

Dilute Labrador Explained Article

A dilute Labrador has all the same wonderful qualities as any other Labrador Retriever. They excel as well-rounded family pets, hunting partners, search and rescue workers, scent dogs, therapy dogs, agility competitors, dock diving fanatics and much much more.

The only difference between a dilute Labrador Retriever and the more typical “traditional” Labrador retriever is their coat color.

Coat color in dogs is determined genetically and there are several genes involved. At its most basic, Labrador Retrievers can be Black, Chocolate or Yellow.

In dogs, as in humans, genes occur in pairs. One gene is contributed by each parent. The resulting combination of genes, with some being dominant and some being recessive, determine what color the dog will be.

The two main players when it comes to the color of a Labrador Retriever are the “B” and “E” genes. Parents contribute a dominant (expressed as a capital letter “B” or “E”) or recessive (expressed as a little letter “b” or “e”) version of each of these genes to their offspring. Depending on what the dog inherits from both parents will determine its coat color.

- The “B” gene determines whether the dog will be Black or Chocolate. Dogs that inherit a dominant version of this gene (“B”) from either one or both parents will be black. If a dog inherits two recessive versions of this gene (“bb”), it will be chocolate.

- The “E” gene determines whether the dog will be Yellow. The only time this gene has an effect is when the dog inherits two recessive versions (“ee”) from its parents. When this occurs, the coat color of the dog will be yellow, regardless of the “B” gene.

There are other genes, some yet to be isolated from the DNA strand, that impact the shades of the base colors allowing the chocolate coat color to vary from light to dark and the yellow coat color to vary from creamy white to deep fox red.

But the gene that comes into play with dilute Labradors is another gene altogether called the “D” gene (or more officially, the Melanophilin or MLPH gene).

Like the Yellow color gene, the only time the “D” gene has an effect is when the dog inherits two recessive versions (“dd”) from its parents. When this occurs, the coat color of the dog appears diluted:

- Black appears charcoal or dusty black
- Chocolate appears silver or taupe
- Yellow appears champagne

So what is really happening? Does the “D” gene actually CHANGE the color of the dog? Are Charcoal, Silver and Champagne three OTHER colors of the Labrador Retriever?

No. The “D” gene does not change the color of the Labrador. A dilute Labrador is still a Black, Chocolate or Yellow Labrador Retriever (depending on what it inherited for the other genes).

What's really happened can only be seen under a microscope. When a Labrador inherits two recessive versions of the "D" gene ("dd"), its base color (Black, Chocolate, or Yellow) ends up being SCATTERED along the hair shafts instead of being laid down uniformly and solidly. To our less-than-perceptive eyes, what we see is a diluted base color!

Because dilute Labradors are genetically Black, Chocolate or Yellow, the American Kennel Club registers them as their TRUE color, instead of the color we perceive them to be.

REFERENCES:

<http://www.vgl.ucdavis.edu/services/dog/dilute.php>

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