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Feed your dog's microbiome.

If you own a dog, don't only think of it as a pet.
Your dog comes with trillions of little friends … and if you neglect to treat their friends as well … your dog's health will suffer.
Your dog is made up of trillions of little cells.
These cells from your dog's bones, organs and skin and their function are controlled by your dog's genes.
But there are other residents **in your dog** … **tiny little microorganisms like bacteria, fungi, viruses.**

The bacteria in your dog outnumber their cells 10 to 1 and their genes outnumber your dog's genes by more than 100 times.
Collectively, these little communities of microbes are called the microbiome.

What is the microbiome?
Inside (and outside) your dog are complex colonies of bacteria (and

other microorganisms).
They live in your dog's ears, skin, in the mouth and in their respiratory tract … but the vast majority of these bacteria (or microbes) live in your dog's digestive system.
These bacteria find other bacteria that can support and benefit them and they form colonies to increase their chance of growth and survival.
And these little colonies support and benefit your dog as well.
In fact, the microbiome is so important to your dog's health that it's called the "forgotten organ".
The microbiome helps your dog with a number of important functions.

1. Let's look at the five main ways the microbiome supports and protects your dog:
Protection against pathogens.
The microbes in your dog's microbiome can protect your dog from viruses (like parvovirus or distemper), fungi (like yeast), harmful bacteria (like E. coli or salmonella) and other pathogens (leptospirosis or Lyme).
The friendly bacteria secrete chemicals that can kill off the harmful bacteria.
And if the friendly colonies of bacteria outnumber the pathogenic bacterial colonies, they will compete for their nutrients and attachment sites and will effectively starve them out.

2. Forms a protective barrier.
The microbiome can form a barrier against drugs, toxins, carcinogens, allergens and carcinogens (cancer-causing substances).
The little microbes can bind to them so they can't enter the body and the toxins will just be passed from the body through the feces.

3. Feeds your dog.
The microbes in your dog's microbiome are not parasites … they're not

like worms that steal nutrients from your dog, in fact, the opposite is true!
The friendly bacteria in your dog's gut microbiome produce special proteins called **enzymes** that help your dog digest and utilize its food.
If those friendly bacteria aren't around, your dog won't get the nutrition it needs from whatever you feed.
Once digested, the bacteria help transport the nutrients across the intestinal wall and into your dog's bloodstream, where they are used to build the dogs body, support cells and give energy.
The microbiome produces vitamins for your dog … especially thiamin and the B vitamins.
In fact, vitamin B12, or cobalamin … these is only made by bacteria in the digestive tract and it plays an important role in immune function.
If your dog is vitamin deficient, the cause could be the digestive system and not the diet offered.
The little microbes in the microbiome also produce short chain fatty acids by fermenting fiber in your dog's colon.
These critical fats help your dog absorb important minerals, including calcium, magnesium and iron.

4. Affects your dog's mood.
Does your dog think with his stomach?
That's a good thing!
The gut-brain axis is a communication system between your dog's microbiome and his brain.
As crazy as it sounds, the little microbes that live in your dog talk with your dog's brain through nerves and hormones.
The brain can signal the microbiome and demand more food or even control the immune system.

Scientists are just starting to look at this relationship, but it's clear that the gut-brain axis exists.

Scientists have found differences in the types of gut bacteria in animals exposed to various types of stress, such as premature maternal separation, social stress and prolonged restraint.
In humans, there are also differences in the gut bacteria in people who suffer from depression compared to those who don't.

5. Support critical part of the immune system.
By far the most important job of the microbiome is to support the immune system.
Your dog's intestinal tract is lined with a mucous membrane.
In this membrane is something called the "GALT or gut-associated lymphoid tissue?"
The GALT works very closely with the microbiome to form up to 90% of your dog's immune system.
The GALT contains special immune cells, such as lymphocytes, T and B cells, which are the main workers in the immune system.
The GALT is **so critical** that it's the largest organ in your dog's immune system.
So your dog's microbiome plays a key role - not just in their nutrition, but in their health and happiness.
Research on the microbiome is still in its infancy, but as we're learning more about this delicate organ, we're finding that many of the foods we feed our dogs, the meds we give them and the environment they live in is harming those beneficial little bugs.

