

Intelligent Nutrition for the Purebred Dog™



Meet the Needs of Your Breed
The Labrador Retriever



Redefining canine nutrition

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Since our establishment over 40 years ago, Royal Canin has always stayed true to its principles: Knowledge and Respect for the Animal. By taking account of the true nature of dogs, Royal Canin has always approached dog and cat food with the greatest respect for their animal quintessence and their real nutritional needs. For Royal Canin, “the animal before the master” is an enduring philosophy.

Not deviating from this fundamental guiding principle, Royal Canin is probably one of the few major brands never to conduct consumer research or market studies.

That true respect implies a certain number of obligations, including Knowledge: knowledge of the animal's morphological, physiological and nutritional characteristics, to provide and to guarantee food that fulfills its actual needs.

For Knowledge of and Respect for the animal spawns true nutritional precision. Due to our unwavering fidelity to our core values, Royal Canin has realized major advances in canine nutrition:

- 1980: Royal Canin perfects AGR, the first food specially designed to meet the needs of large-breed puppies. For the first time in the global pet food industry, and 16 years ahead of the competition, the size of the animal is taken into account in the formulation of its food.
- Since 1977, Royal Canin's nutrition for older dogs is the only food in the world, 20 years before any other players in nutrition, to take account of the need for a high protein diet to limit the loss of muscle mass.
- In 1997, Royal Canin perfects RCCI Size, the world's first food program to take account of age, lifestyle and especially the size/weight ratio of various canine breeds.

to better serve exceptional breeds

- 2001: Royal Canin becomes the first and currently the only producer of a specific nutritional program for giant breed dogs (adults weighing over 100 lbs).
- 2002: Royal Canin becomes the first to launch a food specially designed for Yorkshire Terriers, addressing in particular the breed's legendary coat and its unique oro-dental characteristics.

In 2003, Royal Canin had the courage to redefine the rules of the health nutrition game once again, launching the world's first dedicated food for Labrador Retrievers.

Eighteen months of observations and studies enabled us to perfect our very precise nutritional response to the very specific needs of this very useful and highly prized breed.

The finer details of its hair, its eating behavior, its strength and sensitivity to articular disorders and its exceptional visual and cognitive capacity; we would not have learned everything we now know about the Labrador Retriever without the expertise and the support of breeders and veterinarians, and the commitment of our nutritionists.

In deference to this exceptional breed, we have dedicated an encyclopedia to it, published under the authority of UMES (Unité de Médecine de l'Élevage et du Sport) and its founder Professor Dominique Grandjean, with the valuable association of the Research and Development department. Franck Haymann (Aniwa), a recognized authority in the world of dogs, contributed greatly to this project.

For every one of us, the development of best balance nutrition for Labrador Retrievers has once again been built on a blend of nutritional expertise and passionate commitment.

*Pascal Jouannet
Chief Executive Officer
Royal Canin Group*

THE LABRADOR RETRIEVER ...

A versatile dog in a class of its own!

***1 A WATERPROOF COAT
WITH A UNIQUE STRUCTURE***

***2 A NATURAL PREDISPOSITION
TO EXCESS WEIGHT***

***3 A SOLID BODY AND
HEAVY BONE STRUCTURE***

***4 VISUAL AND COGNITIVE CAPACITIES
ENGENDERED BY PRUDENT SELECTION***

LABRADOR RETRIEVER 30™ ...

The nutritional response



1 Nourishing the coat, protecting the skin

- thanks to an exclusive skin-hair complex acting on the synthesis of ceramides and protecting the surface of the skin (fatty acids, zinc, amino acids, vitamins A and B).
-



2 Maintaining ideal weight by harmonizing energy intake with lifestyle

- thanks to less fat (13%),
 - more protein (30 %),
 - less energy (3700 kcal/kg) and
 - L-carnitine to transport fatty acids.
-



3 Protecting joints

- thanks to the incorporation of chondroitin sulfate and glucosamine,
 - the anti-inflammatory action of EPA and DHA (omega 3),
 - the presence of manganese and an antioxidant complex to combat oxidative injuries.
-



4 Preserving visual and cognitive capacities

- thanks to lutein, zeaxanthin and
- the antioxidant complex.

History of the Labrador Retriever

Origins



St. John's Dog

Though it may sound odd, Labrador Retrievers actually originated in Newfoundland.

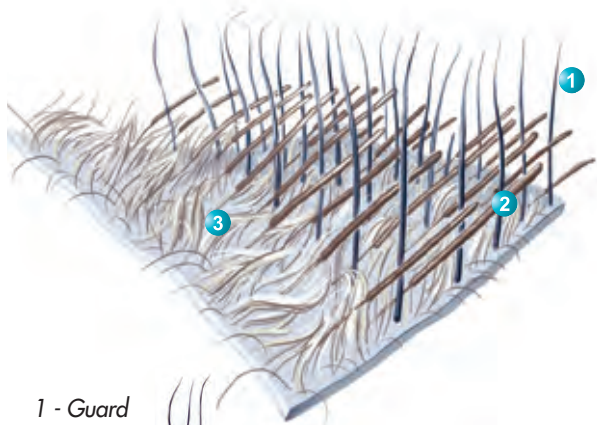
Exploring this corner of the globe in 1497, Cabot observed that it was totally uninhabited by man or dog. English fishermen from Bristol who put in there probably brought dogs with them, and they subsequently settled in the region. In 1662, W. Cormack, a native of St. John, journeyed across Newfoundland on foot and returned with stories of small black water dogs, “admirably trained in retrieval.” Their short hair was an advantage for these Newfoundland type dogs, as they didn’t turn into a block of ice when they got out of the water. They were also excellent, powerful swimmers, and their size allowed them to accompany sailors in their dories, the small boats that were used to ferry them between the shore and the ships anchored out at sea. These dogs would also catch fish brought up from great depths that slipped through the nets.

The dog, which is a little larger than a Pointer, with a broad chest and fine limbs, was dubbed the St. John's Dog. The hunting and swimming skills of this almost always black animal were complemented by its good temperament, which soon became apparent. The dog's arrival in England around 1830 is attributed to Lord Malesbury and Colonel Hawker. In a letter to a friend, Lord Malesbury's son explains that he calls them Labrador Dogs. He asserts that he keeps the breed as pure as possible, not wanting to lose a dog whose "hair shakes off the water as if it were oil" and that has the "tail of an otter."

The Labrador Retriever was recognized by the British Kennel Club as an official breed on July 7, 1903, which means that the breed celebrated its official centenary in the United Kingdom in 2003. The Labrador Retriever was first recognized in 1917 by the American Kennel Club. The US Labrador Retriever Club was organized in 1931.



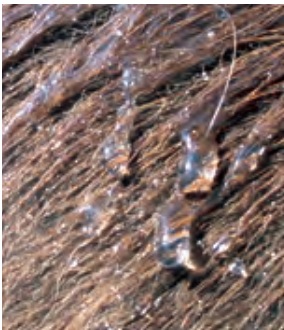
1 A waterproof coat with a unique structure



1 - Guard hair

2 - Secondary hair

3 - Down



Waterproof coat

- **The structure of the Labrador Retriever's coat is unique.**

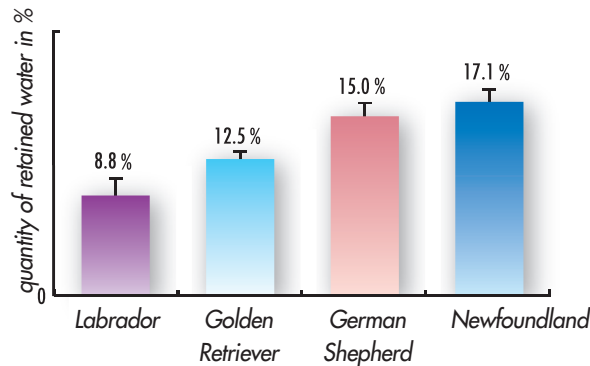
There are several hair types among the great many breeds of the canine species. The structure of the Labrador Retriever's is unique. Its hair is strong, dense and short, which means the Labrador can endure even ice-cold water.

When retrieving in the countryside, Labradors have to negotiate bushes and thickets that can cut them. Their dense fur is a great help in preventing lesions.

