



Chihuahua

Update

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Taking a Look at Merle Coat Pattern in Chihuahuas

When most people think of the coat pattern known as merle, the breeds that come to mind are Australian Shepherd, Shetland Sheepdog or even Dachshund, where the color is called "dappled." Merle coats are also seen in other collie-type breeds including Collie and Border Collie.

Over the past few years, merle Chihuahuas have started to appear, or reappear, with increasing frequency. They have been spotted everywhere from the show ring to online puppy ads, where the pattern is promoted as "rare" and pups carry a high price tag. The increasing prevalence of the merle pattern in Chihuahuas is the subject of discussion and debate both in the United States and internationally.

The AKC defines merle as a color pattern involving a dominant gene (the M or Merling Series) and characterized by dark blotches against a lighter background of the same pigment. In a recent article, Dr. Malcolm Willis

of the University of Newcastle Upon Tyne in Cramlington, North Umerlane, United Kingdom, describes the genetic composition that results in the merle coat color.¹

"Merle is a gene that causes patches of lighter color (usually grayish blue) to appear in the coat," he says. "There are two alleles that are termed M (merle) and m (non-merle) with merle coloring being dominant to non-merle. All breeds carry the merle gene but most have the non-merle (m) in duplicate and are thus 'homozygous for non-merle (mm)'. The Chihuahua does not have M, and all Chihuahuas should be mm."

C.A. Sharp, president

of the Australian Shepherd Health & Genetics Institute, explains, "The merle gene is not one that mutates spontaneously from the normal, non-merle version with any frequency."

More than a Color Question

"Merle is a beautiful pattern, but one needs to be careful when breeding for it," Sharp says. "Crossing two

merles will result in some of the puppies (statistically a quarter) having two copies of the merle gene. These puppies, which often have a considerable extent of white markings in the coat, may be deaf and almost always have an assortment of eye defects."

The most commonly seen eye defect is microphthalmia, or abnormally small, even tiny, eyes, Sharp says. "Iris defects are quite common and sometimes

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severe. There can also be serious defects of the retina and other interior structures of the eye. An experienced breeder can spot microphthalmia, however many of the other defects can only be identified by a qualified veterinary ophthalmologist using the proper equipment."

Australian Shepherd breeders avoid deafness, a condition that many scientists believe is linked to coat color in a number of breeds, by not breeding merle to merle, Sharp says.

Theories Abound

If Chihuahuas do not have the dominant M allele, how has the merle coat pattern developed in the breed?

Barbara Solinsky of Misty Morn Kennels, a breeder of top-winning Australian Shepherds for more than 30 years and now a breeder of top-winning Chihuahuas, believes that the merle coloration seen in Chihuahuas today comes from an effort to downsize the Australian Shepherd to develop a miniature and toy Aussie. Solinsky suggests that heavy line breeding of only the smallest dogs resulted in crossbreeding with a Chihuahua to reduce the size even further.

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Chihuahua Club of America Allows Merle in Breed Standard

After researching the genetics of coat color and consulting with scientists, researchers and representatives of other breed clubs that have the merle pattern in their breed, the Chihuahua Club of America (CCA) recently decided not to revise its more than 100-year-old standard to disqualify merle-patterned Chihuahuas.

The club developed a statement to address the merle pattern, provide guidance to members and place the issue into context along with other serious health conditions affecting Chihuahuas, which include luxating patellas and heart problems such as patent ductus arteriosus.

The CCA statement states:

1. It is most important that the color/markings/patterns of Chihuahuas be registered accurately.
2. It is possible that some serious health problems (hearing, vision, sterility, etc.) may result if merle-patterned dogs are bred to each other.
3. Testing/screening for heart, vision, hearing, patella, and other possible health problems is valuable for Chihuahuas.

For more information, you may visit the CCA Web site at: www.chihuahuaclubofamerica.com.

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Merle Coat Pattern

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"There is no merle Chihuahua," Solinsky says. "It takes two merle genes to produce a merle dog. I will argue that some of these dogs that are being called merle are not a true merle. It's a diluted color or pattern."

