Raising A Happy, Healthy, Plant-Based Dog

THE PACK in partnership with

CONTENTS

01 THE DOG HEALTH CRISIS

02 IS IT SAFE TO FEED MY DOG A PLANT-BASED DIET?

03 WHERE DO PLANT-BASED DOGS GET THEIR PROTEIN?

04 LET'S TALK ABOUT 'NATURAL'

05 WILL I GET INTO TROUBLE WITH THE LAW?

06 FLEXI-DOGIANISM AND TRANSITIONING YOUR DOG ONTO PLANT-BASED FOOD

07 WILL MY DOG LIKE PLANT-BASED PET FOOD?

08 FIVE WAYS TO MAKE YOUR DOG HAPPY

09 YOUR DOG'S ENVIRONMENTAL PAWPRINT

A HELPING PAW FROM THE PACK

FURTHER READING

DOGGY DICTIONARY

WELCOME TO THE PAWSITIVE CHANGE COMMUNITY!

IF YOU'VE DOWNLOADED THIS EBOOK, YOU'RE CLEARLY A TOP PET PARENT.

You want to do right by your furry best friend, giving him or her the happiest, healthiest lifestyle possible. Perhaps you also want to do right by the planet, or by the other animals with whom we share it. This eBook is here to show you how you can do all three, simply by taking meat out of your dog's bowl.

Post-pandemic, we're closer to our dogs than ever before. But, at the same time, those dogs are also more vulnerable, many being given up to shelters as pet parents struggle to deal with 'bad behaviour'. Now we're back at work, many of us have less time to walk or play with our dogs, while pet insurance and veterinary costs are putting strains on already-stretched finances. Unfortunately, we need those vets more than ever: we're in the midst of a canine health crisis, more than half of dogs in the UK overweight or obese. Instances of cancer in dogs are rising at a scary rate. How do we keep our pets healthy when the quality of cheap meat-based commercial pet food is called into question, and veterinary organisations warn that feeding raw meat is a public health hazard?

On the flipside, we're also living in exciting times when it comes to our relationship with dogs. New research is being published every day that helps us better understand our pets' behaviour, health, biology and, importantly, their nutritional needs. Unfortunately, the science doesn't always filter down to the everyday pet parent. That means outdated and often harmful theories are still taken as truths, from the misconception that you need to "dominate" your dog, to the myth that domestic dogs are carnivores who **"need"** meat.

This eBook aims to make the science around dog nutrition accessible and, in the process, to debunk mythologies around plant-based versus meat-based dog diets. It explores the benefits of plant-based feeding and the science around omnivorous dogs, as well as the practicalities around vegan feeding. We're also throwing in some top tips to help your dog thrive mentally as well as physically, as well as sharing tales of just a few of the happy, healthy plant-based dogs who are already living their very best lives!

At the end of the book you'll find a list of resources to enable you to delve deeper into the topics explored or simply check out the original science for yourself.

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01 THE DOG HEALTH CRISIS

SO WHY WOULD YOU WANT TO CONSIDER A PLANT-BASED DIET FOR YOUR DOG?

Well, put simply, the way we currently feed our pets isn't working. We're deep in a canine health crisis, rates of cancer and obesity soaring among our dogs. Contrary to popular belief, so-called 'natural' diets of raw meat are only making things worse, causing our pups to pile on the pounds and putting them at risk from parasites, e-coli and even cancerous toxins. Instead, the science is showing us that a plant-based diet could be the very best thing for your dog. In April 2022, research published in a reputable scientific journal surveyed the health outcomes of more than 2,500 dogs and found that nutritionally sound plant-based diets appear healthier than conventional meat-based diets. In 2021, another study compared the nutritional soundness of 19 meat-based and 10 plant-based pet foods. Guess what? They found that plant-based diets were superior to meat-based ones.

In fact, over the last two decades, research has shown that plant-based dog food can provide your hound with a host of benefits, from improving overall vitality to fighting allergies, keeping him or her svelte, and even preventing the dreaded C-word. Let's dive in.

FIGHT WEIGHT GAIN

More than half of dogs in the UK are overweight or obese, your pup's expanding waistline putting them at risk from diabetes, arthritis, hypertension, kidney disease and cancer. Research has found that those extra kilos can reduce a dog's lifespan by up to ***two and half years.*** And what's making our dogs fat? High-meat diets, which are generally high-calorie diets. A recent report showed that over 39% of busy pet parents only walk their dog for up to 30 minutes a day, yet most dogs still wolf down at least two meat-based meals a day. Do they really need all those meaty calories? Of course not! Veggie dog food contains lower fat levels and more dietary fibre, which helps your hound maintain a healthier weight. You've probably heard of Lewis Hamilton who switched his bulldog Roscoe to a plant-based diet after his arthritis got bad, a common consequence of carrying extra pounds. On plant-based dog food, Roscoe's swollen paws healed and his joint pain eased.

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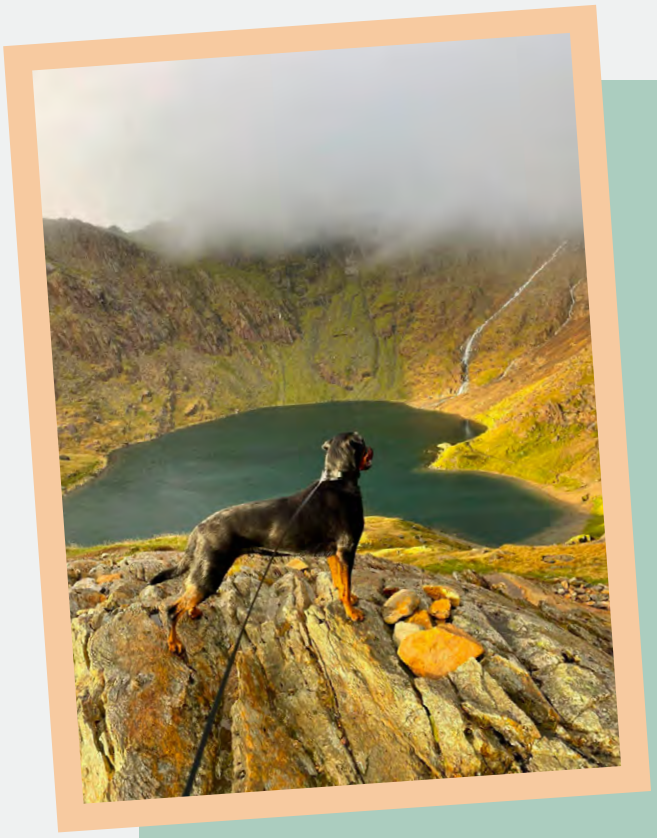
SHOW CANCER THE BACK DOOR

An estimated 1 in 4 companion dogs will develop cancer, now the leading cause of canine death. A growing number of vets are linking high cancer rates to meat-based pet foods, dogs suffering from the subtle, long-term damage of bioaccumulation. That means that chemical toxins in the environment build up (bioaccumulate) in animals as we move up the food chain. When our pets eat other animals, they gobble up the toxins that those pigs, cows, chickens and fish absorbed or ate. What's more, rancid fats, often present in commercial meat-based diets, are a leading source of free radical production in dogs. These free radicals, unstable atoms that can damage cells, have been linked to both arthritis and cancer. In 2015 the World Health Organization (WHO) warned that processed and red meat consumption is linked to cancer in humans, urging us to reduce the amount of meat we eat. Although there's less research on the animal side, certain cancers have been explicitly linked with high-meat dog foods. On the flipside, a study of 300 dogs found that no dog who had been vegan for more than five years had cancer.



