

Over the years we have seen many new ingredients being incorporated into Eukanuba's nutrition that help promote dogs' well-being. The fermentable fibre beet pulp was one of the first, helping to promote digestive balance. An optimal ratio of omega-6 and omega-3 fatty acids that can support skin and coat health was another. Now, the latest focus of attention of Eukanuba's is around prebiotics and the digestive health benefits they can bring.



Recently there has been an explosion in the availability of human foodstuffs containing prebiotics. Drinks, yoghurts and biscuits with prebiotics are now widely available. Many human nutritionists praise their benefits and encourage us to actively incorporate them into our daily diet. So what are prebiotics and why are they also important for dogs' health? To answer this we first have to define for both humans and dogs what a prebiotic is; this is done using three simple criteria; (1) they are a non-digestible food ingredient, this means they are not broken down by the enzymes found in the gut, (2) they selectively stimulate the growth and/or activity of good bacteria, and (3) this effect on good bacteria can benefit the host health. Typically prebiotics are simple sugars of which Fructooligosaccharide (FOS) is one example. FOS literally means it is made up of a few sugar molecules called fructose. Prebiotics are found in a variety of foodstuffs including bananas, onions, garlic, asparagus, Jerusalem artichokes and they can be extracted from sugar beet pulp as another natural source.

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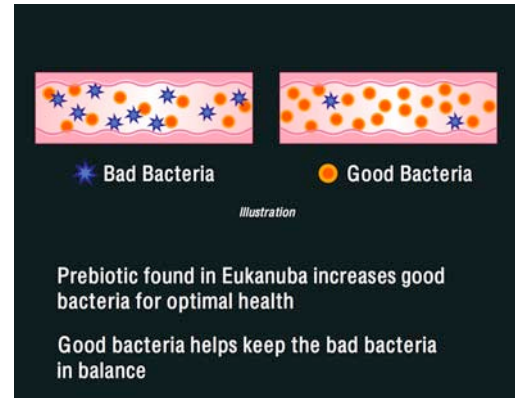


*We also need to clarify that prebiotics are different to probiotics. Probiotics are defined as live microorganisms whereas prebiotics are the food for beneficial bacteria.*

So, why do we need prebiotics? To answer this we first have to dig deeper into the dog's physiology and the gastrointestinal system (gut). Most of us think the gut is only involved in digestion, the breaking down and then the uptake of nutrients from the food we eat. However, the gut is a very complex ecosystem and there are many important roles that it plays in maintaining inner health through its function as a natural defense system.

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The first key point to consider is that part of the defensive ecosystem involves the resident bacteria that sit quite happily in the gut. In a normal healthy gut you have a predominance of good bacteria. These good bacteria (e.g. *Bifidobacteria* and *Lactobacilli*) have a beneficial role within the gut to help prevent unwanted bad bacteria (e.g. *E.Coli* and *Salmonella*) from growing and becoming resident. This is done by the good bacteria 'crowding out' and excluding the bad ones becoming resident. If bad bacteria become resident this could lead to illness and an upset of the gastrointestinal system. Having a population of good bacteria in the gut is an important defense mechanism against possible illness.



And, the second point is that the good bacteria also help to stimulate the immune system in a positive way. An amazing fact is that almost 65% of the dog's immune system is in the gut. This makes perfect sense because the gut is one of the main routes that within the body is exposed to foreign, and potentially harmful, materials. Consider that dogs possibly ingest all sorts of foreign material that they can come across day to day while out on walks. Whatever is ingested moves into the gut where the immune system waits to help eliminate it safely from the body. As this is the first line of defense, the immune system needs to be effective and by promoting good bacteria you can help maintain the effectiveness of this protection.

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So how do prebiotics work? Their benefit is because of their unique structure. The first benefit of prebiotics is that they are selectively metabolized (broken down) by certain good gut bacteria such as *Bifidobacteria* and *Lactobacilli* but importantly not by bad gut bacteria like *E.Coli* and *Salmonella*. This selective metabolism is key to the success of prebiotics. Studies in dogs have shown that you can preferentially increase the good bacteria and reduce the numbers of bad bacteria. By feeding prebiotics like FOS you can help gain the balance of good bacteria needed within the gut, and crowd out bad bacteria, therefore help promote strong defenses and inner wellness.

The second benefit of prebiotics is again through their metabolism via a process of fermentation. When good bacteria ferment they produce certain simple molecules called short chain fatty acids. These are very helpful to the gut as they are a preferential fuel for the cells that line the intestine, especially those of the large bowel. It has been claimed that around 70% of the energy needed for these cells can come from the short chain fatty acids. By feeding nutrition containing prebiotics you can literally 'feed the gut' and improve the defensive lining of the gut wall. But why is this important? Just as it is important that the bricks and mortar that form the walls of a house are kept in a good condition, so is it important to keep the individual cells that line the gut healthy in order to help keep out foreign materials that pass down into the gut every day as well as to absorb the essential nutrients needed for day to day health.

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The next time you shop take a look at all the healthy human products with prebiotics that are available for you, you may be surprised. And now, Eukanuba too offers the benefits of prebiotics to dogs. Prebiotic metabolism will help support strong natural defenses and through promoting this inner wellness Eukanuba nutrition can help improve outer health and give your dog the well-being he deserves.

**NEW**

**Did you know...**

Almost **70%** of your dog's **immune system** is found in the **digestive tract?**

Support your dog's strong **defenses** With clinically proven **Prebiotics**

clinically proven prebiotics

Eukanuba

The advertisement features a white silhouette of a dog standing on a black background, surrounded by a ring of pink dots. To the right, two bags of Eukanuba dog food are shown, one labeled 'Prebiotics'. A circular logo at the bottom left contains the text 'clinically proven prebiotics' and a small dog silhouette.