- **The water glides over the coat, as it glides over the feathers of a duck.**

Labradors are less wet than other breeds after a swim. (Weber, 2003)

Water retention rates



Protocol:

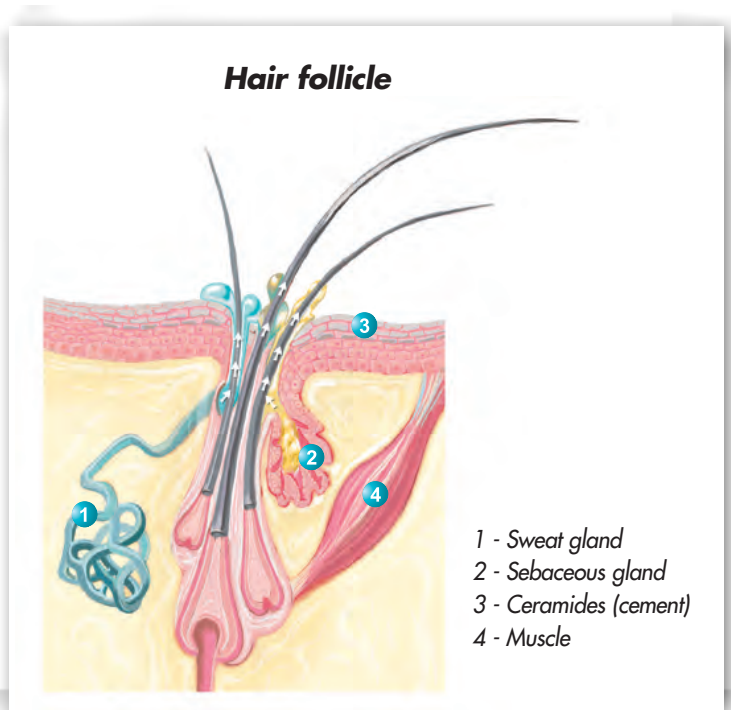
- dogs were first weighed dry
- 15 seconds in a tepid bath
- 10 second wait
- weighed wet
- results converted to metabolic weight

- **Labradors produce more sebum than other breeds.**

(14 μ g/cm² versus 3 μ g/cm² in poodles) (Dunstan, 2000)

Sebum is the oily secretion of the sebaceous glands that waterproofs the hair. The oily secretions of the sebaceous glands and the aqueous secretions of the sweat glands combine to form an emulsion that sheathes the hair and covers the surface of the skin. Once it reaches the surface, the sebum is contaminated by bacteria that produce lipases, which in turn form fatty acids with antibacterial properties. (Kwochka, 1995; McEwan Jenkinson, 1989)

In dogs, the secretions of the sweat glands do not have a perspiration function (thermoregulation). In dogs, sweat is believed to have pheromonal and antimicrobial properties. (Scott, 2001; McEwan Jenkinson, 1989)



- **Labrador dogs sometimes develop a hypersensitivity to specific allergens such as dust mites or pollen.**



Pollen

This condition is called atopy. (Carlotti, 2002; Hillier, 2001; Sousa, Marsella, 2001; Willemse, 2000)



LABRADOR RETRIEVER 30™: ***Nourishes the coat, protects the skin***

Objective 1: Provide the building blocks the skin needs

Hair is made up of keratin proteins. With 30% high value biological proteins per ration, every meal provides dogs with all the ingredients essential to a healthy coat, especially sulfur amino acids like taurine and methionine. (Mason, Lloyd, 1993).

Objective 2: Strengthen the structure of the skin

● More zinc

Zinc is essential to the skin. It synergizes with linoleic acid and helps ensure a coat with sheen, and without scales. (Marsh, 1998) Zinc also stimulates wound healing. (Scott, 2001)

● More vitamin A (for healthy epithelium)

Indispensable to the skin and the proper functioning of the sebaceous glands (which produce sebum, an agent that makes the hair waterproof), vitamin A helps combat seborrhea and has a key role in skin regeneration (growth and proliferation of epidermic cells). (Scott, 2001)

● More vitamin B

B vitamins help keep hair and fur healthy. They also play a significant role in the metabolism of fatty acids.

● Sources of panthotenic acid, inositol, niacin, choline and histidine.

These nutrients act in synergy to strengthen the skin's barrier function, cutting water loss and preventing penetration by allergens (pollen, dust mites). (Watson, 2002)

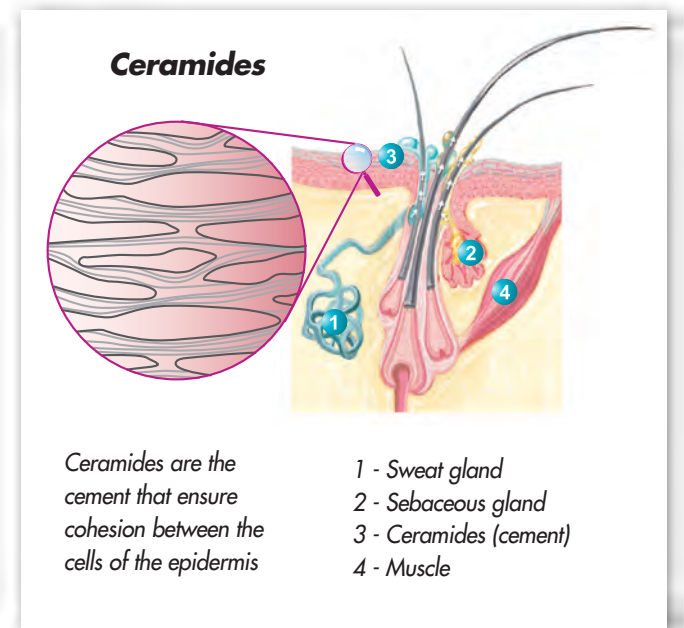
Objective 3: Boost the brilliance and sheen of the coat

● More fatty acids

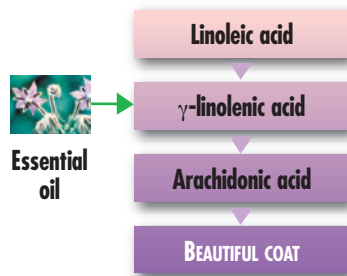
These are essential to the health and the sheen of the coat. An extra supply of unsaturated fatty acids and Omega 6 and Omega 3 (fish oil) provides optimal nourishment for the skin. (Bond, 2001; Rees, 2001).

Linoleic acid (omega 6) is indispensable for the production of ceramides, the intercellular "cement" with a key role in the skin's barrier function.

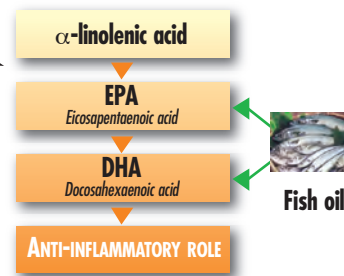
Omega 3 fatty acids curb inflammatory reactions. (Bond, 200; Lloyd, 1999)



Metabolism of omega 6 fatty acids



Metabolism of omega 3 fatty acids



2 A natural predisposition to excess weight



● Genetics

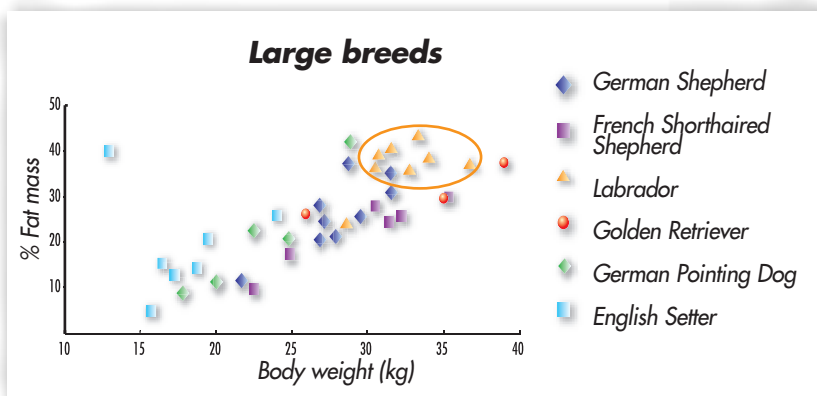
A probable remnant passed down by its Nordic ancestors, who needed to take in a lot of calories so they could safely enter the icy waters of the Atlantic, the Labrador's appetite is legendary. Epidemiological studies show that the Labrador is among the breeds with an increased risk of obesity. (Markwell, 1990; Hand, 2000). Compared with other dogs of a similar weight, the Labrador's body mass consists of less muscle mass and more fat (see the graph below).

