From a Dog's Mouth

The story starts in my mouth when I chew my food with my teeth. I use my teeth to grind up my food and mix it with my saliva. Saliva is a watery fluid that moistens my food, as well as the tissues of my mouth and comes from my salivary glands. My saliva contains amylase, an enzyme that begins the breakdown of carbohydrates. My saliva also contains an enzyme called lysozyme, which destroys bacteria. I have a little more amylase-digesting enzymes than my wolf cousins. Food traveling from the esophagus is stored in the stomach while protein-digesting enzymes (proteases) are secreted. Protein-digesting enzymes mix with hydrochloric acid to break down food, and mucus is discharged to lubricate the food and protect the stomach wall, which is largely composed of protein. Hormones and nerves, along with food quantity and composition, determine the amount of enzymes, acid, and mucus released in the stomach. The resulting milky-like, semifluid mixture is known as chyme. Strong waves in the stomach and the layering of the pyloric sphincter—a muscular ring that acts as a regulating valve—push the chyme out of the stomach. Next stop: the small intestine.

Types of food ingested, frequency of eating, and amount of water consumed determine the rate of digestion. The average dog, regardless of size, will likely digest wet food within four to six hours, dry food may take longer (eight to ten hours). Eliminating too often or too little may indicate a digestive problem.

A dog’s mouth plays a slightly smaller role in digestion than a human’s mouth, since the canines’ fanged jaws are designed to rip off large chunks of food. The tongue (the voice box in humans) is positioned lower in the throat than in animals. For humans, the lower position of the tonsils allows our linguistic capabilities (a wider range of sounds than animals) but also puts us at a greater risk for choking.

Food slides down my esophagus into my stomach. My stomach has lots of food and air is mixed with the food in a process called churning. My stomach has lots of muscles to mix the food and digest it into smaller parcels. I can absorb water in my stomach but not food. The food is then sent into my small intestine.

Food, after leaving the stomach and entering the small intestine, is mixed with digestive enzymes released by the liver and pancreas, located just outside the stomach, and the intestine itself. The liver and pancreas, located just outside the small intestine, assist by releasing digestive juices into tubes that mix with the food.

The main part of digestion begins in the small intestine. In a medium-sized dog, the small intestine “road” can be as long as 20 feet and is divided into subparts: the duodenum, the jejunum, and the ileum. (In some dogs, the “square footage” can equal a small room.) The liver and pancreas, located just outside the small intestine, assist by releasing digestive juices into tubes that mix with the food.

The remaining matter passes into the large intestine—a collaboration of the cecum, colon, and rectum. The cecum collects the undigested food matter seeping from the small intestine, absorbs water and vitamins, and houses the microscopic flora. The large intestine has the important job of collecting waste from the intestines. The remaining undigested food matter along with the bacteria that make up the intestinal flora is excreted as the forming stool along. Friendly bacteria (the billions of colon—Bacteroides the cecu- lon’s contents. Although some bacteria cause disease, many kinds of bacteria live in the body and prevent disease. A healthy balance of community of bacteria is extremely important for a dog’s digestive health. Some of these microorganisms protect dogs from disease-causing bacteria. Intestinal bacteria also provide dogs with needed nutrients, such as vitamin K (which the body itself cannot make) and B vitamins. Communities of healthy bacteria (known also as intestinal flora, beneficial bacteria, acidophilus, probiotics, and “the good guys”) manufacture B vitamins to help prevent digestive ailments and upset, as well as help the body restore and maintain health. A good diet, rich in fiber, helps off dogs with diarrhea, and muscles in the colon walls squeeze it into the colon. As water and electrolytes remain enter, the colon absorbs them. The remaining waste matter is then eliminated as waste as the intestines continue to absorb water and electrolytes.
assist digestion in the gut. Given a routine, beneficial probiotics help maintain and protect a dog’s health and build its immune system. Feeding green foods with chlorophyll also alleviates digestive-based bad-breath problems.

When treating infections, doctors sometimes prescribe antibiotics to destroy the unhealthy microorganisms. However, antibiotics cannot differentiate between the good-guy and bad-guy bacteria, thereby harming the entire intestinal bacteria population. To prevent a dangerous bacterial imbalance, dogs should be given beneficial bacteria especially during and after an antibiotic round to replace the healthy, microflora and microfauna. Oral administration in food will counter the adverse effects of the antibiotics on a dog’s intestinal flora.

Health food stores sell probiotic products in many formulations: liquid, powder, and capsule. Dogs can take the same dosage as humans, as probiotics simply reseed the intestine with the “good guys.” Plain yogurt made from a natural culture, usually found in health food stores, contains these beneficial bacteria. Supermarkets do, however, carry kefir, a drink made from fermented milk that contains multiple good bacteria. Dogs can consume anywhere from one tablespoon to the whole container, depending on owner preference, which can be easily mixed into any meal. Probiotics multiply in the gut when accompanied by prebiotics—foods that the body works continually to improve and health. Constipation is rare in dogs and diarrhea much more common, but probiotic can help with both.

A licensed doctor of veterinary medicine with over thirty years in practice and a member of the American Veterinary Medical Association, American Holistic Veterinary Medical Association, and International Veterinary Acupuncture Society, Dr. Deva Khalsa has studied homeopathy for nearly three decades. Dr. Khalsa uses her extensive knowledge and experience to encourage and empower owners in a holistic approach to pet care. In addition to publishing several books on animal care and health, Dr. Khalsa lectures internationally and contributes regularly to several animal-centered magazines. A second edition of Dr. Khalsa’s Natural Dog will be available in the spring. For more information, including online pet health videos, visit doctordeva.com.