KONNIE'S RESCUE ROTWEILER, LOLA IS ONE SUCH 'VEGAN' DOG.

"When I'm out and about with **Lola**, she gets so many compliments", says Konnie, "including how young, fit and healthy she looks for her age. A lot of people can't believe it when I say she's four years old." A large motivation for switching Lola to a plant-based diet was health. Konnie explains "As a Rottie mum, I've had more people than I can count on my hands tell me that they once had a Rottie, and that beloved Rottie died of cancer (turns out Rotties are prone to getting it). By keeping Lola on a diet fuelled by plants, and managing her weight, I'm drastically reducing her chances of getting cancer too." There are other benefits too. "The arthritis she has suffered with since nine months old, which used to flare up badly in the winter and hinder her movement, for example when getting up and down, or climbing stairs, is now barely noticeable compared to when she was a puppy."

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THE HEALTH BENEFITS OF PLANTS

Many owners with plant-based dogs describe their shiny coats, cleaner stronger teeth and, yes, better poop. Taking meat out of your dog's food aids digestion and could also enhance their immune system: research has shown that the longer a dog is vegan or vegetarian, the less likely they are to get infections. In that survey of 300 dogs, no dog who had been meat-free for more than five years had suffered from an ear, urinary tract, eye or any other infection.

MEET HEIDI AND DOBBY, TWO YOUNG SPANISH RESCUE DOGS LIVING THEIR BEST LIVES ON A PLANT-BASED DIET!

Meet Heidi and Dobby, two young Spanish rescue dogs living their best lives on a plant-based diet. Their pet parent, Emily, did a ton of research before adopting to make sure that a plant-based diet was a healthy choice. She has no regrets: **"IT'S DEFINITELY THE BEST DECISION WE EVER MADE WITH THEM".** Like many street dogs, Heidi and Dobby were both starving before they were rescued and as a result they have fairly sensitive stomachs. "Plant-based food is much gentler on digestion", Emily explains, "I'm a typical dog mum and am obsessed with my dog's poop! Because they were so ill before they were rescued, I'm particularly conscious of them getting the nutrition they need, and the poop is the best indicator.

Heidi and Dobby have great poops since eating plant-based food. On a slightly nicer note, their coats are incredibly soft now. When we first got them, they felt wiry and greasy!"

Pet parents have also seen their pups' skin problems clear up, unsurprising when we consider that animal products are responsible for most allergic reactions in dogs. If you look at the ingredients on medical dermatological or hypoallergenic diets for dogs, you'll often see that nutritionists have created meatless prescription foods. These might not be marketed as 'meat-free' dog food but that's precisely what they are. And for good reason: they work!

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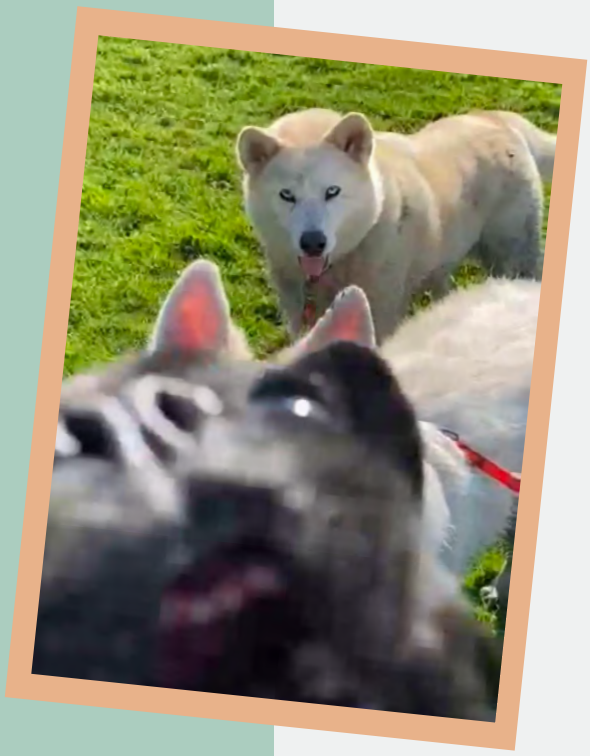
FLO THE CHIHUAHUA MIX (3.5 YEARS) AND EVE THE FRENCHIE (3.5 YEARS) ARE 80% VEGAN, THEIR HUMAN PARENTS DISCOVERING FROM RESEARCH THAT PLANTS HAVE THE SAME IMPACT ON A DOGS HEALTH AS THEY DO OURS.

Keen to reduce their risk of cancer, improve their digestion, blood pressure, fur and eyesight, they introduced more fresh fruit and veggies into Flo and Eve's diets. Both are partial to carrots and cucumbers, but Eve is also obsessed with bananas and Flo likes red cabbage too! Dog mum Maddie explains, "We sleep better knowing that both girls will be around longer because they have such a good diet." Since eating a complete plant-based pet food, Eve's vets always compliment her coat and weight. For Flo, the benefit has been more significant:



"We got Flo as a rescue two years ago. She used to yelp when she pooped and we were in and out of the vets trying to figure out why. She stayed over at the Queen Mothers Animal Hospital for investigation, but they had no idea what was causing the problem. They prescribed her specialty food that was meant to be easy for digestion, physio, pain killers, but none of it worked. Then one day Flo went to stay with our dog walker, who's plant based, and she introduced THE PACK vegan food to Flo. Within a few days she'd stopped yelping when she pooped! We haven't looked back: she's eaten it ever since and she's never had pain again when going to the toilet."

Both owner stories and scientific research suggest that if you want your pup to live his or her best life as a senior, a plant-based diet is the way to go. Just look at Bramble, a 27-year-old Collie who once held the Guinness World Record for being the oldest living dog - and ate a vegan diet!

Heidi and Dobby's mum Emily has some great advice for other pawrents who are on their plant-powered dog journey. "Research, research, research", she urges, "And I don't mean reviews and hearsay, but proper science-based information. Dog health and nutrition is a minefield as there is so much false information out there (especially when it comes to raw food), so you might have to do a bit of sifting, but **IT'S SO WORTH IT WHEN YOU CAN FEEL COMPLETELY CONFIDENT THAT YOU'RE GIVING YOUR DOG THE VERY BEST."**

The next chapters flag some more of the research that demonstrates that plant-based diets are both safe and healthy for dogs.