● Temperament

Labradors often tend to be greedy. Natural canine behavior leads dogs to be voracious when food is available in abundance and Labradors are no exception to the rule.

● Neutering

Today, over 70% of dogs in the United States are sterilized. (Source: The Humane Society of the United States). While neutering plays an important role in responsible pet ownership, it can also increase the risk of excess weight gain. That makes it essential for owners to maintain a proper exercise regime and, like breeders do, follow strict feeding recommendations.



Source: Royal Canin 2003

● Lifestyle

The versatility and good-natured temperament of Labrador dogs mean they can adapt to any situation. Family dogs will wait patiently for the kids to come home to play in the yard. The tasks entrusted to guide dogs for the blind and assistance dogs for the disabled, and especially their sense of duty, mean they are not always able to expend the energy their enthusiastic temperament demands. A sedentary way of life combined with a natural fondness for food can easily result in excess weight.

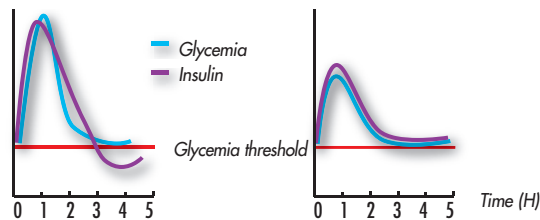


LABRADOR RETRIEVER 30™:

Maintaining ideal weight by harmonizing energy intake with lifestyle

Objective 1: Control the energy content in food

Modulating glucose absorption

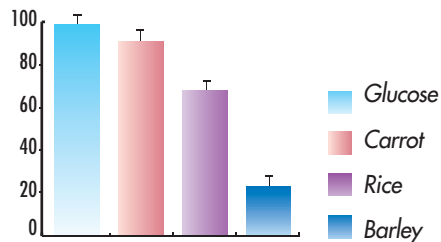


Simple sugars:
considerable secretion
of insulin leading to a fall
in glycemia

Complex sugars:
stable glycemia

The energy value of **Labrador Retriever 30™** is reduced to improve the body condition of the Labrador. With 30% protein and only 13% fat, it provides dogs with the nutrients they need to produce powerful muscles without excess fat. A high protein diet promotes lean muscle mass, favoring muscles over fat. Royal Canin provides precise advice on how much food a dog needs, based on how much exercise it gets and how its day is structured.

Glycemic Index



(from Brand Miller, 1995)

Specific nutrients play a significant part in ensuring that dogs do not put on unwelcome excess pounds. **Barley** is a cereal that takes time to digest (slow-acting sugar). Its weak glycemic index (22 as opposed to glucose's 100) ensures it does not cause a peak in the production of insulin. That keeps the dog from becoming hungry between meals.

The glycemic index is a scale used in human nutrition to express the blood sugar level, thus helping diabetics to balance their diets.

Objective 2: Utilize fat better

L-carnitine is essential for transporting fats (Hames, 2000). It enables the cell to utilize fat as a fuel, which is very useful in case of prolonged physical effort.

Objective 3: Slow down the ingestion rate of the "gluttonous" dog

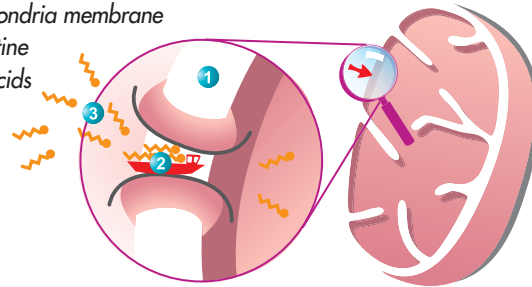
Royal Canin has focused on perfecting a kibble with a shape and texture specifically tailored to the needs of the Labrador. This low-density kibble promotes the feeling of a full stomach. Its size forces the dog to chew, which encourages mechanical brushing of the teeth, combating the buildup of dental plaque. Also, the presence of salivary calcium chelating agents protects teeth from the mineralizing effects of plaque, which is the formation of tartar.

Finally, it is vital to stress again that the best way to control a Labrador's weight is by following the recommended rations.

Do not forget that obesity is unheard of at breeding kennels, because breeders understand the importance of this rule like no one else.

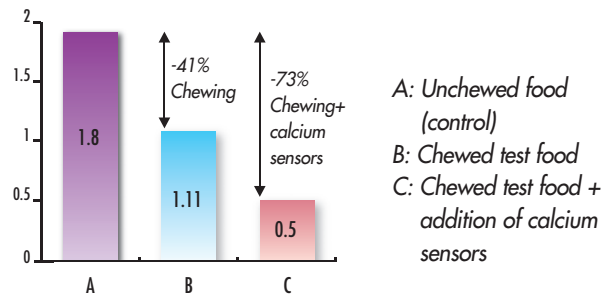
Action of L-carnitine

- 1 - Mitochondria membrane
- 2 - L-carnitine
- 3 - Fatty acids



L-carnitine enables the re-absorption of fatty acids in the mitochondria where they are turned into energy.

Tartar index



The effect of chewing the kibble and the addition of calcium sensors on the tartar index. Encouraging the dog to chew its food reduces the tartar index by 41%. Extra incorporation of calcium chelators reduces the index by 73%. From Soulard Y and Servet E, 2002. Royal Canin Research Center, 28-day trial.

3 A solid body and heavy bone structure



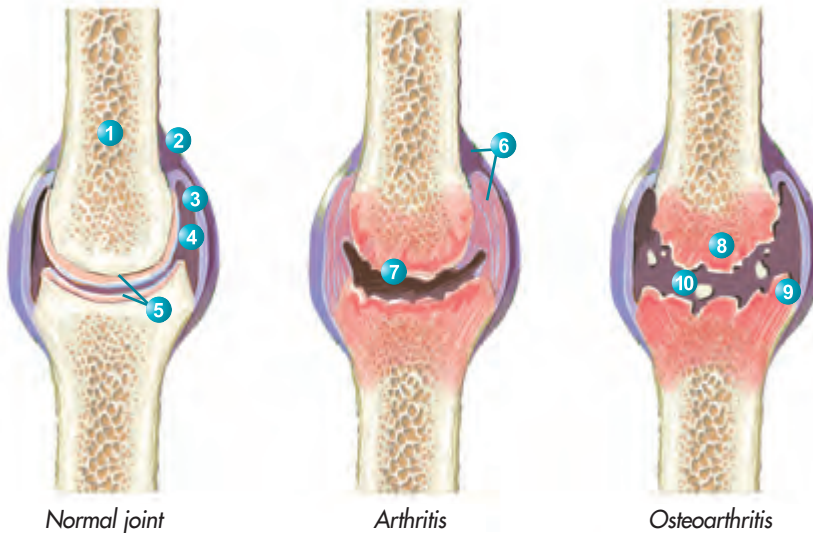
Jane David and "Kita" and A.J. Frank and "Öhlin"

The Labrador never lets up. Whether it's hunting, working or simply walking with its master, it's always full of energy. In the wake of the September 11, 2001 attacks on the USA, Labradors showed untiring efforts as part of rescue parties searching the rubble. (Focus group, 2003).

In expending so much energy, the Labrador puts its joints under a huge amount of stress.

In time, the cartilage is damaged and this wear and tear may lead to arthritis as the animal gets older.