Dysbiosis and its causes.
If the delicate colonies of friendly microbes are compromised, they'll no longer be able to protect your dog.
The barrier to toxins and allergens is weakened, the vitamins supplied by the microbiome will be depleted, and as will the short chain fatty acids … and the dog's immune system **will be** compromised.
And once the friendly colonies start to decline, the harmful, pathogenic bacteria that also live in your dog's gut will start to steal their nutrients

and resources … and then the balance of bacteria shifts, allowing the harmful bacteria to build large colonies and crowd out the good bacteria.

This process is called dysbiosis.
Dysbiosis is now thought to be the primary cause of many diseases and nutritional deficiencies.
A 2007 study in cats with inflammatory bowel disease found that healthy cats had a much higher bacteria count in their gut.
And a 2014 article in Cell found that people living in high-income countries have microbiomes that are less diverse and less resilient than those from third world countries.
This is significant because there are very clear differences in these two populations (and these same differences can be found in dogs in high-income countries and household too).

The causes of dysbiosis.
Parasites.
Every dog owner detest parasites and give our dogs drugs to rid them of intestinal worms.
Then know this - not only does most of these worming drugs **do** damage the microbiome – and **also interfere** with intestinal worms communicate with the microbiome.
Some studies even show that worms can rebalance the microbiome.

Processed foods.
Just like humans, dogs living in high income countries enjoy ready-made, processed foods.
And most processed foods are high in starch.
Sugar and refined starches are quickly absorbed in the digestive tract, before the microbes living there can digest them.
That means they need to find an alternate source of food and they can start munching on the cells that line your dog's intestines.

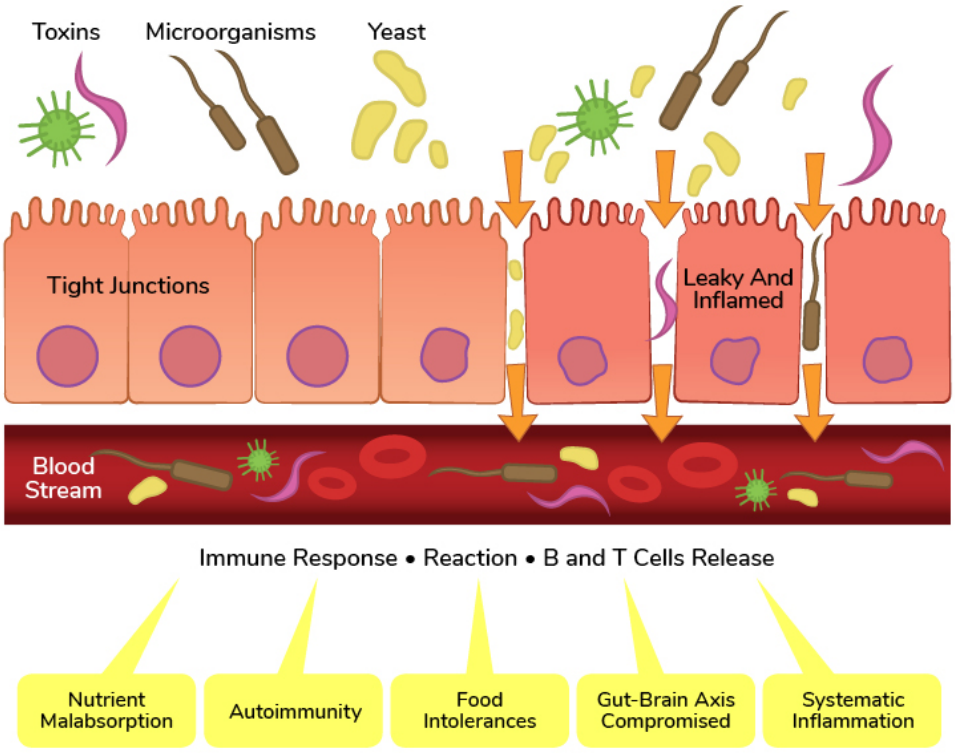
When this happens, your dog can develop leaky gut, which causes chronic inflammation in your dog.
This often shows up as allergy symptoms, yeast, joint pain and other ailments.
Know this! … Processed foods are also sterile.
The bacteria have been heated and processed out of them.
The microbes living in your dog's gut die off and need to be replaced with the diet we feed.
If the food offered is deficient in bacteria and microbes, the dog's microbiome will begin to become less populated … the colonies will start to die off without any new immigrants.

