



# DISCOVER NUTRITION AS UNIQUE AS YOUR PUREBRED DOG

Jill Cline, MS, PhD  
Nutritional Insights Manager at Royal Canin USA

If you are reading this article you are a breeder, a purebred dog aficionado or a dog lover. In any case, you understand that the beauty of purebred dogs is that each breed has its own distinct characteristics and behavioral attributes.

While it is understood a variety of genetic and environmental factors play a role in determining a breed’s appearance and personality, one less commonly recognized need is their individualized nutritional requirements. For example, the amount of amino acids from protein needed to maintain the long hair of the Yorkshire Terrier may not be the same as the amount needed to maintain the shorter coat of the Chihuahua. Another interesting feature to examine in purebred dogs is how the facial morphology or shape, as well as eating behavior, can influence the plane of nutrition.



## SIZE ALONE DOES NOT DETERMINE NUTRITIONAL NEEDS

Certain attributes and physical conditions can be assigned to dogs based on their adult size. For example, giant breed dogs tend to not live as long as small breed dogs. Or, that small breed dogs need more calories on a per pound basis compared to large breed dogs.

Within size categories, purebred dogs often have idiosyncrasies which are sometimes exacerbated or different from that standard within the size category. For example, large breed dogs tend to have more hip dysplasia than small breed dogs and the incident of hip dysplasia is very common in such breeds as German Shepherds and Labrador Retrievers. If we simply classify purebred dogs based on their weight or group, we do not capture all of the differences between the breeds.

### BREED-SPECIFIC DIETS: ONE STEP BEYOND SIZE-BASED NUTRITION

It is commonly accepted by most breeders that you must feed extra small (8 lbs. or under) and mini (9-22 lbs.) dogs differently than you would large dogs. However, let’s study two extra small breeds and their nutritional requirements based on their breed origin and function.

In general, extra small dogs like the Yorkshire Terrier and the Chihuahua have tiny jaws, higher energy needs on a per pound basis, a high incidence of dental disease and can commonly have heart murmurs. However, if you consider where the dogs came from and their functions, it makes sense that their nutritional needs would be different.

#### THE YORKSHIRE TERRIER

The Yorkshire Terrier originally hail from mines of Yorkshire England and their job was to guard the lunch pails of miners. The breed as we know it today is feisty, affectionate and true to its working Terrier heritage. Physically, they have a single strand coat which requires certain amino acids for maintaining coat health and strength. The Yorkshire Terrier also has molars slightly too large for the size of their jaws which can make their teeth fragile and more susceptible to dental disease.

#### THE CHIHUAHUA

The origin of the Chihuahua is not clear, but it is believed that they were developed into the breed we know today by Aztec Indian royalty. Their job was to alert the royals when someone approached. They are considered finicky eaters, most likely because they only have 1/3 of the nasal receptors of other dogs and compared to other breeds of the same size, are more prone to joint and heart issues.

*As a breeder you clearly understand that these two breeds are very different— so it would only make sense that their nutritional needs would be different.*

Both Yorkshire Terriers and Chihuahuas need a diet that provides dental benefits to help prevent tartar formation on the teeth. And, because they are both finicky eaters with tiny jaws, a specialized kibble that is softer for them to chew and fits their unique jaws is beneficial. However, Yorkshire Terriers need more highly digestible protein to provide certain amino acids like methionine, cysteine, tyrosine and phenylalanine to help maintain their coat strength and brilliance, whereas Chihuahuas benefit more from glucosamine and chondroitin sulfate to help manage potential joint issues. Chihuahuas will also do better on a diet higher in carnitine and taurine to help the heart work more efficiently. Extra antioxidants like vitamin E and C, as well as, green tea polyphenols also help protect heart tissues.

	DENTAL	SKIN & COAT	JOINT	HEART
YORKIE	✓	✓		
CHIHUAHUA	✓		✓	✓





# LET’S TAKE A CLOSER LOOK AT THESE FOUR BREEDS

All of these dogs can be in a similar weight range depending on the pedigree from which they come; however, their nutritional requirements are very different.



**LABRADOR RETRIEVERS** were bred to retrieve fish out of the north Atlantic and were originally known as the Lesser Newfoundland or St. John’s Bay dog. Because they were bred to swim in the icy ocean waters, they have more body fat than other breeds of similar size and have dense coats which are covered with sebum (an oily substance) to help keep their skin dry when they swim. The skin of a Labrador Retriever needs special consideration. Due to their icy Atlantic Ocean roots, Labrador Retrievers are predisposed to becoming overweight as a result of their extra body fat percentage so they need a diet with an adjusted calorie content. They are also more susceptible to joint disease and can benefit from extra joint nutrients (glucosamine and chondroitin sulfate) in their diet. Labrador Retrievers have a reputation for inhaling their food without even tasting it and benefit from having a special kibble that encourages them to chew which helps them feel more full after eating and provides dental benefits.

The **GOLDEN RETRIEVER** was bred to retrieve but unlike the Labrador, the Golden Retriever was intended to retrieve upland game birds in marshy freshwater conditions in Scotland. The dense, long outer coat of the Golden Retriever keeps this dog warm in cold and wet conditions but may require extra nutrients to help strengthen the skin barrier function against potential pathogens. Golden Retrievers are happy-go-lucky dogs who usually have never met a stranger or a food they don’t like which ultimately leads to a struggle with unwanted weight gain. They benefit from a lower calorie diet with extra EPA/DHA and glucosamine and chondroitin sulfate for joint health.