Evolution of osteoarthritis

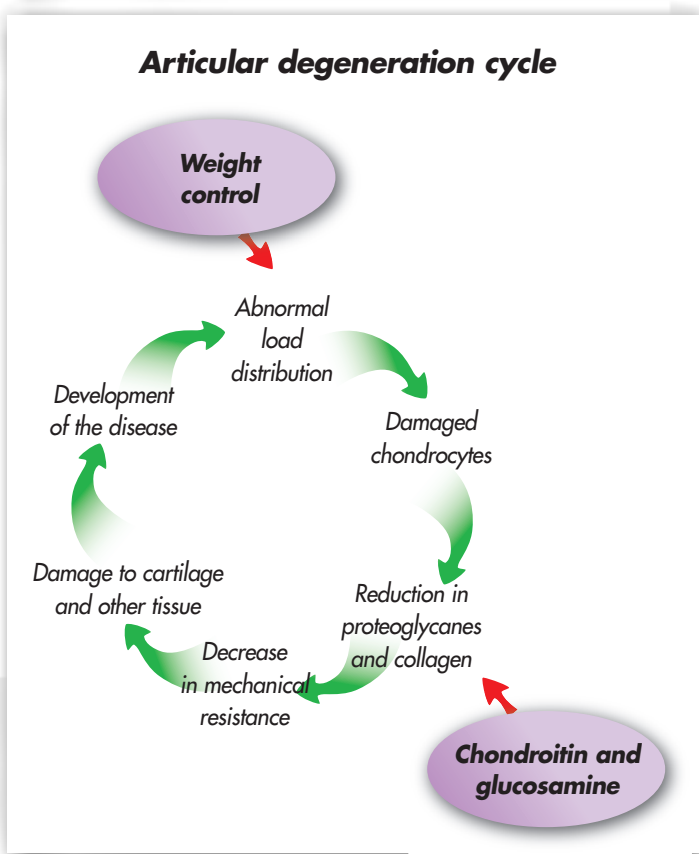


- 1 - Bone
- 2 - Articular capsule
- 3 - Synovial membrane
- 4 - Synovial cavity
- 5 - Cartilage
- 6 - Thickening of the synovial capsule and membrane
- 7 - Thinning of cartilage
- 8 - Destruction of cartilage
- 9 - Osteophyte
- 10 - Cartilage remnants

Normal joint

Arthritis

Osteoarthritis



Maintaining an optimum weight is the best way to relieve joints.

Cartilage is a water-cushioned shock absorber. When a joint moves, the coefficient of friction is equivalent to ice moving against ice. It “glides” effortlessly. In time, this friction will damage the cartilage.

Ligament tear



Cruciate ligament injuries are not uncommon among these sporting dogs (Malet, 2002).

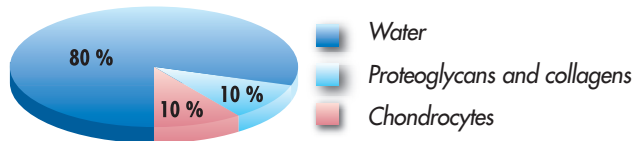
LABRADOR RETRIEVER 30™:

Protects joints

Objective 1: Relieve joints by controlling body weight and incorporating glucosamine and chondroitin

The major supplementary source of glucosamine and chondroitin (1000 mg) helps preserve a well-hydrated cartilage matrix. (Innes, 2001)

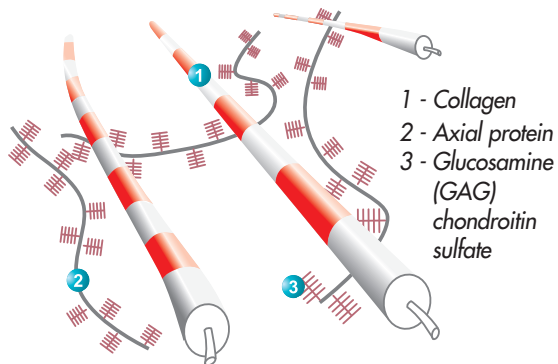
Structure of cartilage



Chondroitin sulfate inhibits the action of enzymes that cause the destruction of cartilage. Its high water retaining capacity ensures proper cartilage hydration.

Glucosamine (precursor of glycosaminoglycans, the principal components of articular cartilage) stimulates the regeneration of cartilage (especially promoting the synthesis of collagen).

Collagen

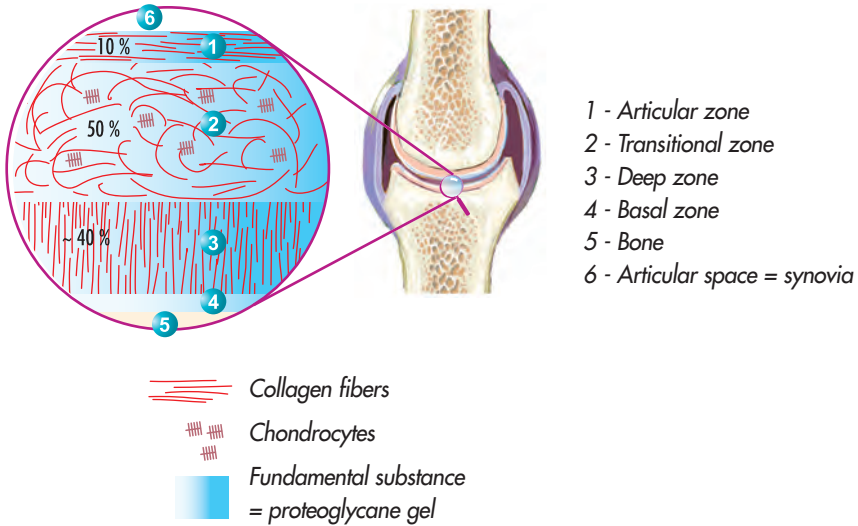


Objective 2: Nourish cartilage

● A source of manganese

Manganese contributes to the synthesis of procollagen, the precursor of collagen, which makes up cartilage fiber.

Structure of articular cartilage



Objective 3: Combat inflammatory mechanisms

● A source of omega 3

Omega 3 fatty acids (EPA and DHA from fish oil) with their anti-inflammatory effects also help to maintain healthy joints. (Innes, 2001)

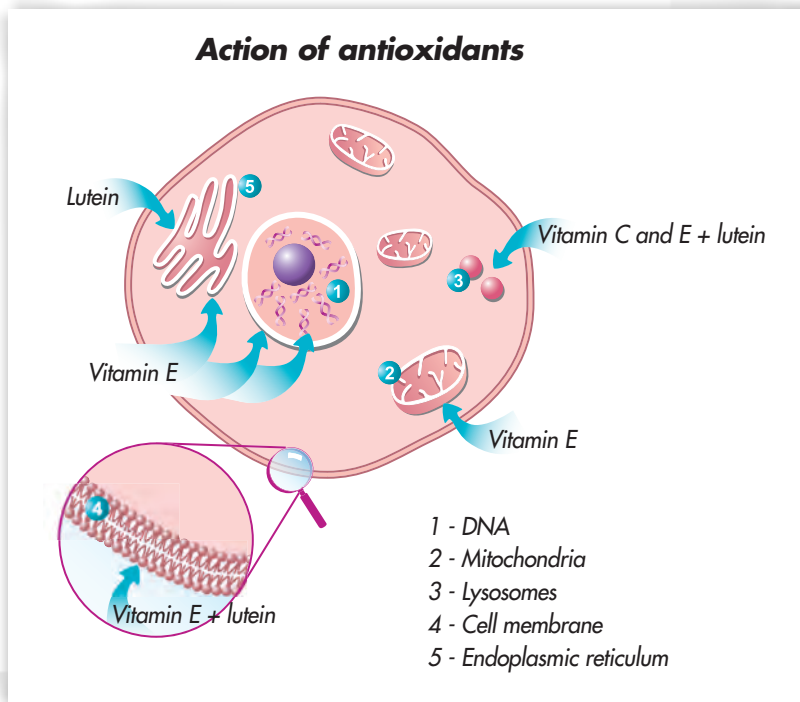
Objective 4: Combat degenerative mechanisms stemming from oxidative stress

Exercise generates oxidative stress as a consequence of the disequilibrium between free radicals and the antioxidants that combat them.