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02

IS IT SAFE TO FEED MY DOG A PLANT-BASED DIET?

Don't dogs have to eat meat? After all, if you look under any social media post about plant-based dog food, you're likely to see a long list of comments asserting that it's wrong to deprive 'carnivorous' dogs of the meat they need to survive. Yet domestic dogs are actually **omnivores**, just like us: they have evolved over thousands of years to digest the starches in plant-based foods and receive all the nutrients they need without meat. How?

We have a good understanding about canine evolution based on their **'mitochondrial DNA' (mtDNA),** the genetic material passed from mother to puppy. Using this canine mtDNA, we know that dogs began to evolve from grey wolves between 15,000 and 40,000 years ago when they started teaming up with humans, offering protection in return for food scraps. Over many thousands of years, dogs and humans continued to collaborate and began to develop similarities in their energy requirements and diet. We can see immediately how domestic dogs look different to wolves, but that's not the only transformation: their internal biology is different too.

Researchers have found specific genetic 'mutations' that allow dogs to digest and use starches found in plants within their bodies much more efficiently than wolves. Compared with wolves, dogs have more copies of a gene called **AMY2B** which allows the production of amylase, an enzyme that digests starch. In dogs, amylase activity is around 30 times higher than in wolves. Dogs also have a longer version of the amylase gene that makes maltase, another enzyme needed for starch digestion.

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This maltase gene is found in herbivores and omnivores. These new genetic traits allowed early dogs to thrive on a diet rich in plant-based starch, very different to the diet of wild wolves. In a nutshell, it means that modern dogs are no longer strict carnivores: they have important genetic mutations that have adapted them to an omnivorous diet.

That's why pet parent Kayleigh is confident in feeding her beloved rescue dog Gili, 7 years old, a fully plant-based diet. Kayleigh and her partner are both vegan and didn't want Gili to contribute to the suffering of other animals when she didn't have to. Despite being "a fussy little so and so", Gili loves her plant-based pet food and enjoys banana and kale as an extra treat! **"SHE'S DEFINITELY THRIVING ON A PLANT-BASED DIET,"** Kayleigh says, "and the vet is always happy with her condition and how she's doing."

To other vegan dog parents considering plant-based feeding, Kayleigh says "Don't be scared to take the plunge. There are so many people out there who will tell you it's wrong and that dogs should eat meat all the time but that's not true. Dogs thrive on a plant based diet. Not only that, it's better for the planet and stops the suffering of so many innocent animals. What's not to love?"

THE NEXT CHAPTERS TAKE A DEEP DIVE INTO OTHER WAYS THAT FEEDING A PLANT-BASED DIET IS COMPLETELY SAFE AND EXTREMELY HEALTHY FOR YOUR HOUND.

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03

WHERE DO PLANT-BASED DOGS GET THEIR PROTEIN?

If you're vegan, you're probably all too familiar with the question "But where do you get your protein?" It will come as no surprise that plant-based dogs are often subjected to the same cross-examination. In fact, because of the common misconception that dogs are 'obligate carnivores', the idea of a plant-based pup is even harder to stomach. So what's the deal with dogs and protein?

According to current nutritional guidelines for dogs in Europe, the minimum amount of protein required for canine growth is 18% of daily food consumption. These proteins are only useful for the dog if they can be digested and absorbed within his or her body: your dog's food must contain **'bioavailable'** nutrients. That means that the most important thing is for those proteins to contain all the amino acids and nutrients that the dog needs. Protein molecules are molecular 'strings' made up of **20 common amino acids.** When dogs eat protein, their digestive system breaks down these strings into their amino acid building blocks, which are then used by your dog's body to make lots of different proteins: the ones needed at any particular moment to build muscle, produce hormones or fight infection.

If their diet contains enough of these amino acid building blocks, dogs can make half of the 20 amino acids on their own (including Taurine, which cannot be made by obligate carnivores). However, there are **10 amino acids** that they can't create, which means they must be eaten. These are: **Arginine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan and Valine**. A dog food must contain all of them in adequate levels to meet the official nutritional standards which allow the food to be labelled 'Complete'.

Is it just meat products that contain these 10 essential amino acids? Of course not. **High-quality plant protein sources, just like you find in complete vegan dog food, can also contain all ten**. Dogs can access all the nutritious proteins they need by going directly to the source: plants and organic compounds. After all, that's where the cows, pigs, and chickens that we've traditionally fed to our dogs get their protein!

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Today, you can get a huge variety of complete plant-based dog foods as well as vegan treats and chews. Here you can see just a selection of the animal-free foods that **Scampy**, a 3-year-old Romanian rescue dog, enjoys. His pet parents Alice and Pete also add in 'human' foods like blueberries, quinoa, nutritional yeast, bananas, peanut butter, raw carrots*, courgette and, his absolute favourite, butternut squash!

*NO CARROTS WERE HARMED BY SCAMPY IN THE POSING OF THE PHOTO BELOW...

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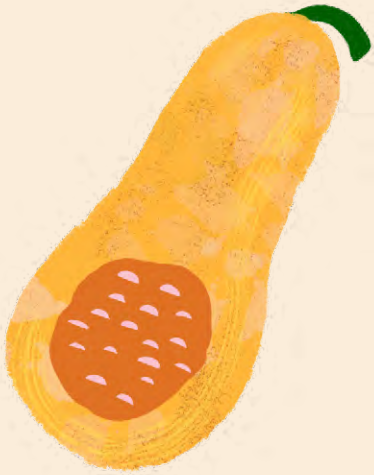
04

LET'S TALK ABOUT 'NATURAL'



One of the biggest myths of modern pet food marketing is that we need to be feeding our four-legged friends the **natural** diet of a miniature wolf. Phrases like 'Feed your dog's inner wolf!' and words like 'ancestral', 'biologically appropriate' and 'raw' persuade us that our Spaniels and French Bulldogs share the basic needs of fierce wild canids and need the same diet of meaty animal carcasses. But how true is this really?

Out in the wild, dogs (like their ancestors, grey wolves) would cover long distances in pursuit of prey and defending their pack from predators. These dogs would spend most of their day burning up calories by hunting down small mammals to eat, thus needing fatty, protein-dense meals of raw animal meat to refuel. This scenario bears little resemblance to how our relatively lazy domestic dogs receive their food. We saw that more than 39% of dogs only get up to half an hour's daily walk. Yet these dogs still receive at least two meals a day, placed at their paws without any physical effort. Our Cavapoos and Collies don't need all those meaty calories because they're not living the naturally active lives of wolves. In fact, as we saw earlier, all this meat is making them fat.