**GERMAN SHEPHERDS** were originally bred to move herd animals in the mountains of Germany. In addition to herding animals, these dogs were expected to guard them as well. The German Shepherd is well known for having a sensitive digestive system and delicate skin. This breed is also known for its downward sloping hind end and unique hip angles and may experience joint issues which would benefit from preventive joint care. German Shepherd dogs are considered at risk for “bloat” or gastric dilatation volvulus, a potentially fatal disease. A specialized kibble that encourages chewing can help lengthen the meal and encourages chewing which may help manage one of the risk factors of “bloat.”



**ENGLISH BULLDOGS** are gentle and fun loving today but originally these dogs were bred to fight bulls which helps to explain some of their unique physical characteristics like their wrinkly brachycephalic faces. The English Bulldog has a reputation for flatulence. This breed benefits from diet that helps to manage the causes of flatulence like a slow digestive tract and over fermentation of food residue. The wrinkly face of the English Bulldog is iconic but those folds can cause health concerns if they are not kept clean and dry. It is also helpful to provide nutrients which support a strong skin barrier to help prevent yeast infections in the skin folds. English Bulldogs are considered messy slow eaters because they can have a difficult time picking up food and tend to scatter it all over or they lie down and rest during the meal. Interestingly, we don’t associate the body shape of the English Bulldog with dogs we consider as having a high predisposition to hip dysplasia, but in fact, English Bulldogs often suffer from this disease and can benefit from nutrients to support joints.



	JOINT DISEASE	GI UPSET	FAST EATER	SKIN CONCERNS	WEIGHT ISSUES	CARDIAC ISSUES
LABRADOR RETRIEVER	✓		✓	✓ (hot spots)	✓	
GOLDEN RETRIEVER	✓			✓ (hot spots)	✓	✓
GERMAN SHEPHERD	✓	✓ (diarrhea, soft stool)	✓	✓		
ENGLISH BULLDOG	✓	✓ (flatulence)		✓ (skin fold infections)	✓	

Purebred dog lovers appreciate that every breed is unique with its own specific standards. Today, science indicates that diets for certain breeds of dogs can help them reach their full potential. At Royal Canin, breeders, veterinarians and nutritionists are working together to better understand and advance the science of feeding purebred dogs.

## DO YOU KNOW?

Which unique kibble shape was developed for which of these breeds and why?

This kibble was designed with the optimal size and texture for the miniature jaw and slightly pointed muzzle of the **CHIHUAHUA**.

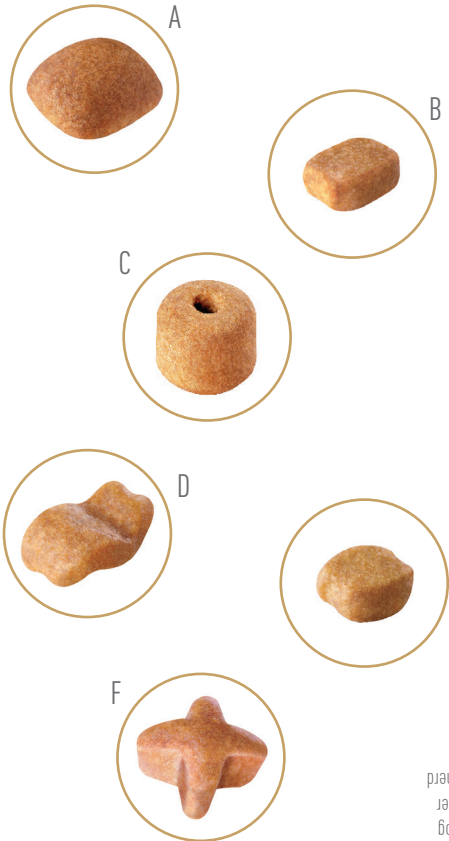
The **ENGLISH BULLDOG** has a very short (brachycephalic), broad muzzle that is turned upward. This breed also has thick and deep “chops” that completely overhang the jaw the lower jaw. The kibble design for the **BULLDOG** formulas helps the Bulldog more easily pick up kibble.

The **GERMAN SHEPHERD** has a long, strong muzzle with strong teeth. The size, shape and texture of the kibbles in **GERMAN SHEPHERD** formulas are designed to be easy for this breed to pick up and encourage him to chew.

The **GOLDEN RETRIEVER** has a straight muzzle and teeth that meet in a scissors bite. The kibble size, shape and texture of the **GOLDEN RETRIEVER** formulas is designed specifically for this breed and encourages him to chew.

The **YORKSHIRE TERRIER’S** muzzle is not too long and his teeth meet in a level bite. The kibble of the **YORKSHIRE TERRIER** formulas is designed with the optimal size, shape and texture for this breed to encourage chewing.

The **LABRADOR RETRIEVER** is a breed that tends to eat quickly without chewing its food. The kibble of the **LABRADOR RETRIEVER** formulas helps to slow the rate of ingestion and encourages the Lab to chew his food.



A: Golden Retriever  
B: Chihuahua  
C: Labrador Retriever  
D: English Bulldog  
E: Yorkshire Terrier  
F: German Shepherd