Free radicals are responsible for many degenerative diseases, including arthritis, cancer, diabetes, cardiovascular diseases and senility. (Grandjean, 2002)

Intensive or prolonged exercise will lead to an antioxidant deficit. At the end of 24 hours, the animal will not have replenished its reserves. (Obra, 1999)

In the long run, this deficit may result in many conditions, including arthritis, which is why **Labrador Retriever 30™** has an increased supply of:



● Vitamin E

This will slow down cellular aging by blocking free radicals. It protects cellular membranes, combats the adverse effects of stress that working dogs suffer, and improves immune defenses. (Devlin, 2002)

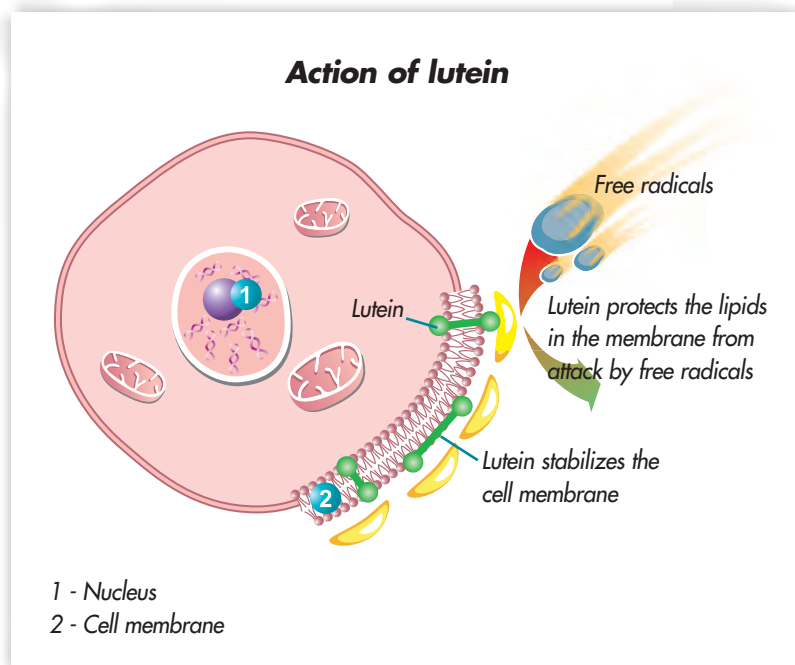
● Vitamin C

Acts in synergy with vitamin E to facilitate regeneration.

● Lutein

A potent antioxidant that helps stabilize cell membranes. Lutein is a vegetable extract derived from the petals of African marigold (*Tagetes erecta*) that fulfills two essential functions:

- It incorporates into the cell membrane to protect the lipids there against attack by free radicals and to combat lipid peroxidation;
- It stabilizes cell membranes and modulates the immune response by driving up the production of antibodies. (Reinhart, 2000)



● A source of taurine

The amino acid taurine is a principal constituent of immune cells and muscles. It helps combat aging and is vital to the proper functioning of the heart, especially in large dogs, which sometimes exhibit cardiomyopathies. (Dukes-McEwan, 2003)

4 *Visual and cognitive capacities engendered by prudent selection*



The Labrador is a disaster dog that works itself to exhaustion to rescue people all over the world.

Labradors trained to find explosives and drugs are able to distinguish 500,000 different odors. The average human recognizes around 4,000.

Comparison of olfaction receptors in various breeds and humans

	Number of receptor cells (millions)
Labrador	220
Bulldog	100
Dachshund	125
Fox Terrier	147
Human	10

(Vadurel, 1995)



Its size, endurance, character, intelligence and stability make it the ideal guide dog. It also has a proven track record as an assistance dog for people with motor disabilities.

In its work as a retriever, the Labrador has to see exactly where a bird falls. In fact, it is able to memorize where up to 10 birds fall to earth at any one time. (Lebrun, 2003).



LABRADOR RETRIEVER 30™: **Preserves visual and cognitive capacities**

Guide dogs become the eyes of their masters, so it is essential they possess acute vision.

Objective 1: Nourish the crystalline lens and the retina

● A source of lutein and zeaxanthin

These two nutrients are present in the crystalline lens and the retina in significant quantities, protecting them against damage caused by oxidation. (Taylor, 2001)

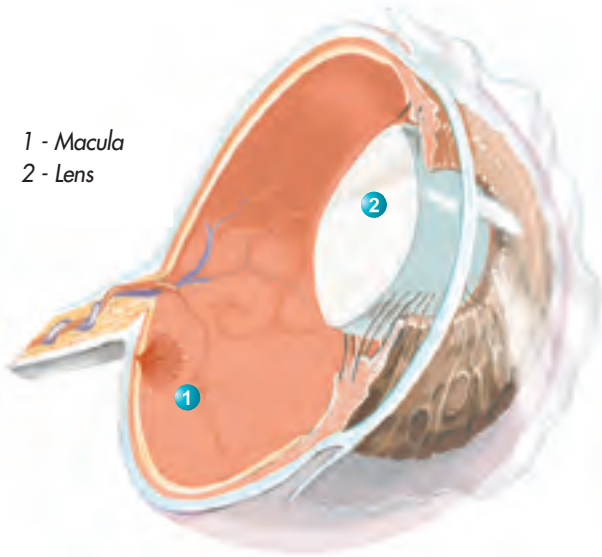
Zeaxanthin is a yellow pigment absorbing UV light and protecting the eye.

They are both present in large quantities in marigold extract and corn gluten (content: lutein 4.6 mg/kg and zeaxanthin 5 mg/kg).



Cross section of an eye

- 1 - Macula
- 2 - Lens



The supplementation of lutein and zeaxanthin will be all the more effective in maintaining good vision if it is continued for a protracted period, preferably during the entire life of the animal. (Jacques, 1999)

Objective 2: Maintain cognitive functions

With an average life expectancy exceeding 10 years, the older Labrador can develop some behavioral complaints. (Heath, 2002; Mertens 2003) A patented synergistic antioxidant complex helps maintain cognitive functions and plays a role in preventing senility.

The administration of an **antioxidant complex** (vitamin E, vitamin C, lutein and taurine) before problems manifest themselves, preferably during the entire life of the dog, will reinforce its effectiveness in preventing cognitive complaints. (Grandjean, 2002; Heaton, 2002)

