



### **John Wehe, DVM** **Downtown Greensboro** **Animal Hospital**

Dr. John Wehe is a Greensboro native. He is the owner and veterinarian of Downtown Greensboro Animal Hospital, a new animal hospital in downtown Greensboro that opened in March 2013. Dr. Wehe attended

North Carolina State University College of Veterinary Medicine and received his Doctorate of Veterinary Medicine in 2007. His professional interests include small animal medicine, surgery and ultrasonography. He values serving his patients and educating his clients, as well as getting to spend time downtown. Dr. Wehe shares his life with his amazing wife and four children.

## RABBIT NUTRITION

As veterinarians, we are tasked with understanding the biology and health requirements for many different types of animals. Unfortunately, not all animals were created equally and their nutritional requirements are unique to their design. In this article, I will review the rabbit gastrointestinal tract (GIT) biology and the unique nutritional requirements of rabbits. This is important, as rabbits are very popular small mammal pets. We receive inquiries from pet owners all over the

Triad looking for a veterinarian who can care for their pet rabbit. We also receive weekly phone calls from distressed pet owners concerned because their rabbit is not eating and not producing feces. Unfortunately, this is too common and I believe results from being misinformed about the nutritional needs of a rabbit. Proper nutrition is critical to the health of your rabbit.



Rabbits are herbivores and frequent feeders. They do not require high protein or sugary carbohydrates in their diet, and they do not need scheduled meals. Their diet should consist of grazing on grasses and herbs. Rabbits have a unique GIT that is completely reliant on fibrous plant material, in order to maintain the health, function and production of nutrients. Plant

material is made up of digestible and indigestible fibers.

The digestive tract of a rabbit is divided into three different sections: the stomach, the small intestines and the hindgut (cecum and colon). Unlike ruminant herbivores (cows), in which fermentation of digestible fibers occurs in their rumen or stomachs, rabbits are hindgut fermenters. Digestible fibers are broken down by good bacteria (normal microflora) in the rabbit's hindgut (cecum). The symbiotic relationship results in a food source for the bacteria and energy source for the rabbit. The most important part of this symbiotic relationship is the production of a soft, mucous-y stool called a cecotroph. Cecotrophs

are a unique food source for the rabbit. They are directly ingested by the rabbit after passage from the anus. After reingestion of the cecotrophs by the rabbit, they are broken down in the small intestines as an important protein source for the rabbit.

Many people mistake cecotrophs as diarrhea in their pet rabbit. This is not the case. It is not diarrhea, it is a normal part of the healthy rabbit nutrition plan. However, if you do see these left in the rabbit's environment and the rabbit is not regularly consuming the cecotroph, then this is indicative of improper nutrition for the pet rabbit.

Indigestible fibers are important to the rabbit GIT, as well. The indigestible fibers act to promote continuous proper motility of the GIT. They transport water through the GIT to the hindgut. They also help to remove hair from the stomach that your rabbit consumes through normal grooming. The end result of these indigestible fibers are the numerous firm, round fecal pellets your rabbit produces throughout the day. Without the indigestible fiber source, the specially designed GIT of the rabbit does not work, and your rabbit's health will suffer.

Grass hay is important in the dental health of your rabbit. Healthy rabbits chew grasses over long periods of time. This provides necessary filing of the rabbit's molars and premolars in the back of their mouth. Without this grinding action, that only results from chewing grass hay, those teeth will grow abnormal sharp points that can damage the gum tissue in the mouth and result in pain and oral infections.

Leading veterinarians in rabbit nutrition highlight the following diet recommendations for mature, adult rabbits weighing between 4-6 lbs. These are the guidelines we follow and recommend, as well. Most importantly, rabbits should receive unlimited access to good quality grass hay. These include Timothy, Orchard, Oat hay or Botanical grass. We recommend having two types of hay available for your rabbit at all times and rotate them throughout the year. Local pet stores should have these available. Oxbow is a top recommended brand. Many people ask... "Do the Timothy base pellets we feed suffice for hay?" No, they do not. Pellets are a concentrated feed source. Feeding pellets alone will over supplement your rabbit with too many nutrients that can alter and damage your rabbit's sensitive GIT and lead to a serious illness. Pellets should be limited to 1/4 to 1/2 cup of timothy based pellet per day. Also, feed 1-2 cups of fresh vegetables such as a mix of chopped up beet greens, broccoli, carrot and carrot tops, collard greens, mustard greens, parsley, and romaine lettuce. Fruit is not necessary, but can be offered only as a treat to your rabbit. This is great as a bonding time for you and your rabbit, as they really enjoy these treats. However, it is not meant to take the place of grass hay. Fruits such as 1-2 Tbsp of apple, melon, peach, plum, strawberry, blueberry, papaya, pineapple, and raspberry are good fibrous fruits to choose from. Fruits with a high sugar content such as banana and raisins should be avoided.

For more information on rabbit nutrition please check out these owner resources: (1) House Rabbit Society, [www.rabbit.org](http://www.rabbit.org) and (2) Oxbow Animal Health, [www.oxbowanimalhealth.com](http://www.oxbowanimalhealth.com).



**John Wehe, DVM**  
**DOWNTOWN GREENSBORO ANIMAL HOSPITAL**

120 W Smith Street in Greensboro  
P: 336-338-1840 | F: 336-617-5351

[www.downtowngreensboroanimalhospital.com](http://www.downtowngreensboroanimalhospital.com)

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