
WE'VE EXAMINED YOUR STOOL SAMPLE...
AND IT WAS DELICIOUS

THE GUT **GARDEN**

HERE'S THE POOP ON HOW TO INTRODUCE STRAINS OF FRIENDLY BACTERIA INTO THE GUT VIA FECAL MICROBIAL TRANSPLANT.

Since beginning her holistically oriented veterinary practice over 30 years ago, Deva Khalsa VMD has been incorporating homeopathy, acupuncture, Chinese herbs, nutritional advice, and allergy elimination techniques such as Allergy Elimination and JMT into her approach. Today her work is a blend of sophisticated holistic techniques and traditional veterinary medicine designed to best enhance the natural strengths and attributes of her patient. She is available for worldwide consults by contacting her online at doctordeva.com

Mary, Mary, quite contrary, How does your garden grow?

With silver bells and cockle-shells,

And pretty maids all in a row.

Imagine a lovely English garden, resplendent with plant life. Now transfer that image to the gut, the small intestine, in fact, which is actually like a garden that nurtures and grows good bacteria and prevents the growth of pathogenic bacteria -- much like those unwanted weeds.

Areas of the small intestine are called Peyer's patches -- small masses of lymphatic tissue, similar to lymph nodes – essentially the nurturing English garden of our bodies.

The digestive tract is an important component of our dogs' immune systems. In fact, 80 percent of the immune system sits right in those Peyer's patches. This makes it easier to understand how immunity is related to intestinal health. The immune system of the intestinal tract is called GALT: gut associated lymphoid tissue. Throughout the intestinal tract there are macrophages and lymphocytes positioned immediately under the intestinal lining cells as well as deeper in the intestinal tissue along with Peyer's patches.

The gut has a bevy of assistants to keep things working just right. Have you wondered what actually grows in the Peyer's patches? If you guessed the good, beneficial gut bacteria you'd be right. The gut contains thousands of strains of bacteria. After just a single course of antibiotics the strong bacteria come back but the less hardy varieties will never return. Researchers are now learning that these more minor bacteria actually hold important functions in T cell activation.

The gut flora is the foundation of the immune system but modern lifestyles have totally changed the composition of this flora in both man and dogs. A study of primitive people, in Brazil, who have never taken antibiotics and do not consume sugar, white flour and processed foods have a very different composition of friendly flora in their gut.

There exists, within the gut, a number of components that are integral to the health of the gut and ergo, the immune system. I can imagine that the silver bells and cockle shells and the pretty maids in a row have important functions in Mary's garden. Just as the glucans, transfer factors and probiotics have incredibly important functions in the garden of the gut.

GLUCANS: GUT COMMUNICATION

The body doesn't produce glucans naturally. The only way to get the compound is from outside sources such as baker's yeast, mushrooms and cereal grains like barley, oats and rye. Decades of research show glucans have a significant role in stimulating defense reactions against infections and cancer. Special cells in the gut facilitate the transport of glucans across the intestinal wall into the Peyer's patches where they interact with macrophages to activate immune function. Macrophage interaction enhances the production, size and function of NK-cells (natural killer), T-cells and B-cells. These cells, as a matter of course, are necessary to wage war against bacteria, microbes, viruses and fungi. Glucans are polysaccharides and there are hundreds of different combinations of polysaccharide compounds. Some of these polysaccharides are effective in protecting against cancer while all of them improve the immune function of the gut.

TRANSFER FACTOR: GUT EDUCATION

Transfer factors are tiny molecules that intelligently regulate immune system activities. Transfer factors understand the dialogue of all cells. These molecules transfer immune memory and knowledge from one cell to another. They educate the immunoglobulin A, the helper T-cells and the NK cells in the Peyer's patches of the gut. As an oral dietary supplement they're derived from colostrum or chicken egg yolk.

PROBIOTICS: THE FACILITATORS

Over half of stool is made up of bacteria. These gut bacteria play a huge part in health of the body. In fact, the intestine is just an extension of the skin and each part of the digestive tract has a purpose. The gut flora is the foundation of the immune system. One might even call the gut flora the canary in the coal mine.

There are thousands of strains of bacteria in the gut so maintaining gut flora becomes a complicated and very confusing job. There are these considerations at work:

- The strains present in probiotic formulations vary widely.
- There are formulators for probiotic companies who say they cannot get them to last on the shelf in the store for more than six months.
- Many strains of bacteria such as lactose live only eight days after being seeded in the gut, while some strains, such as the bifidos, are stronger bacteria returning after antibiotic treatment.
- Then there's the question of whether probiotics (*If they are still alive* when you purchase them) actually make it to the gut.

Research indicates that anywhere from 80 to 99 percent of traditional, unprotected, live probiotic cells will be killed off by stomach acid before reaching the intestine. In order for the good bacteria to provide their beneficial effects, they must be able to survive in numbers high enough to allow them to do their jobs.