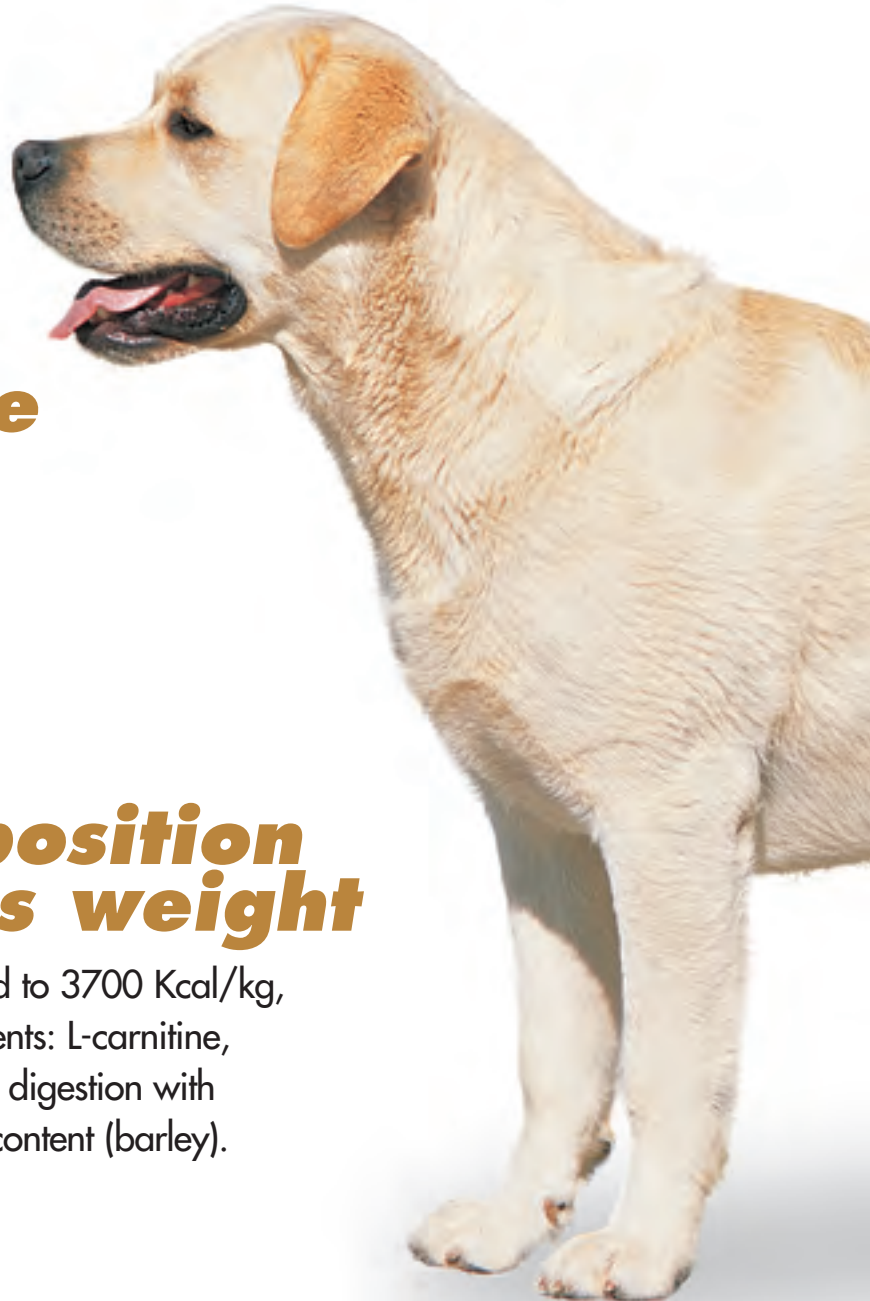
The synthesis of the various

Vision and cognitive function

lutein, zeaxanthin
and antioxidant complex

Predisposition to excess weight

energy value limited to 3700 Kcal/kg,
specific ingredients: L-carnitine,
cereal for slow digestion with
a high protein content (barley).



nutritional key facts

Waterproof coat

fatty acids, vitamins,
specific amino acids acting in synergy



Joints

antioxidant complex,
glucosamine, chondroitin,
manganese, omega 3

A NUTRITIONAL PROGRAM FOR EVERY

8 - 15
weeks months

GROWTH PHASE

LABRADOR RETRIEVER PUPPY 33™

For Labrador Retriever puppies from
8 weeks to 15 months old*



SAFE GROWTH

If a Labrador puppy grows too quickly, his weight can outpace his skeletal development, even leading to deformities. Labrador Retriever Puppy 33™ provides balanced energy levels to maintain a steady, healthy growth curve.



HEALTHY WEIGHT

Just like adults, Labrador Retriever puppies are prone to extra weight, causing problems as they grow. Labrador Retriever Puppy 33™ is formulated with L-carnitine, which can help to burn fat.



ULTRA DIGESTIBLE

The digestive tract of a puppy is not fully developed until he matures. Labrador Retriever Puppy 33™ is formulated with a special blend of fibers that gently supports the puppy's healthy digestion.

* Labrador Retriever Puppy 33™ has been formulated to meet the needs of puppies from as early as 8 weeks old. Royal Canin recommends MAXI Babydog 30™ up to 5 months when available.

STAGE OF THE LABRADOR RETRIEVER'S LIFE

from
15
months

ADULT AND MATURE PHASES

LABRADOR RETRIEVER 30™

For Labrador Retrievers over 15 months old



HEALTHY WEIGHT

Increased weight can lead to serious health problems. Labrador Retriever 30™ is formulated with optimal energy levels and L-carnitine to improve fat metabolism.



STURDY SKELETON

More body weight increases the level of stress on the skeleton. Labrador Retriever 30™ contains optimal levels of calcium and phosphorus to support a sturdy frame.



WATERPROOF COAT

The Labrador Retriever's skin secretes an oil that protects him from cold and water. Labrador Retriever 30™ is formulated with Omega 6 fatty acids for a healthy coat.

Breed standards

General Appearance

The Labrador Retriever is a strongly built, medium-sized, short-coupled, dog possessing a sound, athletic, well-balanced conformation that enables it to function as a retrieving gun dog; the substance and soundness to hunt waterfowl or upland game for long hours under difficult conditions; the character and quality to win in the show ring; and the temperament to be a family companion. Physical features and mental characteristics should denote a dog bred to perform as an efficient Retriever of game with a stable temperament suitable for a variety of pursuits beyond the hunting environment.

The most distinguishing characteristics of the Labrador Retriever are its short, dense, weather resistant coat; an "otter" tail; a clean-cut head with broad back skull and moderate stop; powerful jaws; and its "kind," friendly eyes, expressing character, intelligence and good temperament.

Above all, a Labrador Retriever must be well balanced, enabling it to move in the show ring or work in the field with little or no effort. The typical Labrador possesses style and quality without over refinement, and substance without lumber or cloddiness. The Labrador is bred primarily as a working gun dog; structure and soundness are of great importance.

Size, Proportion and Substance

Size – The height at the withers for a dog is 22½ to 24½ inches; for a bitch is 21½ to 23½ inches. Any variance greater than ½ inch above or below these heights is a disqualification. Approximate weight of dogs and bitches in working condition: dogs 65 to 80 pounds; bitches 55 to 70 pounds.

The minimum height ranges set forth in the paragraph above shall not apply to dogs or bitches under twelve months of age.

Proportion – Short-coupled; length from the point of the shoulder to the point of the rump is equal to or slightly longer than the distance from the withers to the ground. Distance from the elbow to the ground should be equal to one half of the height at the withers. The brisket should extend to the elbows, but not perceptibly deeper. The body must be of sufficient length to permit a straight, free and efficient stride; but the dog should never appear low and long or tall and leggy in outline. **Substance** – Substance and bone proportionate to the overall dog. Light, "weedy" individuals are definitely incorrect; equally objectionable are cloddy lumbering specimens. Labrador Retrievers shall be shown in working condition well-muscled and without excess fat.

Head

Skull – The skull should be wide; well developed but without exaggeration. The skull and foreface should be on parallel planes and of approximately equal length. There should be a moderate stop – the brow slightly pronounced so that the skull is not absolutely in a straight line with the nose. The brow ridges aid in defining the stop. The head should be clean-cut and free from fleshy cheeks; the bony structure of the skull chiseled beneath the eye with no prominence in the cheek. The skull may show some median

line; the occipital bone is not conspicuous in mature dogs. Lips should not be squared off or pendulous, but fall away in a curve toward the throat. A wedge-shape head, or a head long and narrow in muzzle and back skull is incorrect as are massive, cheeky heads. The jaws are powerful and free from snippiness – the muzzle neither long and narrow nor short and stubby. **Nose** – The nose should be wide and the nostrils well-developed. The nose should be black on black or yellow dogs, and brown on chocolates. Nose color fading to a lighter shade is not a fault. A thoroughly pink nose or one lacking in any pigment is a disqualification. **Teeth** – The teeth should be strong and regular with a scissors bite; the lower teeth just behind, but touching the inner side of the upper incisors. A level bite is acceptable, but not desirable. Undershot, overshot, or misaligned teeth are serious faults. Full dentition is preferred. Missing molars or pre-molars are serious faults. **Ears** – The ears should hang moderately close to the head, set rather far back, and somewhat low on the skull; slightly above eye level. Ears should not be large and heavy, but in proportion with the skull and reach to the inside of the eye when pulled forward. **Eyes** – Kind, friendly eyes imparting good temperament, intelligence and alertness are a hallmark of the breed. They should be of medium size, set well apart, and neither protruding nor deep set. Eye color should be brown in black and yellow Labradors, and brown or hazel in chocolates. Black, or yellow eyes give a harsh expression and are undesirable. Small eyes, set close together or round prominent eyes are not typical of the breed. Eye rims are black in black and yellow Labradors; and brown in chocolates. Eye rims without pigmentation is a disqualification.

Neck, Topline and Body

Neck – The neck should be of proper length to allow the dog to retrieve game easily. It should be muscular and free from throatiness. The neck should rise strongly from the shoulders with a moderate arch. A short, thick neck or a "ewe" neck is incorrect. **Topline** – The back is strong and the topline is level from the withers to the croup when standing or moving. However, the loin should show evidence of flexibility for athletic endeavor. **Body** – The Labrador should be short-coupled, with good spring of ribs tapering to a moderately wide chest. The Labrador should not be narrow chested; giving the appearance of hollowness between the front legs, nor should it have a wide spreading, bulldog-like front. Correct chest conformation will result in tapering between the front legs that allows unrestricted forelimb movement. Chest breadth that is either too wide or too narrow for efficient movement and stamina is incorrect. Slab-sided individuals are not typical of the breed; equally objectionable are rotund or barrel chested specimens. The underline is almost straight, with little or no tuck-up in mature animals. Loins should be short, wide and strong; extending to well developed, powerful hindquarters. When viewed from the side, the Labrador Retriever shows a well-developed, but not exaggerated forechest. **Tail** – The tail is a distinguishing feature of the breed. It should be very thick at the base, gradually tapering toward the tip, of medium length, and extending no longer than to the hock. The tail should be free from feathering and clothed thickly all around with the Labrador's

short, dense coat, thus having that peculiar rounded appearance that has been described as the "otter" tail. The tail should follow the topline in repose or when in motion. It may be carried gaily, but should not curl over the back. Extremely short tails or long thin tails are serious faults. The tail completes the balance of the Labrador by giving it a flowing line from the top of the head to the tip of the tail. Docking or otherwise altering the length or natural carriage of the tail is a disqualification.

