

Xylitol Toxicity

Xylitol is a 5-carbon sugar that has recently been used in baked goods, desserts, toothpaste, and sugar free gums such as Orbitz® or Trident®. In people there is little to no increase in insulin secretion or change in blood sugar concentrations. In dogs however there is rapid, severe, increase in blood insulin concentration, which can lead to profound weakness, inability to walk/rise, low blood glucose, vomiting, electrolyte abnormalities, and seizures within 30 to 60 minutes. Some dogs can also show changes in the liver 8 to 12 hours after ingesting Xylitol. The effect of Xylitol on the liver varies from mild increase in liver enzymes to acute liver failure, hemorrhage and life threatening disease processes such as disseminated intravascular coagulation. Most dogs that develop signs of liver failure often do not show signs of low blood sugar after ingestion. It is important to avoid exposure to Xylitol in your pet since we are not sure of what factors increase the risk of development of liver failure.

One piece of chewing gum that is largely sweetened by xylitol or is sugar free will contain approximately 1-2 grams per piece. In small breed dogs one piece alone is enough to cause clinical sign.

Treatment and management of exposure to Xylitol includes immediate presentation to a veterinarian to induce vomiting. Removing the toxin from the system is key since activated charcoal does not bind Xylitol. After induction of vomiting patients are placed on intravenous fluids to help dilute any remaining toxin in the blood stream. Their blood sugar is checked often and dextrose is added to the fluids as needed. Baseline blood work, especially the liver enzymes (ALP, ALT and total bilirubin) is also very important. Blood work will be repeated in 8 to 12 hours to monitor any changes to the liver. In severe cases the ability to clott will be affected since the liver makes many clotting factors. Coagulation profiles are also useful for monitoring liver function.

At this time the exact mechanism of xylitol induced liver failure is unknown. There also does not appear to be a correlation between dose and clinical signs at this time. Because of the unknown effects of Xylitol in dogs, any dogs with exposure is recommended to be seen by a veterinarian and receive aggressive supportive and medical care as soon as possible. The effect of Xylitol on cats is unknown at this time.