Aspiring to live a 'natural' life is a strange concept for a domestic dog. After all, no responsible pet parent would leave their dog out in the local woods and expect him or her to fend for themselves. Our dogs live comfortably in our warm houses, they have vaccinations and worming tablets, they're walked on leads when close to busy traffic. None of these things are 'natural' but they all keep our pets happy and safe. Similarly, feeding a dog plants might not seem natural, but it's the best thing we can do for them - along with all those other "unnatural" things!

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HERE'S "FIERCE WOLF" GILI OUT IN THE WILD WITH HER PET PARENT...

And as an aside - in the actual wilderness, a dog wouldn't be eating cows and pigs. A truly 'natural' diet would be rats, mice, and garbage but, oddly enough, those aren't the ingredients many of us want to feed our beloved fur children.

Our dogs no longer have to hunt for their food: the responsibility has shifted to us, their human companions, to provide them with healthy, balanced meals. If those meals can be nutritionally fulfilling, tasty, and also benefit the planet and other creatures, why should they have to contain meat or animal products?

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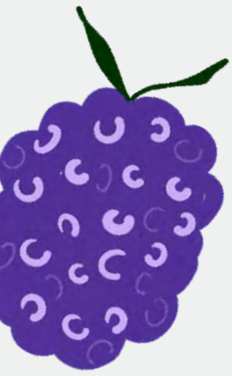
05 WILL I GET INTO TROUBLE WITH THE LAW?



In 2021, misinformed suggestions were made that pet parents could be in breach of the Animal Welfare Act 2006 by feeding a vegan diet. This is simply not true: the Animal Welfare Act states that owners must feed a "suitable diet" meeting their dog's nutritional needs, a law that applies to meat-based dog food too. Pet food simply needs to be 'nutritionally complete': **absolutely nowhere are vegan or vegetarian diets mentioned as unsuitable.** In fact, to suggest that dogs, who are omnivores not obligate carnivores, need meat to be healthy is unscientific. As veterinarian and animal welfare expert Professor Andrew Knight puts it, "The claim that animals on vegan diets will necessarily become ill, and it's somehow cruel to maintain them, is contrary to the scientific evidence in this field and is ignorant."

Indeed, Professor Knight's research shows that dogs have as good - or better - health outcomes on plant-based diets as they do when fed on meat pet foods, provided these are carefully formulated with the right nutrients.

So why are some veterinarians making statements against feeding plant-based diets? Well, when our dogs miss out on important vitamins and nutrients, they get sick and we take them to the vet. Some pet parents, with the best intentions, want to make their own homemade dog food. Problem is, it's really tricky to balance all the micro-minerals and essential vitamins our dogs need when we're making their food from scratch. It's no wonder that some vets are still nervous about recommending plant-based diets when they only see dogs who haven't been eating the right things! When we feed our dogs a commercial 'complete' plant-based dog food, we can be certain that they're getting a diet that meets their nutritional needs.

The fact is, there's no medical reason a dog shouldn't thrive without meat so long as they're getting all the right nutrients in their plant-based dog food. A 'complete' label on their food makes sure of that and means that you will be meeting, even exceeding, all of their welfare needs. Hopefully, as an increasing number of studies are published supporting the safety and benefits of plant-based dog food, this kind of 'fake news' will become a thing of the past. In fact, the president of the British Veterinary Association (BVA) recently publicly stated "We are really open to exploring how this evidence base could support vegan diets as a more sustainable option and plan to review this in depth in due course." The tide is turning for vegan dog diets!

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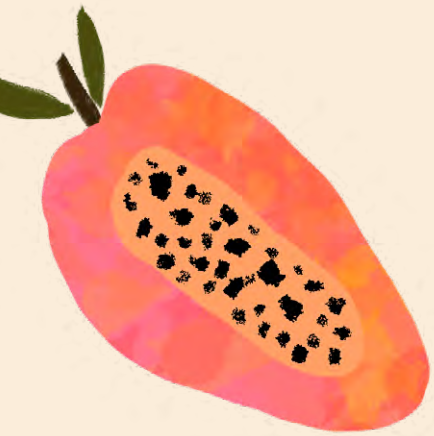
06

FLEXI-DOGIANISM AND TRANSITIONING YOUR DOG ONTO PLANT-BASED FOOD



So you've researched the benefits of plant-based dog diets, you've heard from other dog parents whose pets love their meatless meals, and you've sourced some promising nutritionally complete plant-based dog foods to try. But we get it - changing what you and your dog are used to is scary!

Even if you're raring to get your pet started on meat-free food, it's actually a bad idea to make a dramatic switch. Just like in humans, sudden changes in diet can lead to stomach upsets, so **try transitioning your dog slowly.** This handy guide suggests beginning with 25% plant-based food and 75% animal meat, then gradually increasing the percentage of the plant-based portion over at least 10 days. Or before you change his or her main meal, start by rewarding your dog with vegan treats instead of meaty bites. You can buy delicious plant-based treats from independent companies or even large pet food brands – or you can simply feed basic veggies like carrot sticks or cubes of sweet potato.

Of course, if you want your pup to remain a flexi-dogian, that's totally fine - maybe you still want to feed human-grade or raw meat at weekends. Or you just want to do Meat Free Monday (or as we like to say, Meat Free Muttday!) with your dog. Maybe you feed plant-based kibble but throw your dog a meaty bone as a treat. Or you keep the salmon dog food and swap out chicken chews for raw carrots, beef biscuits for butternut squash.

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CHEWIE, A THREE-YEAR-OLD RESCUE MINI POODLE IS ONE SUCH HAPPY FLEXI-DOGIAN!

His guardian Gaby tries to eat plant-based food as much as possible and, “As dogs are omnivores, I wanted to try to do the same for Chewie”, she explains. Chewie’s favourite snack is a raw carrot and he has a real soft spot for THE PACK’s plant-based No Moo Ragu...

So long as you make sure that your dog’s main meal is ‘complete’ i.e., providing all the nutrients they need, whether it be meat- or plant-based, all these options are great. Because even small reductions in your dog’s meat consumption will make a big difference: for the planet, for other animals and for your dog’s health. So much of modern-day pet food is meat when it doesn’t have to be, meaning that dog food is part of the problem. Yet it can also become part of the solution, one bowl at a time.

Proving you’re never too old to make a change, meet 10-year-old **Harris** and 12-year-old **Bracken**, both miniature wirehaired dachshunds. These old-timers are both flexi-dogian, eating fish kibble combined with plant-based wet food. All their treats and chews are plant-based, the shift away from meat feeding coming naturally to vegan pet parent Fiona: “Harris and Bracken have had vegetables in their diet – and fruit, in Bracken’s case – for years, so shifting to more plant-based food was a natural extension of that.” Harris adores carrots, broccoli, green beans, and peas – raw and cooked – while Bracken also goes wild for bananas, pears, and blueberries!