Forequarters

Forequarters should be muscular, well coordinated and balanced with the hindquarters. Shoulders – The shoulders are well laid-back, long and sloping, forming an angle with the upper arm of approximately 90 degrees that permits the dog to move his forelegs in an easy manner with strong forward reach. Ideally, the length of the shoulder blade should equal the length of the upper arm. Straight shoulder blades, short upper arms or heavily muscled or loaded shoulders, all restricting free movement, are incorrect. Front Legs – When viewed from the front, the legs should be straight with good strong bone. Too much bone is as undesirable as too little bone, and short legged, heavy boned individuals are not typical of the breed. Viewed from the side, the elbows should be directly under the withers, and the front legs should be perpendicular to the ground and well under the body. The elbows should be close to the ribs without looseness. Tied-in elbows or being "out at the elbows" interfere with free movement and are serious faults. Pasterns should be strong and short and should slope slightly from the perpendicular line of the leg. Feet are strong and compact, with well-arched toes and well-developed pads. Dew claws may be removed. Splayed feet, hare feet, knuckling over, or feet turning in or out are serious faults.

Hindquarters

The Labrador's hindquarters are broad, muscular and well-developed from the hip to the hock with well-turned stifles and strong short hocks. Viewed from the rear, the hind legs are straight and parallel. Viewed from the side, the angulation of the rear legs is in balance with the front. The hind legs are strongly boned, muscled with moderate angulation at the stifle, and powerful, clearly defined thighs. The stifle is strong and there is no slippage of the patellae while in motion or when standing. The hock joints are strong, well let down and do not slip or hyper-extend while in motion or when standing. Angulation of both stifle and hock joint is such as to achieve the optimal balance of drive and traction. When standing the rear toes are only slightly behind the point of the rump. Over angulation produces a sloping topline not typical of the breed. Feet are strong and compact, with well-arched toes and well-developed pads. Cow-hocks, spread hocks, sickle hocks and over-angulation are serious structural defects and are to be faulted.

Coat

The coat is a distinctive feature of the Labrador Retriever. It should be short, straight and very dense, giving a fairly hard feeling to the hand. The Labrador should have a soft, weather-resistant undercoat that provides protection from water, cold and all types of ground cover. A slight wave down the back is permissible. Woolly coats, soft silky coats, and sparse slick

coats are not typical of the breed, and should be severely penalized.

Color

The Labrador Retriever coat colors are black, yellow and chocolate. Any other color or a combination of colors is a disqualification. A small white spot on the chest is permissible, but not desirable. White hairs from aging or scarring are not to be misinterpreted as brindling. Black – Blacks are all black. A black with brindle markings or a black with tan markings is a disqualification. Yellow – Yellows may range in color from fox-red to light cream, with variations in shading on the ears, back, and underparts of the dog. Chocolate – Chocolates can vary in shade from light to dark chocolate. Chocolate with brindle or tan markings is a disqualification.

Movement

Movement of the Labrador Retriever should be free and effortless. When watching a dog move toward oneself, there should be no sign of elbows out. Rather, the elbows should be held neatly to the body with the legs not too close together. Moving straight forward without pacing or weaving, the legs should form straight lines, with all parts moving in the same plane. Upon viewing the dog from the rear, one should have the impression that the hind legs move as nearly as possible in a parallel line with the front legs. The hocks should do their full share of the work, flexing well, giving the appearance of power and strength. When viewed from the side, the shoulders should move freely and effortlessly, and the foreleg should reach forward close to the ground with extension. A short, choppy movement or high knee action indicates a straight shoulder; paddling indicates long, weak pasterns; and a short, stilted rear gait indicates a straight rear assembly; all are serious faults. Movement faults interfering with performance including weaving; side-winding; crossing over; high knee action; paddling; and short, choppy movement, should be severely penalized.

Temperament

True Labrador Retriever temperament is as much a hallmark of the breed as the "otter" tail. The ideal disposition is one of a kindly, outgoing, tractable nature; eager to please and non-aggressive towards man or animal. The Labrador has much that appeals to people; his gentle ways, intelligence and adaptability make him an ideal dog. Aggressiveness towards humans or other animals, or any evidence of shyness in an adult should be severely penalized.

Disqualifications

1. Any deviation from the height prescribed in the Standard.
2. A thoroughly pink nose or one lacking in any pigment.
3. Eye rims without pigment.
4. Docking or otherwise altering the length or natural carriage of the tail.
5. Any other color or a combination of colors other than black, yellow or chocolate as described in the Standard.

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www.akc.org/breeds/labrador_retriever/

Glossary

- Antioxidant:** substance protecting the body's cells from the harmful impact of free radicals
- Atopy:** allergy, a propensity to react to naturally occurring allergens like pollen and house dust in a hypersensitive manner
- Body mass:** proportion of lean mass and fat mass
- Cataract:** opacification of the crystalline lens
- Cruciate ligaments:** bands of connective fibrous tissue that serve to connect the femur to the tibia and that prevent one of these bones sliding onto the other (drawer motion)
- EPA and DHA:** unsaturated fatty acids of the omega 3 family that reduce the action of the immune system. They are used in the treatment of chronic inflammatory diseases.
- Epithelium:** tissue covering the body's surface and the internal cavities
- Free radicals:** molecules responsible for oxidization
- Glycemic index:** postprandial (post-meal) glycemia of various food stuffs. The glycemic index is a scale used in human nutrition to express the blood sugar level, thus helping diabetics to balance their diets.
- Keratin:** hair and skin protein
- L-carnitine:** amino acid that enables the transport of fatty acids to the interior of the mitochondrion
- Lutein:** natural antioxidant that acts in synergy with other nutrients like vitamins C and E or taurine to combat oxidative injuries
- Mitochondria:** elements of cellular cytoplasm responsible for the production of energy and the synthesis of certain proteins. Mitochondria convert fatty acids into energy
- Omega 3 fatty acids:** long-chain fatty acids with anti-inflammatory properties
- Omega 6 fatty acids:** unsaturated fatty acids, vegetable in origin, that positively impact the quality of the coat and the skin
- Osteoarthritis:** degenerative disease of the joints
- Pheromone:** secretion produced by an individual, perceived by and causing a reaction in another individual in the same space
- Seborrhea:** increase in the secretion of the sebaceous glands, accompanying various forms of dermatosis
- Sebum:** oily sebaceous gland secretion
- Taurine:** sulfur amino acid essential to the proper functioning of the heart and the eyes, also an antioxidant
- Unsaturated fatty acids:** fatty acids that contain double bond carbon atoms. The position of the double bond determines family membership: omega 3 for those in which the first double bond is at the level of the third carbon atom and omega 6 for the fatty acids in which the double bond is on the sixth carbon atom
- Zeaxanthin:** antioxidant of the carotenoid family present in a significant quantity in the retina of the crystalline lens

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A history of commitment to developing knowledge and respect for the needs of small, medium and large breeds.

