Taurine deficiency in your cat

Taurine deficiency can develop as a result of feeding an unsuitable diet to cats. It can lead to a variety of serious health problems. However, early recognition of the problem and correction of the diet will ensure that most cats make a speedy recovery.

What is taurine?

Taurine is one of the amino acids that are the building blocks of proteins. It has a wide variety of functions within the body. In cats, taurine is considered an essential amino acid. This means that it can only come from the diet because cats find it difficult to make taurine from the other amino acids in the body. They also have limited ability to store taurine. Taurine deficiency is less commonly seen in other mammals because these are able to make and store taurine if required.
Why does my cat need taurine?

Taurine is essential for proper cardiac function, vision and hearing and for reproductive, neurological and immune system health. Taurine deficiency in cats can result in a serious heart disease (dilated cardiomyopathy), in which the heart muscle is thinned and weakened. This failing heart may result in back-up of blood into the lungs, and congestive heart failure. Taurine deficiency can also result in degeneration of the cells of the retina at the back of the eye, which can cause visual impairment and blindness. In cats used for breeding, taurine deficiency can result in stillbirths, miscarriages and the birth of kittens with a low birth weight and birth defects.

Which foods contain taurine?

Taurine can only be found in foods containing animal proteins. The highest levels are found in meat, fish and seafood, with lower levels found in egg and dairy products. Plant foods (fruit, vegetables, seeds, nuts, legumes and grains) contain no detectable taurine and so vegan or vegetarian diets are not suitable as a sole food for cats. Heat treatment of foods and meat can decrease taurine content to varying levels. All commercial cat foods should contain sufficient taurine because they are supplemented with additional levels but commercial dog food is unlikely to contain enough taurine for cats. The addition of certain proteins and fiber (eg rice bran) can decrease the availability of taurine for absorption from the gut.

How would I know my cat was deficient in taurine?

You may suspect that your cat is deficient in taurine if they have not been fed a commercial cat food, particularly if they have been on a vegetarian or vegan diet, a diet high in grains or a dog food diet. It can also be difficult to ensure that homemade diets contain adequate taurine.

Cats can be deficient in taurine for months to years before clinical signs develop. There are no symptoms that are specific for taurine deficiency but cats may show signs associated with
the development of heart disease such as lethargy, poor appetite, decreased exercise tolerance and trouble breathing. If retinal degeneration occurs, this will result in visual impairment. You may notice your cat bumping into things or moving more slowly, being hesitant or clumsy when jumping up or down or vocalizing more. Their personality may change and they may become more nervous, withdrawn or insecure. As mentioned above, cats may have stillbirths or abortions and kittens may be underweight, slow to grow or have birth defects.

**How will my veterinarian diagnose taurine deficiency?**

Your veterinarian may be suspicious of taurine deficiency based on your cat’s dietary history. If your cat is diagnosed with dilated cardiomyopathy, usually by means of a heart ultrasound, this may also raise suspicion for taurine deficiency. Evidence of retinal degeneration, detected on examination of the eyes, may also raise suspicion.

Your veterinarian may take a blood sample from which taurine levels can be measured, although this test can sometimes be inaccurate if the blood sample is handled inappropriately, if there has been recent muscle damage or if the cat has recently eaten a meal.

**How will my cat be treated?**

Treatment usually involves introducing a diet with appropriate levels of taurine. An additional taurine supplement, available in several forms, is typically given for several months, along with the new diet. Occasionally longer term supplementation will be required.

Additional medications for dilated cardiomyopathy and congestive heart failure may also be required.

**How can I prevent taurine deficiency in my cat?**
The best and easiest way to prevent taurine deficiency is to feed a commercial cat food. If you prefer to feed a homemade diet it is important to consult a veterinary nutritionist to ensure the diet contains adequate taurine levels, as well as other nutrients.

**Will my cat recover?**

If taurine deficiency is detected early enough, then there is a good chance your cat will recover. Dilated cardiomyopathy can be reversed in many cases with adequate taurine supplementation. Retinal degeneration usually cannot be reversed, but taurine supplementation can stop or slow its progression. While most animals respond rapidly to taurine supplementation a few do not have a good response.

If you are concerned about the diet you have been feeding your cat – or any other health concerns - make an appointment to discuss this with your veterinarian. Early correction of any dietary imbalances can ward off the risk of any health problems developing.