Fiona describes how new plant-based food from THE PACK was a game-changer in their household: “They absolutely loved it. Straight away, from day one, first can, first bowl. Now I can’t open a can without a whole lot of dancing around the kitchen and lots of shouting (Harris and Bracken that is, not me!) as this is quite clearly the tastiest wet food they’ve had. Harris can be picky; if he’s not feeling it, he’ll walk away from his bowl. He doesn’t do that when there’s some THE PACK food in there! The taste test was such a winner and the lads have been scoffing it since.” She’s hoping that combining their kibble with a lower fat and lower protein wet plant-based food will make it easier to manage their weight, something that’s become more challenging with age.

“I’ve had people say to me, “Oh my dog wouldn’t eat vegetables...” and I always say, just give it a try”, Fiona says. “Before Bracken came to live with us five years ago, he was a strictly roast chicken, boiled eggs, and cheese kinda guy (with terrible skin problems and a toxic digestive tract!) Now he’s going crazy for carrots and all things veg. It can take a minute for that adjustment to work and for taste buds to adjust, so start off gradually.”

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07

WILL MY DOG LIKE PLANT-BASED PET FOOD?

MANY PET PARENTS WORRY THAT THEIR DOG LOVES MEAT AND HE OR SHE WILL BE SAD OR DEPRIVED WITHOUT IT. BUT IS YOUR DOG REALLY LESS HAPPY EATING PLANT-BASED FOOD?

Not according to science. A recent article surveyed 2,308 owners to find out how their dogs behaved towards their food: were their tails wagging as much? Did they dash up to their bowl? Were they barking with excitement? How fast did they eat? Taking all these things into account, the researchers found “no consistent evidence of a difference between vegan diets and either conventional or raw meat diets”.

Pet parent Emily certainly agrees! **“If you grate a carrot, no matter where Heidi is in the house she’ll hear it and come running for some. Dobby is more of a fruit gal. She enjoys apples and loves bananas.”** Her rescue dogs love their plant-based food from THE PACK, screaming at her to hurry up and open the can. “I can tell they get excited for THE PACK more than any other wet food I've given them. They even have to lick the spoon when I've finished serving them!”

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You see, dogs don't crave specific foods such as chicken or beef: they crave the nutrients within them. If we can deliver those nutrients without animal meat, our dogs should love their new plant-based food just as much as their old diet. Plant-based dog food is now tastier and more satiating than ever, offering a much-needed variety of flavours and textures beyond bland, meat-based kibble. After all, the images of juicy beef, fresh pink salmon or tender chicken breasts on pet food packages generally have very little to do with the hard, brown kibbles or greyish mush inside the can.

How can we insist that 'dogs crave real meat' when we're feeding them animals that have been cooked and processed far beyond recognition? Why would our pets even want to eat this bland food? Well, many pet food manufacturers add a 'secret sauce': animal fat sprayed onto the food, or meat by-products treated with heat, enzymes and acids to form concentrated meat flavours. These flavourings taste really good to pets but that doesn't mean that they're healthy or nutritious. After all, humans have also developed tastes for unhealthy, fatty, sugary foods but that's not to say we should be eating them every day.

Of course, taste preference is unique to the individual: it's unlikely that the humans you know enjoy all the same foods, so why should the dogs?

In pet parent Fiona's pack, her dog **Harris** won't eat fruit ("He looks slightly insulted by the idea") but her other dog **Bracken** loves it. "As with humans, this isn't a 'one size fits all' approach as we all have different tastes; it's about trying different things," Fiona explains.

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We'd all get pretty bored eating the same food for every meal, day in, day out!

The range of plant-based options available online mean that you can feed your dog a variety of different flavours and textures, finding those they like best and mixing up mealtimes to keep it interesting.

Pet Nutritionist Emma Passman and **veterinarian Rory Cowlam** wholeheartedly support this approach to dog feeding. Emma says "I always try to recommend feeding a varied diet where possible, barring certain illness and dietary intolerances." She explains that "a vegan diet containing a blend of vegetables and fruits, supplemented with vitamins and minerals can contribute to that variety to help ensure a dog gets all the nutrients they need." Rory agrees, saying that "Pet parents can rest assured that including these plant-based meals in their dog's diet will offer nourishing variety that will help promote a good gut microbiome."

Flo and Eve's mum Maddie is all for mixing it up. "Keep an open mind, and don't be afraid to explore and experiment with what your dog likes", she says. "I think historically we've been made to fear changing up their diet, or told that dogs need meat. But in my experience, none of this has been true. The girls love trying new things; it's exciting for them and actually helps their confidence. New textures, new smells, changing how and where they eat, sometimes a bowl, or their lickmat, or in a chew toy. But also, understanding that a dog's digestive system isn't too different to ours, and they benefit a lot from plant-based products. Start small: we used to just use carrots, cucumber and berries as treats, and then we started substituting bits of their meal with fresh veggies and lentils, hemp oils and peanut butter. Now we feel really confident and it's wonderful to see both the girls really flourish!"

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FIVE WAYS TO MAKE YOUR DOG HAPPY

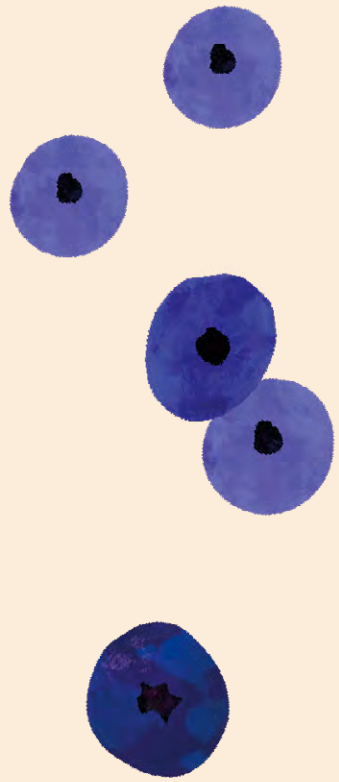
08

Talking of happy plant-based dogs, we know that there's more to life than micro-minerals and amino acids. Whether romping with their mates at the park or gobbling down a delicious dinner, there are so many ways our dogs can live life to the max. Here are just five things you can do to help make that happen.

ONE

LEARN YOUR DOG'S LANGUAGE

A waggy tail can mean "I'm excited in a good way!" but it can also mean "I'm feeling threatened, and I want out". We all wish our pups could talk to us but in many ways they already can: we just need to listen. Our dogs are giving us signals to read all the time, through body language, behaviour, or even woofs and growls. For instance, did you know that your dogs don't just yawn when they're tired? Yawning can be a sign of stress, excitement, or even be a non-threatening 'calming signal' when meeting new fur friends. Some great resources to help you get to know doggy lingo are listed at the end of this book.