1967: Launch of ROYAL CANIN by a veterinarian

1980: Launch of the first growth food for large breed puppies (AGR)

1988: Launch of the veterinary ranges

1990: Launch of the first diets to respond to the diversity of dog size (RCCI)

1997: Launch of the Size Nutrition program based on the dog's age, activity, and size

1999: Launch of:

- Starter, a unique kibble based weaning diet for dogs
- A sporting dog diet (Energy 4800™)
- A veterinary diet for the nutritional management of osteoarthritis in dogs (Mobility Support JS 21)

2000: Launch of a diet for giant breed dogs (Giant Adult 28™)

2001: Launch of a range of 13 veterinary diets (V Diet) including 2 hypoallergenic diets in Europe

2003: Launch of:

- Foods just for small breed dogs (MINI Canine Health Nutrition™) and Yorkshire Terriers (Yorkshire Terrier 28™)
- Foods just for large breed dogs (MAXI Canine Health Nutrition™) and breed specific foods (Labrador Retriever 30™ and German Shepherd 24™)
- Eight formulas dedicated for Professional Canine Breeders (Canine PRO)

2004: Launch of:

- Foods for medium breed dogs (MEDIUM Canine Health Nutrition™) including Bulldogs (Bulldog 24™)
- Small breed specific foods (Chihuahua 28™ and Poodle 30™)
- Food for very young large breed puppies (MAXI Babydog 30™)
- The first full line of therapeutic diets to help manage allergic skin disease including canine atopy (Limited Ingredient Diets, Hypoallergenic and Skin Support formulas)

2005: Launch of:

- Small breed specific foods (Dachshund 28™ and Shih Tzu 24™)
- Food for Boxers (Boxer 26™)
- A specialized formula, HT42d, for the reproductive bitch
- The first veterinary diet for the nutritional management of osteoarthritis specifically for large breed dogs (Mobility Support JS 21 Large Breed)

2006: Launch of small breed foods (MINI Beauty 26™, MINI Indoor Adult 21™ and MINI Dental Hygiene 24™)

2007: Launch of:

- MINI Toy Indoor Adult 25™
- MINI Indoor Puppy 27™
- Miniature Schnauzer 25™
- Golden Retriever 25™

2008: Launch of:

- Cocker Spaniel 25™

2009: Launch of:

- Pug 25™

2010: Launch of:

- Chihuahua Puppy 30™
- German Shepherd Puppy 30™
- Labrador Retriever Puppy 33™
- Yorkshire Terrier Puppy 29™

References

Skin and coat

1. Bond R., Essential Fatty Acids in Dermatology, BSAVA Congress 2001, Scientific Proceedings, p. 259-261
2. Carlotti D.N., Le Labrador : atopie, AFVAC-CBVSPA, 2002
3. Collective, Innovation and Nutrition Clinic, Focus Waltham-Royal Canin, 2003
4. Dunstan R et al., Age and breed related differences in canine sebum quality and quantity, *Veterinary Dermatology*, 2000, 11 (Suppl.1), 2
5. Grandjean D., Everything you need to know about Nutrients ..., Aniwa, 2002
6. Hand et al., Small Animal Clinical Nutrition, 4th Edition, 2000
7. Hillier A, Griffin C, The ACVD Task Force on Atopic Dermatitis : incidence and prevalence, Elsevier 2001, 147-151
8. Kwochka K., The Biology of the Epidermis, ESVD congress, 1995
9. Lloyd D., Optimizing skin and coat condition in the dog, Waltham Focus on Skin and Coat, April 1999
10. Marsh K., Effect of the combination of zinc and linoleic acid on skin and coat condition, Waltham Center for Pet Nutrition, 1998
11. Mason I., Lloyd D., Canine Epidermis and Stratum Corneum Studies, *Advances in Veterinary Dermatology*, Vol 2, 1993
12. McEwan Jenkinson D., Sweat and sebaceous Glands and their Function in Domestic Animals, *Advances in Veterinary Dermatology*, Vol 1, 1989, 229-251
13. Olivry T., Hill P., The ACVD Task Force on Atopic Dermatitis (VIII): is the epidermal lipid barrier defective ?, Elsevier, 2001, 215-218
14. Rees C. et al., Effects of dietary flax seed and sunflower seed supplementation on normal canine serum polyunsaturated fatty acids and skin and hair coat condition scores, *Veterinary Dermatology* 2001, 12, 111-117
15. Scott, Miller, Griffin, Small Animal Dermatology, 6th Edition, 2001, 51,574-601
16. Servet E., Scientific claim : Skin Barrier, Document interne Royal Canin, 2003
17. Sousa C., Marsella R., The ACVD task force on canine atopic dermatitis : genetic factors, Elsevier 2001, 153-157
18. Watson A., Waltham Center for Pet Nutrition, 2002
19. Weber M., Measure of water retention after a bath. Royal Canin research Center, 2003
20. Willemsse T., World Congress Proceedings, 2000, unpublished data

A natural predisposition to excess weight

21. Brand Miller J., International tables of glycemic index, *Am J Clin Nutr* 1995;62:871S-93S
22. Collective, Innovation in nutrition clinical, X-ray Waltham-Royal Canine, 2003
23. Grandjean D., Everything you need to know about Nutrients..., Aniwa, 2002
24. Hames B., Hooper N., Instant Notes in Biochemistry, Bios Scientific Publishers Ltd, 2000, p315-321
25. Hand et al., Small Animal Clinical Nutrition, 4th Edition, 2000
26. Markwell P, Obesity in the dog, *JSAP* (1990), 31, 533-537

A solid body and a heavy bone structure

- 27.** Collective, Innovation and Nutrition Clinic, Focus Waltham-Royal Canin, 2003
- 28.** Devlin P., Waltham Center for Pet Nutrition, 2002
- 29.** Duker-McEwan J., Breed schemes for heart disease, BSAVA Congress, Scientific Proceedings, 2003
- 30.** Grandjean D., cellular oxydative Stress in the dog: Consequences and nutritional prevention, UMES, ENVA, 2002
- 31.** Grandjean D., Everything you need to know about Nutrients ..., Aniwa, 2002
- 32.** Hand et al., Small Animal Clinical Nutrition, 4th Edition, 2000
- 33.** Heaton P., Role of Dietary Antioxidants to Protect against DNA Damage in Adult Dogs, American Society for Nutritional Sciences, 2002
- 34.** Innes J., Nutraceuticals in the management of joint disease, BSAVA Congress 2001, Scientific proceedings, p261-263
- 35.** Malet C. and Al, Epidemiology of the ruptures of the former cross ligament in the dog. Do there exist races at the risk? Retrospective starting from the study of 1000 cases, AFVAC-CNVSPA, 2002
- 36.** Obra R. et al., Exercise in healthy adult dogs increases plasma TBARS – an indicator of oxidative stress, The FASEB Journal, 1999, vol 13, no 4, 44-18

Visual and cognitive capacities

- 37.** Collectif, Innovation en nutrition clinique, Focus Waltham-Royal Canin, 2003
- 38.** Devlin P., Waltham Center for Pet Nutrition, 2002
- 39.** Grandjean D., cellular oxydative Stress in the dog: Consequences and nutritional prevention, UMES, ENVA, 2002
- 40.** Grandjean D., Everything you need to know about Nutrients ..., Aniwa, 2002
- 41.** Heath S., Behavior problems in the geriatric pet, BSAVA Manual of Canine and Feline Behavioural Medicine, 2002, p109-118
- 42.** Heaton P., Role of Dietary Antioxidants to Protect against DNA Damage in Adult Dogs, American Society for Nutritional Sciences, 2002
- 43.** Heaton P. and Al, ageing and the immune system, Waltham Center for Fart Nutrition, 2002
- 44.** Jacques P., The potential Preventive Effect of Vitamin for Cataract and Age-Related Macular Degeneration, Int. J. Vitamin. Nutr. Res., 69 (3), 1999, p198-205
- 45.** Lebrun D., Observation ground - to publish Encyclopaedia of Labrador, 2003
- 46.** Mertens P., The aging dog - a behavioral perspective, BSAVA Congress 2003, Scientific Proceedings, p148-152
- 47.** Obra R. et al., Exercise in healthy adult dogs increases plasma TBARS – an indicator of oxidative stress, The FASEB Journal, 1999, vol 13, no 4, 44-18
- 48.** Reinhart GA., Modulation of humoral and cell-mediated immune. Responses by dietary lutein in cats. Vet immunol immunopathol 2000 ; 73 :331-341.
- 49.** Servet E., Scientific Claim : Synergy Antioxidant Complex, 2003
- 50.** Taylor A., Hobbs M., Assessment of Nutritional Influences on Risk for Cataract, Nutrition, Vol 17, No 10, 2001, 845-857
- 51.** Vadurel A., Physiology and pathology of the sense of smell of the dog, Thesis, ENVN, 1995

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