

Ketones for Beginners and the Ketone-Impaired ;)

Welcome sugarcats and beans. This page is intended to provide a very basic overview of ketones in easy to understand language (and with helpful pictures!).

Please make sure to understand what ketones are, what can cause ketones, what the signs of ketones are, and what you can do to detect ketones.

If anything on this page isn't clear or you'd like further information, please also reference [Fawn's Ketone mini-FAQ](#), Kathy's Hows and Whys of Ketones or [PetswithDiabetes.org's page on Ketoacidosis](#). Of course, feel free to [drop Gorb a line](#) with any additional questions or comments.

Much thanks to our beta readers - who aren't dummies at all actually, truth be told :)

What are ketones?

Ketones are a fat by-product (an acid) that is created when the body burns fat for energy. Ketones happen in people as well as cats ("The Zone" diet actually encourages development of ketones to burn stored fat).

In a diabetic, the underlying problems that contribute to the ketones developing usually mean the body is not in good enough shape to overcome the ketones by themselves and "move on". An FDMB member described ketones along these lines (apologies for butchering your words, whoever you were):

- **You're having a party. You order 100 pizzas (pizzas = glucose).**
- **The pizza place only has one delivery guy and he can bring 10 pizzas own his own.**
- **Your guests are hungry and get fed up, they start ordering Chinese (chinese = ketones).**

So - the body needs energy to run. It goes to the usual sources but there's not enough insulin to turn glucose/carbs into energy. So to keep the body going it starts to burn stored fat for energy. The ketones are an acid by-product of this process.

Doesn't sound too pleasant, does it? Having been there - its not pleasant at all. And if left untreated ketones will continue to develop into a life-threatening situation.

What can cause ketones?

You already understand that the true cause of ketones is the body burning stored fat for energy. Here are a couple of situations where this might be more likely to happen:

- infection
- unregulated/undiagnosed diabetes
- high blood glucose numbers for a long period of time
- anorexia / not eating regularly

It does seem from my experience that some cats are more prone to ketones (Gorb had ketoacidosis and has "spilled" ketones into his urine 2x over the past year). Some cats will never get ketones - but it seems to me that it is safer to test everyone on a regular basis than to find yourself in a crisis situation (\$15 for a bottle of ketone test strips versus \$1,000s of dollars in emergency treatment).

Think of ketones like your in-laws. Sometimes they'll just show up out of the blue. Other times, they may hint at stopping by (these will be times when you're busy and tired usually). If you let them in and they make themselves comfortable, it's going to be da*n hard to get rid of them !

What are the signs of ketones?

Ketones and their more serious step-sister ketoacidosis will usually show themselves in the following ways:

- bad breath - not the normal cat breath, an almost fruity - acetone (nail polish remover) smell
- lethargy - you read what ketones are, if your kitty has them they probably feel pretty crappy
- vomiting and lack of appetite - again, kitty feels very unwell and will usually refuse to eat after a while
- loss of weight - remember, the ketones are burning stored fat so if kitty is losing weight with no other explanation keep your eyes peeled

How can I know if my cat has ketones or ketoacidosis?

Ketones are expelled from the body via the kidneys and the lungs. One of the things that tipped us off that something was seriously wrong with Gorb was that he started to get a bad cough (we didn't know he had diabetes yet). You can easily test for ketones via urine testing strips and we recommend all sugarcat caregivers test regularly.

Here is a picture of a box of ketodiastix (you can pick these up at any pharmacy for around \$10-15/box):

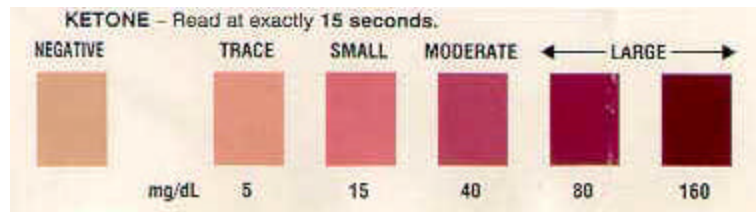


There are several ways to do the urine test, what we do is hold the stick directly in the stream of Gorb's urine (after the first couple of times we figured out exactly where he "aimed" LOL). Other folks line the box with different materials so that the urine collects and isn't absorbed by litter. If you're having a tough time

getting a sample, post for advice on the FDMB. One person even came up with a "cat box alarm" system!

You get the sample, make sure to time 15 seconds exactly, and match the stick to the color chart on the bottle. Note: its important to time the test exactly, after a while the strip will darken itself and you may get a false reading - giving yourself a false heart attack.

Here's the ketone color chart from the bottle:



You're probably looking at this and saying to yourself "gee, NEGATIVE and TRACE are pretty close...how do I tell which is which?". You're right - negative and trace are close and it is difficult to tell the difference at first. NEGATIVE is a peach-ier color and TRACE is a pink-ier color. If you do ever get a TRACE reading, trust me you will know right away. That slight pink color will look practically neon to you.

We make sure to test for ketones at least once a week - and recommend the same even if your cat has never had ketones. We always test with 2 strips at a time - the bottle is only good for 6 months after you open it so instead of throwing more than 1/2 of the bottle out - we double up, which also means we don't have to question the results and wait for another opportunity :)

If your kitty shows any of the signs mentioned above, (vomiting, not eating, feeling crummy) it would be a good idea to do an extra test, at least for peace of mind.

So, today's message was brought to you by the letter "K"! Hopefully, you now have a basic working knowledge of what ketones are and know the importance of testing for them regularly. If you do suspect your cat may have ketones or you get a positive reading when testing urine, you should call your veterinarian right away. Ketones can develop quickly into a very dangerous situation so it is not one of those "well its Friday, we'll wait 'til Monday to call the doctor" situations.

Thanks for your time, we hope this document has been helpful. Please let us know if you have any suggestions for the document or questions about it.