TWO

TAKE YOUR DOG ON A SNIFFARI.

It can be frustrating when your pup wants to stop to sniff everything and you just want to hurry up and walk! Yet building regular 'sniffari' walks into your schedule could be fantastic for you and your dog. Depending on their breed, a dog's sense of smell is around 10,000 - 100,000 times better than our own, our furry friends possessing up to 300 million olfactory receptors compared to about six million in hooman noses. What's more, the part of their brains that analyses and processes scents is 40 times greater than ours! All this means that stopping to smell the roses is a hugely important part of your dog's walk, allowing them to exchange 'peemails' with other dogs, understand the nuances of the world around them, and be mentally stimulated.

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Fiona explains that when it comes to living their best lives, **Harris** and **Bracken** love time spent outdoors, particularly on coastal walks: “We’re really fortunate to live in an area that has the most amazing stretch of coastline with a number of long sandy beaches and rocky shores, as well as coastal woodland walks. If we time our walks carefully, these places can be very quiet and the lads are off-lead the whole time. Watching Harris and Bracken sniffing along woodland paths or running along the beach together, or following their Dad along the narrow paths that wind through the sand dunes - that’s when I see them as their truest selves: wee adventurers, searching for new sniffs. As hounds, they understand the natural world through scent in a way that we can’t even begin to imagine as humans. It must be incredible. And seeing that, seeing this world through their eyes, just makes me want to spend even more time outdoors together.”

THREE

KEEP YOUR HOUND HEALTHY

While all dogs get sick occasionally, there are ways that we can give our pups a fighting chance at staying healthy and happy. Keep them up to date with their vaccinations and flea, tick and worming treatments, and take them to the vet for regular check-ups. Make sure their joints and bones stay supple and strong by making your home dog-friendly, with plenty of non-slip surfaces and comfortable sleeping areas. Choose a harness that doesn’t choke your dog or restrict their movements. Give them regular exercise to strengthen their muscles, and limit calorific treats to prevent obesity. Keep toxic human foods like chocolate, raisons, grapes or garlic bread out of reach of drooling mouths. And, last but not least, feed them a complete diet packed with pulses, vegetables and superfoods.

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FOUR
MAKE MEALTIMES FUN

For most of our furry friends, dinner time is the highlight of the day. But it also lasts less than two minutes for the majority of dogs, who wolf down their food without really tasting it.here are plenty of fun ways to mix up mealtimes, prolonging the experience and making it extra special for your pup. Why not scatter kibble in your garden or the park, encouraging your dog to forage? Or use a puzzle toy with wet or dry food to give them a challenge, stimulating their brains as well as their taste buds. Snuffle mats are also a great way to get your pup using that impressive nose, and lick mats will slow down their consumption of wet meals, helping them really savour the taste!

Fiona, pet parent to flexi-dogians Harris and Bracken, has learned that textures are all-important when enriching feeding time. She shreds carrots in a mixer, and freezes mashed banana and doggy peanut butter in a Kong. Her advice is to "try to introduce vegetable and fruit options in different ways, which might mean that some things are raw while others are cooked and others frozen – until you find the things that your dog loves!" **Scampy**'s mum Alice agrees: "We freeze vegan wet food in ice cube trays and add chunks of raw carrot. He literally drools when I open the freezer door!"

FIVE
EIGHT PAWS ARE BETTER THAN FOUR

There's nothing that gets a dog's tail wagging like a romp with their best pals, and a good social life is one of the easiest ways to make your pup happy. Dogs love to play and they have clear rules and boundaries they abide by to make sure nobody gets hurt. By socialising your pup early, you can make sure they understand the canine code and develop healthy friendships with other dogs. Of course, your hound might be more of a people person, preferring the company of his or her human pack, and that's great too! Either way, try not to leave your dog alone for long periods of time, as this can be stressful for them, not to mention boring.

PLANT-POWERED GILI OUT ON AN ADVENTURE!

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09

YOUR DOG'S ENVIRONMENTAL PAWPRINT

It's a common assumption that dogs just eat 'by-products' – the rubbish bits of meat that humans don't want – but today, more and more of us want to feed our dogs premium 'human grade' or raw meat diets.

That means cows, pigs, chickens and other animals are being bred and killed specifically for dog food. In 2020, ground-breaking research from the University of Edinburgh showed that the pet food industry produces almost 3% of the total carbon dioxide (CO_2) emissions from farming.

Maybe that doesn't sound like much, but it's the same amount of CO_2 produced by a sixth of global flights. In fact, feeding dogs and cats in America alone has been calculated to be as environmentally damaging as pumping the exhaust of nearly 14 million cars into the atmosphere for a year. If we keep feeding meat to our pets, how will we reduce emissions enough to slow climate change?

That's just greenhouse gases. There are also environmental impacts from the additional land, water, fossil fuels, phosphates and biocides needed to feed and farm the animals that go into our pup's gourmet human-grade meaty chunks. The Edinburgh research tells us that making meat-based food for cats and dogs uses up a land mass twice the size of the UK, every year. All this means that the environmental pawprint of a 70-pound golden retriever eating a raw meat diet is almost twice that of an average meat-eating human. After all, unlike humans, most dogs eat meat at least twice a day, every day.

Many pet parents assume salmon or other seafood is a healthier and more sustainable choice for dogs. But what about the toxic chemicals seeping into the ocean from fish farms, or the antibiotics and hormones used to grow farmed fish? Then there's the impact of feeding fish caught in the wild: don't forget that it takes many more fish than cows to feed the average dog. Demand from pet food companies is starving wild ocean animals of their dinner and disrupting ecosystems.

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The more fish we feed to our dogs, the closer we inch towards fishless oceans. Most disturbingly, in 2022 a chilling study revealed that some brands of fish-based pet food in Singapore contained endangered shark species, listed vaguely as "ocean fish." Roughly a third of the 144 pet food samples tested contained shark DNA, including species listed as vulnerable on the IUCN Red List.

Even though many of us are worried about the future of our planet, wildlife and climate, most of us are still feeding our pets meat, day in, day out. But it doesn't have to be this way.

Plant-sourced alternatives to meat need far fewer natural resources and create lower greenhouse gas emissions. A third of all calories in the crops we grow are fed to animals we farm, with only 12% of those calories being 'recycled' by humans when we eat meat, eggs and dairy. That's an enormous waste. Put it this way: if we stop growing plants to feed farm animals and instead grow pulses, fruits and vegetables for humans and pets, we could feed an extra 350 million people (and a whole lot of dogs too!)

If we want to feed our dogs sustainable pet food, that food needs to be as low as possible on the food chain. Going straight to the calorie source – plants – reduces environmental damages at the same time as improving health. According to the calculations of animal nutritionists, if you're already vegan and you switch your 70-pound retriever to a plant-based diet, together you could save, every day, 2,200 gallons of water, about 60 square feet of rainforest, about 90 pounds of grain and two farmed animals' lives.

