



## **Avoiding Urinary Stones in Your Bathtub**

When I was a kid, we had a cat with urinary crystals. I didn't know it, but that was why he peed in our bathtub all the time. I just thought the poor thing was weird. As my mind turns to spring cleaning, I remember old Boo Boo Kitty and the regular mess he made for my Mom. I'm sure other pet owners have similar stories, so let's talk about this a bit.

One of our customers recently told us how her dog's urinary crystal issue cleared up after transitioning to Carna4. Delighted with the results, she wanted to know exactly what urine pH level Carna4 produced.

The answer is not a definitive number but speaks more to the holistic way an animal's body functions. A pH level is defined as the concentration of hydrogen ions, which ultimately determines the measure of acidity or alkalinity in the body. A low pH (under 7) is acidic, and a high pH (over 7) is considered alkaline. A healthy urine pH for a dog is a slightly acidic range of 5.5 – 7. Urine pH is influenced by multiple factors and is the sum of all the body's metabolic processes, from digestion to elimination, each working together to determine the acidity or alkalinity of the waste product. The body does not have one single pH level, however. Instead different systems within the body maintain ideal pH levels for what is needed for those functions. For example, the pH of the mucous membrane in the mouth will be different than that found in the blood. Body systems are designed to function at ideal levels of acidity or alkalinity, and when the pH is off in one area it is often struggling in another. Urine pH is a handy measure for assessing whether the uro-genital and digestive systems are functioning at an acid/alkaline level conducive to discouraging crystal formation. It is important to note that struvite crystals are present in many, many animals without causing any problem at all. It is only when a urinary tract infection is present, causing those struvites to become urolithic crystals that the dog or cat suffers. It is actually the presence of a UTI + struvite crystals that precipitates the presence of these painful bladder stones.

If your dog or cat's urine pH starts to test out at 8 or 8.5 then your animal likely is fighting an infection and this is often your signal that it is time to act. How do we avoid getting into that state in the first place?

Diet is everything, and not just the low-protein diet you may have heard about. While low protein will help resolve a stones issue in the short term, it is not a long-term solution, and can in fact backfire by robbing the body of important protein needed to repair the immune system!

Preventing a UTI, or any infection for that matter by following a healthy whole foods diet is actually the key to preventing stones. Certain ingredients also have a big impact on the pH. A diet containing a lot of highly processed ingredients such as meat or vegetable meals and additives such as lactose, sucrose or fructose elevates and creates an unbalanced concentration of calcium in an animal's urine. Too much magnesium will do that too, as well as a low level or poor source of phosphorus, which also raises the calcium concentration – creating oxalate crystals and potentially kidney stones. Vitamin imbalances and formulation errors which can occur with synthetic premixes or sub-standard ingredients, can also wreak havoc. A diet too low or too high in Vitamin D can increase urine calcium – leading to crystals or urinary disease over time. Similarly, a Vitamin B6 deficiency can increase blood oxalate levels and also form crystals.

Although diet is the key, the pH resulting from dietary choices is still very important for overall health. In practical terms, meats, fats and sugars creates acidic ash, whereas plant foods and whole grains create alkaline, neutralizing ash. Animals need mostly meat to be healthy, but an over-acidic pH body environment can cause inflammation and allow diseases to thrive. We know that cancer cells require an acidic environment, so a more over-all neutral to alkaline body system will help deter this scourge. In the end, knowing specific urine pH levels are less important than knowing how to feed your animal properly with whole, minimally processed foods with no synthetics because bladder health is the result of a variety of the dietary factors explained above. Keeping the whole animal in a healthy state so as to avoid infection is the top strategy for avoiding crystals.



Check out our Carna4 Cat Food in both Fish and Chicken recipes, each containing only well-selected whole foods required to maintain naturally good health in every cat so none of them end up wanting to pee in the bathtub!