Genetically modified foods.
"Glyphosate" that's sprayed on these commercial processed foods containing genetically modified foods works by disabling something called the "Shikamate pathway" in pests.
This pathway is how they convert food to fuel so glyphosate starves them by shutting off the Shikamate pathway.
Scientists claim glyphosate is safe for humans because humans don't have the Shikamate pathway … we use different pathways to metabolize our foods.
The problem is, the microbes in the microbiome **do** have a Shikimate pathway.
So glyphosate **will** destroy your dog's microbiome as fast as anything.
Antibiotics.
Antibiotics are like carpet bombers … they destroy every little microbe within range and can essentially wipe out your dog's entire microbiome.
Not only will the pathogenic bacteria be destroyed, but all the friendly bacteria that build your dog's vitamins and construct their immune system will be destroyed too.
Know this! …most drugs and vaccines can and do also have the same impact.

Other ways to harm the microbiome, including:
Artificial flavors
Preservatives
Pasteurization
Dairy
Flea and tick meds
Vaccines
Drugs
Stress
Do any of these sound familiar?
This is why dysbiosis is probably the largest epidemic in dogs today.

What health problems can dysbiosis create?
Leaky gut syndrome.
The wall of your dog's intestines are lined with a mucous membrane.
This membrane is maintained by the microbes living in the gut.
The walls of the small intestines are very thin.
The small intestine is where nearly all food is digested and those thin walls contain a line of cells with tiny little spaces between them that allow only small, digested proteins and food particles
to pass through.

Think about the job of the immune system: its primary role is to look for and destroy foreign invaders in the body.
And if your dog … for example digest chicken for dinner and that chicken isn't properly digested before crossing the wall of the small intestine and entering the body, the immune system will literally think it's being attacked and will seek out those proteins and destroy them.
So your dog's food must be digested before it crosses the intestinal wall or it will set off inflammation and an immune response.



If the microbe population is disrupted, the intestinal wall **will be affected** in three important ways:
The mucous lining shrinks.
The mucous membrane protects your dog's gut lining from abrasions from his meals.
If the mucous layer thins, then the intestinal cells beneath them will be scratched and irritated – and eventually inflamed.
This is a problem because …Inflammation of the intestinal lining will cause the tight junctions between the intestinal cells to open up.
The intestinal cells either die off or become damaged and can no longer do their job of screening out harmful substances that shouldn't cross the intestinal walls.
This allows these harmful substances (like bacteria, viruses, fungi, undigested food and allergens) to enter the bloodstream.
Once this happens, you'll start to see signs of chronic inflammation in your dog.

The immune system will be kicked into overdrive, trying to deal with the influx of unwanted, potentially harmful substances entering the body.
Every time your dog eats, this cascade of immune hypersensitivity will follow and the cells in the body **will** start to be chronically inflamed.
Then you'll start to see the symptoms of leaky gut.