Pet parent **Erika** feeds her dogs **Abba**, 11 years old, and Rocky, 1 year old, a primarily plant-based diet because "it's a much better choice for the planet and the environment." Her flexitarian Frenchies eat plant- and insect-based dog food, Abba since she was five and Rocky since Erika adopted him at 4 months old. Both adore bananas!

BY FEEDING YOUR DOG PLANTS INSTEAD OF MEAT, YOU CAN LITERALLY HELP SAVE THE WORLD.

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A HELPING PAW FROM THE PACK

Hey there! We are Judy & Damien, co-founders of THE PACK, and pet parents to Blossom.

Over the last 7 years, we have been at the heart of the plant- based movement in the UK. It has been a truly game-changing few years, but what struck us was how little innovation there has been in the pet food space. We founded THE PACK on the belief that there's a better option out there for our furry friends. An option that's not only better for our dog's health, but better for our planet and for all the animals who call it home.

We have created meals that are for all dogs - so the plant powered pups and what we like to call flexi-dogians. Put simply, our mission is to get more plants into every dog bowl. We have built a community for pet parents where you can share experiences or worries, free from judgement.

We hope you've enjoyed this eBook and feel equipped with all the information you need to raise a healthy, happy, plant-based dog. Big thanks to Plant Based News for collaborating on this eBook with us and to Alice Oven for writing this book with us.

Together, we can disrupt the harmful meat-based dog food industry and help other pet parents discover a healthier, kinder way to feed their pups.

WELCOME TO THE PACK!

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IF YOU OR YOUR DOG HAS A QUESTION FOR US,

or you'd just like more information about our product, drop us an email at woof@thepackpet.com (we promise we don't bite).

As a thank you for downloading our eBook you can save 30% off your first order with us at THE PACK by simply entering

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THE PACK

Raising A Happy, Healthy, Plant-Based Dog

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With thanks to Plant Based News.

Dedicated to all the dogs who are doing things differently and making the world a better & fluffier place including our team dogs Blossom, Pablo, Aldara & Scampy.

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AUTHOR BIO
for Raising A Happy, Healthy, Plant-Based Dog

Damien Clarkson & Judy Nadel

Damien Clarkson and Judy Nadel are creative entrepreneurs who reside in South East London with their dog Blossom. Previously they created the leading plant-based investment marketplace and community Vevolution. They created plant-based pet food brand THE PACK because they wanted to provide pet parents with healthy and tasty plant-based options for dogs and play their part in tackling the climate crisis in doing so. They are optimists and enjoy reading, music and walking with their dog Blossom.

Adam Wakefield

Adam Wakefield is Marketing & Communication Manager at THE PACK and parent of his fur child Pablo. After 12 years of working for multinational retailers, Adam was inspired to move away from working with large corporations and join THE PACK to help tackle the climate crisis and animal companion health crisis. As an animal lover, vegan and dog dad it is a pawfect match.

Alice Oven

Alice Oven is co-author of 'The Clean Pet Food Revolution: How Better Pet Food Will Change The World', a book exploring the problems associated with conventional animal meat in pet food and advocating kinder, safer alternatives. She also blogs about animal ethics at www.aliceanimalwelfare.com. Day to day, Alice works at academic publishers Taylor & Francis, commissioning Life Science and Veterinary books and recently graduated from the University of Winchester's MSc in Animal Welfare Science, Ethics and Law where she researched pet owner attitudes to feeding alternatives to traditional animal meat.

FURTHER READING

HEALTH AND SAFETY OF PLANT-BASED DOG FOOD

The latest study showing that, based on the health outcomes of more than 2,500 dogs, nutritionally sound (i.e., labelled 'complete') **vegan diets may be healthier and less hazardous than conventional or raw meat-based diets.** Knight *et al* (2022) 'Vegan versus meat-based dog food: Guardian-reported indicators of health' in *PLOS ONE* journal.

A paper on the superior nutritional value of 'vegan' pet food. Knight & Light (2021) 'The Nutritional Soundness of Meat-based and Plant-based Pet Foods' in Revista Electronica De Veterinaria journal.

A summary of the evidence supporting vegetarian over meat-based diets for pets. Knight & Leitsberger (2016) 'Vegetarian versus Meat-Based Diets for Companion Animals' in Animals journal.

A ton of research-backed info on nasties in meat-based pet food, environmental problems and the impact on other animals in The Clean Pet Food Revolution by Ernie Ward, Alice Oven & Ryan Bethencourt (2020).

An article **on how dogs evolved to digest starches.** Axelsson et al (2013) 'The genomic signature of dog domestication reveals adaptation to a starch-rich diet' in Nature journal.

Another article, **showing the high levels of Amylase activity in dogs**. Arendt et al (2014) 'Amylase activity is associated with AMY2B copy numbers in dogs: implications for dog domestication, diet and diabetes' in Animal Genetics journal.

Veterinarian Andrew Knight's website https://sustainablepetfood.info is packed with evidence showing that plant-based diets are the healthiest food for dogs. He also includes a list of articles showing the problems with meat-based pet food and the results of the **study of 300 veggie dogs (PETA, 1994).**

The latest PDSA PAWS Report on **lack of exercise and obesity in dogs** and how the **COVID-19 pandemic** has affected pet wellbeing (2021)

The PFMA White Paper on obesity in dogs **in the UK** (2019)

A 2018 Fortune article on the increase in pet food recalls.

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PROBLEM WITH RAW MEAT FEEDING

On concerns around feeding raw meat diets to dogs in *Journal of the American Veterinary Medical Association* (2001)

An FDA study showing that raw pet food is more likely to be contaminated with disease-causing bacteria than other types of pet food (2018).

The nasties in raw meat-based diets for cats and dogs in *Veterinary Record* (2018).

Risks to the wider household when feeding raw meat diets to dogs are reviewed in O*ne Health journal* (2021)

A paper warning that "the trend for feeding dogs raw food may be fuelling the spread of antibiotic-resistant bacteria" in *International Journal of Food Microbiology* (2021).

Parasite risks from raw meat-based diets for pets in *Companion Animal* (2020)

MAKING YOUR DOG HAPPY!

A recent article on the **tastiness of vegan pet food.** Knight & Satchell (2021) 'Vegan versus meat-based pet foods: Owner-reported palatability behaviours and implications for canine and feline welfare' in *PLOS ONE* journal.

Marc Bekoff's book *Canine Confidential: Why Dogs Do What They Do* opens up the world of dog behaviour to help us understand how we can make our dogs' lives better.

Zazie Todd's *Wag: The Science of Making your Dog Happy* is the bible for enhancing your dog's life.

Lili Chin's *Doggie Language* is a small but mighty illustrated book to help you see and understand the subtle visual cues used by your dog to express how they're feeling.

