible.

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