A process in which the probiotic is coated in an acidic protection, has been tested and proven to protect from the damaging effects

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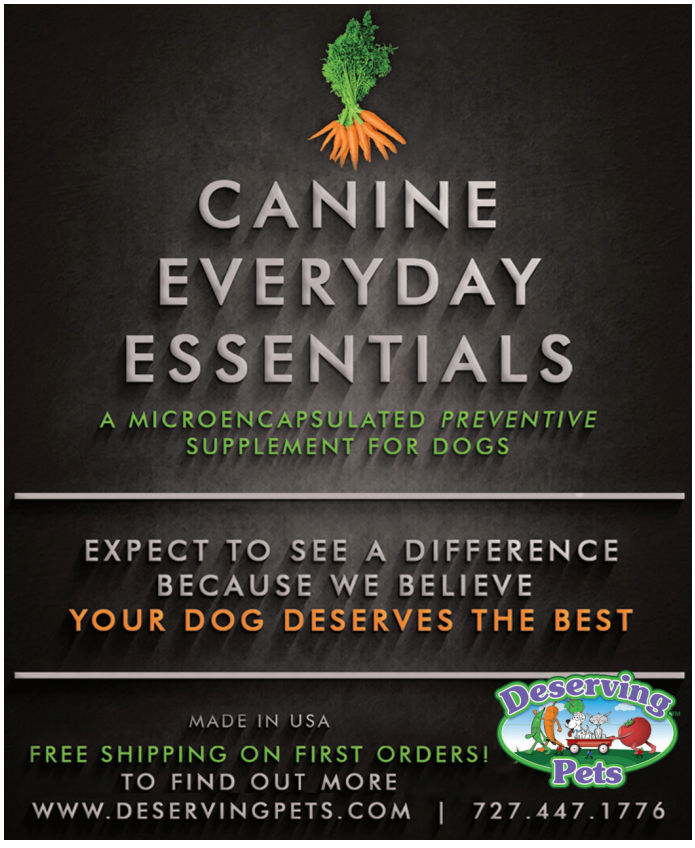
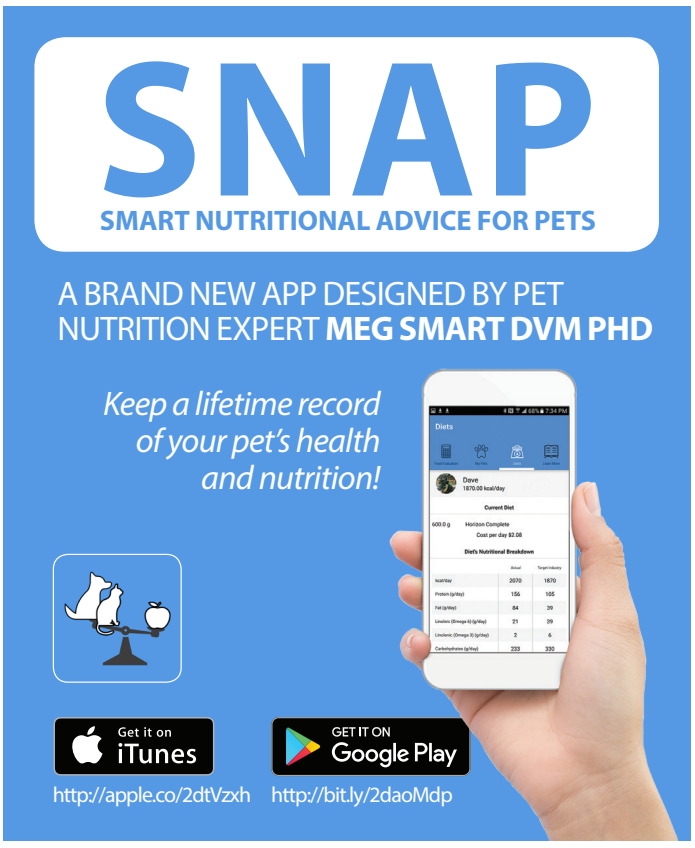
of stomach acid and bile. I know of one company that prepares their probiotics in this manner (Probonix). They are working with me to make a palatable flavored product for pets. I also interviewed Joe Ramaeker DVM, an expert on gut health and cancer. He has recently created a Stress Pack for animals that contains glucans, transfer factor and probiotics and has found it to be very helpful in cases of irritable bowel disease.

Dr Ramaeker and I agree that prebiotics are as, if not more, important than probiotics as they provide the nutrition the good bacteria need to survive and thrive. Simple green vegetables and herbs like dandelion, artichoke, garlic and asparagus are all excellent prebiotics. Pectin is also a prebiotic. "An apple a day keeps the doctor away."





Combining effective probiotics with attention to the purposes of each strain becomes a confusing, if not impossible task. One guru of human probiotic therapy said that the deeper you get into probiotics the more confused you get. I can't disagree.

FECAL MICROBIAL TRANSPLANTATION

The question is how do we get these thousands of strains of friendly bacteria back into the gut? This brings us to the next matter at hand: fecal microbial transplantation (FMT). Fourth century Chinese medical literature mentions FMT for food poisoning and severe diarrhea. The Bedouins used fresh warm camel feces as a remedy for dysentery. Not for the camels, I might add. In veterinary medicine fecal microbial transplant has been known as "transfaunation" and has long been used to treat ruminating animals, like cows and sheep, by feeding rumen contents of a healthy animal to an ill animal to colonize its GI tract with normal bacteria.

FMT is now being used in human medicine in the aftermath of chronic diarrhea following antibiotic treatments. In 2013 the FDA considered FMT (the human fecal material used for transplantation) a drug and so began to regulate it. Does this mean that we're all at risk for being arrested in airports for transporting "drugs?"

FMT in humans is usually administered through a nasogastric tube or by enema in humans. Veterinarians at the Ontario Veterinary College performed FMT in dogs and cats with chronic diarrhea that did not respond to conventional treatment. First an enema was given to patients and then the fecal microbial transplant was delivered to and retained in the colon for 45 minutes. Some veterinary facilities introduce the flora by oral capsules although direct administration at the other end of the body is preferred. One hospital advertised the cost as running from $500 to $1,500.

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I know what you might be thinking right now. I'm thinking the same thing… something like: "I know how to do this for free!" Maybe dogs have been practising this for a millennium considering their love for horse and cat poop! Oops… it has to be from the same species.

All joking aside, although the primitive people in Brazil have a potential cottage industry, research shows that gut health is an integral part of our total health, whether man or beast.