ENVIRONMENTAL IMPACTS OF MEAT-BASED PET FOOD

Gregory Okin's game-changing paper. Okin (2017) 'Environmental impacts of food consumption by dogs and cats' in PLOS ONE journal

The recent Edinburgh paper on the environmental paw print of pet food. Alexander et al (2020) 'The global environmental paw print of pet food' in Global Environmental Change journal

A 2019 report 'Animal Agriculture is the Leading Cause of Climate Change' (Climate Healers Position Paper)

The staggering impact of farming animals on the planet **here** (*Environmental Research Letters, 2013*), here (Proceedings of the National Academy of Sciences, 2018) and here (*The Lancet, 2016*)

Why growing plants is more sustainable than growing animals in *Climate Policy* (2018) and here in *The American Journal of Clinical Nutrition* (2003)

Read about **the footprint of a golden retriever** in *Dr. Pitcairn's Complete Guide to Natural Health for Dogs & Cats* (2017).

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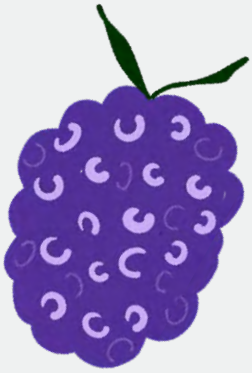
DOGGY DICTIONARY



Amino acids:

If a dog's diet contains enough amino acid building blocks, the 'strings' that make up protein molecules, dogs can make half of the 20 amino acids on their own. However, there are 10 amino acids that they can't create, which means they must be eaten. These are: Arginine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan and Valine. A dog food must contain all of them in adequate levels to meet the official nutritional standards which allow the food to be labelled 'Complete'.

AMY2B:

A gene that allows the production of **amylase**, an enzyme in the body that digests starch. Compared with wolves, dogs have more copies of this gene and their amylase activity is around 30 times higher than in wolves. This new genetic trait allowed early dogs to thrive on a diet rich in plant-based starch, very different to the diet of wild wolves.

Animal Welfare Act 2006:

This UK act states that owners must feed a "suitable diet" meeting their dog's nutritional needs. Pet food simply needs to be 'nutritionally complete': absolutely nowhere are vegan or vegetarian diets mentioned as unsuitable. Chapter 5 explores the nuances of the Animal Welfare Act and 'vegan' dog food.

Bioaccumulation:

Chemical toxins in the environment build up (bioaccumulate) in animals as we move up the food chain. When our pets eat other animals, they gobble up the toxins that those pigs, cows, chickens and fish absorbed or ate.

Bioavailable:

Proteins are only useful for the dog if they can be digested and absorbed within his or her body: your dog's food must contain 'bioavailable' nutrients.

By-products:

The rubbish bits of meat that humans don't want to eat – often rendered into dog food. While bits of meat like offal, feet, feathers, brain and bone aren't necessarily inherently bad for dogs, most of us would like to know exactly what's in our pup's food!

Complete:

Your dog's food has been formulated by professionals to contain all the nutrients they need to be healthy, in the correct balance.

CO2 emissions:

The release of carbon dioxide into the atmosphere, causing global warming. In 2020, ground-breaking research from the University of Edinburgh showed that the pet food industry produces almost 3% of the total carbon dioxide (CO_2) emissions from farming.

C-word:

An estimated 1 in 4 companion dogs will develop cancer, now the leading cause of canine death.

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Human grade:

When we describe the meat in dog food as ‘human grade’ we mean it is the same quality and cut as the meat we would consume as humans: it is not ‘by-product’. That means cows, pigs, chickens and other animals are being bred and killed specifically for dog food.

Flexi-dogian:

Your dog still eats some animal meat, but he or she also enjoys plant-based food, helping reduce environmental pawprints in leaps and bounds!

Hypoallergenic:

Formulated to prevent (or not aggravate) allergies. If you look at the ingredients on medical dermatological or hypoallergenic diets for dogs, you’ll often see that nutritionists have created meatless prescription foods.
For good reason: they work!

Maltase:

Another enzyme needed for starch digestion. Dogs have a longer version of the amylase gene that makes maltase, and this maltase gene is found in herbivores and omnivores.

Mitochondrial DNA (mtDNA):

This is the genetic material passed from mother to puppy. Using this canine mtDNA, we know that dogs began to evolve from grey wolves between 15,000 and 40,000 years ago. Over many thousands of years, dogs and humans continued to collaborate and began to develop similarities in their energy requirements and diet.

Natural:

Modern pet food marketing tells us we need to be feeding our four-legged friends the natural diet of a miniature wolf. Chapter 4 debunks this myth and shows why ‘natural’ isn’t always best!

Obesity crisis:

More than half of dogs in the UK are overweight or obese, your pup’s expanding waistline is putting them at risk from diabetes, arthritis, hypertension, kidney disease and cancer.

Obligate carnivore:

Obligate carnivores need to digest certain amino acids naturally present in animal meat to survive - they cannot create them internally from plant-based sources. Cats are an example of obligate carnivores.

Omnivore:

Both hounds and humans are omnivores: we can safely digest and use the nutrients present in both animal meat and plants, but we don’t need the former to thrive or survive.

Premium pet food:

Today, most of us want to feed premium food to our dogs, and with conventional pet food this often means **‘human grade’** or **raw meat** diets. With plant-based food, this means high quality ingredients like vegetables, fruits and other superfoods.

Protein:

Protein molecules are molecular ‘strings’ made up of 20 common amino acids. When dogs eat protein, their digestive system breaks down these strings into their amino acid building blocks, which are then used by your dog’s body to make lots of different proteins: the ones needed at any particular moment to build muscle, produce hormones or fight infection. According to current nutritional guidelines for dogs in Europe, the minimum amount of protein required for canine growth is 18% of daily food consumption.

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Rancid fats

Often present in commercial meat-based diets, rancid fats are a leading source of free radical production in dogs. These free radicals, unstable atoms that can damage cells, have been linked to both arthritis and cancer.

Raw meat:

Raw meat feeding for dogs has become very popular, despite the environmental damage and warnings from veterinarians about bacteria and public health risks, as well as obesity.

Rendering:

The cooking process by which meaty by-products become dog food, concentrating the proteins and fat, but making the ingredients unrecognisable.

Sniffari:

Allowing your dog to take their sweet time on a scent-driven walk. Building regular ‘sniffaris’ into your schedule could be fantastic for you and your dog, allowing them to exchange ‘peemails’ with other dogs, understand the nuances of the world around them, and be mentally stimulated.

Taurine:

An essential amino acid, found naturally in animal meat, which cannot be made inside the body by obligate carnivores. However, being omnivores, dogs can create this on their own from plant-based proteins. Cats, on the other hand, cannot: they need to be fed food that contains Taurine, whether from animal-based or synthetic sources.

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