Which include:
Food allergies
sensitivities (resulting in itching, scratching, hot spots and skin irritations)
Yeast infections (dysbiosis will allow yeast in the microbiome to grow out of control and leaky gut will allow the yeast to enter the body and cause skin issues like infected ears and yeasty feet)
Inflammatory bowel disease, diarrhea, constipation
Autoimmune issues (such as cancer and allergies)
Joint conditions and pain
Thyroid disease
Liver dysfunction
Pancreatic insufficiency
Diabetes
Mood disorders
Weight gain
Low energy and slow metabolism

You may think "my dog has allergies" or **"my dog has joint pain."**

Have you ever thought your dog just has dysbiosis?
Because I hope you're starting to see that **most** dogs do!

The good news is you me and all feeder **can repair** some of this damage with better nutrition.

Here's how …
5 Ways to reverse dysbiosis.
Fortunately, you can help restore a healthy balance in your dog's microbiome … and you can do this mainly with some simple changes in diet.

Looking at the three main dietary changes you should make:
1 – Avoid pesticides, drugs and toxins (especially antibiotics).
Any of these chemicals **will** damage the delicate ecosystem living in your dog's gut.

Look for natural alternatives whenever possible because drugs and chemicals will damage the microbiome and cause more illness and disease in the long run.

2 – Feed fresh, whole foods.
Feeding real, whole foods is key!
Fresh foods come complete with all their own microbiomes and they'll help to repopulate your dog's own colonies – simple as that.

Know this! … Commercial processed foods **are not** allowed to carry any bacteria at all … the (Food and Drug Administration) has a zero tolerance against bacteria in any processed foods.
This means … all bacteria in food (good and bad) will be and must be destroyed before it can be sold.

And this includes for "most" raw foods too … many raw foods undergo a process called HPP (high pressure pasteurization).

This process exerts tons of pressure on the food and this pressure destroys any bacteria in the raw food (good and bad).

Feed your dog fresh, raw foods and this will make sure there's enough needed friendly bacteria in the diet to keep the dog's microbiome healthy and happy.

3 – Probiotics.
Probiotics are literally healthy (pro) bacteria (biotics).
Probiotics can help your dog restore their microbiome (and they're a necessity if your dog ever needs antibiotics or other drugs).

There are two ways to get friendly bacteria into your dog:
With probiotic products or with probiotic-rich fresh foods.
Know this! ...if you're looking for a probiotic product, not all of them are made the same.

Here are some tips for choosing a good quality probiotic:
Look for a product that carries more than just a few strains of bacteria. If you look on the label, you'll see a good mixture of Lactobacilli and Bifidobacteria ... these are the most important strains and you'll see them displayed as B. And L (for example, B. lactis or L. acidophilus).

Probiotics are measured in CFUs (colony forming units).
This number should be displayed on the bottle and you'll want to look for a minimum of 10 billion CFUs.
Not all of the bacteria will survive the highly acidic stomach in your dog, so the higher the CFUs, the more likely the product is to help your dog.

Look for probiotics that aren't made from dairy or other sources that can create allergy symptoms in your dog.

Dosage:
If you buy a product made for dogs, follow the dosing directions on the container.

You can also buy a human probiotic supplement.

If you do, assume the directions are for a 70kg human and adjust the dose to your dog's weight.

Probiotic-rich foods.
Fermented foods like kefir, kimchi, sauerkraut or fermented vegetables are all rich in probiotics.
You can feed your dog about a teaspoon per 10kg of body weight.
Start with small amounts and work your way up.

Prebiotics.
Adding a prebiotic will make your probiotics more effective.
Prebiotics are non-digestible food ingredients that feed the probiotics in the gut.
You can buy prebiotic supplements like inulin and fructo-oligosaccharides.
As with all human supplements, assume the dose is for a 70 kg person and adjust for your dog's weight.
You can also use whole food sources of prebiotics.
A couple of good ones for dogs are:

Raw dandelion greens:
Sprinkle on food 1 teaspoon of dried greens per 10kg of body weight per day.
Garlic: feed 1 teaspoon of chopped raw garlic per 15kg of your dog's weight per day.

I know you take great care of your dog or you wouldn't have made it this far into this article!
And I hope you see it's not only important to pick the best foods and care for your dog … you also need to be a caregiver to a few trillion of your dog's best friends too.