Kathy Smith, who has been breeding champion Chihuahuas for 18 years and is a member of the board of directors of the Chihuahua Club of America (CCA), recalls the first time she saw the merle pattern in a Chihuahua. "It was in the 1980s in California," she says. "I was looking for a puppy to add to my breeding program. At the time, I had the idea that I might want a blue or chocolate. When I visited one breeder, I was shown what I am quite sure was a merle puppy. Once you've seen the pattern, you remember it."

Smith did not see merle again until a few years ago and does know of at least one instance where a long-coated merle finished its AKC championship. "It can be difficult to tell on a long coat because it is harder to see the pattern," she says.

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KATHY SMITH, A MEMBER OF THE CCA BOARD OF DIRECTORS

In a recent survey, the CCA found that several of the club's longtime breeders have seen the pattern for many years. Recently, the British Chihuahua Club voted to ban the merle pattern from the show ring. In his article, Willis writes, "Most reputable breeders are against the gene, and it would be fair to say that it must have come in through a cross-ing, probably with Dachshunds."

Any Color Acceptable

The Chihuahua Club of America has conducted an in-depth study of the merle coat color in the breed, says CCA President Peggy Wilson. Since the breed's recognition by the American Kennel Club in 1904, the standard has stated that "any color — solid, marked or splashed" is acceptable. The recently revised standard of the the Mexican Chihuahua Club

reads, "All colours in all possible shades and combinations are admitted."

The CCA board along with a committee of members examined the merle pattern closely and decided not to recommend that the standard be changed to disqualify the color at this time. However, the club has issued a statement with recommendations for breeders on breeding and registering merle puppies. "It is extremely important for Chihuahua breeders to be able to specify the merle color pattern on AKC registrations," the statement says.

"The AKC has approved the CCA's request for its addition to our color/markings 'list' and has approved that owners may make a one-time color change for merles that were not registered as such," Wilson says.

Looking to Other Breeds

In studying the effects of the merle pattern on other breeds, "we discovered that although some refer to the merle color pattern as 'lethal,' scientists and geneticists generally do not," Wilson says. "We did find terms such as 'serious' and 'sub-lethal' when describing the possible problems of deafness, blindness and sterility."

The CCA statement suggests that members review information available on the Web sites of the parent clubs of Australian Cattle Dogs, Australian Shepherds, Cardigan Welsh Corgis, Collies, Dachshunds, English Cocker, Old English Sheepdogs, and Shetland Sheepdogs. "All contain information relating to merle patterning and breeding considerations," the CCA statement says. "Interestingly, some of these sites do not mention any color-related hearing or vision problems when discussing health issues."

Smith notes that she would like to see more research. "We have a lot of theories and rumors but not a lot of solid research into the effects of the merle gene on Chihuahuas," she says. "We do not yet know scientifically if just because the merle pattern works one way in Australian Shepherds or Shelties, it will work the same way in Chihuahuas."

One thing most agree on, however, is that it is best to avoid breeding two merles together. "If a breeder breeds two merles," Sharp says, "he must take responsibility for those double merle pups."

Long-Term Ramifications

No matter how conscientious the CCA and its members are to learn more about the long-term ramifications of the merle pattern on the breed, there are others who may not know or even

care about the health implications that may be inherent with the pattern.

Smith is concerned about indiscriminant breeding of merle Chihuahuas to fill the demand for unusual pets. "There are no more than 500 members of the Chihuahua Club of America, but there are thousands of people breeding Chihuahuas," she says.

In its statement on the merle pattern, the CCA says that the club "recognizes that, as with other health or conformation considerations, recommended breeding practices may have little effect on breeders who are not interested in the CCA, the AKC, or in breeding to the standard. However, the CCA constitution requires the club and its members 'to encourage

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and promote quality in the breeding of purebred Chihuahuas and to do all possible to bring their natural qualities to perfection."

Despite those who will continue to breed the merle pattern, Smith is confident that the parent club and its members will do what is best for the breed. "It is our responsibility to preserve and protect the health and welfare of Chihuahuas, that is No. 1, and I trust our breeders to have common sense."

"Addressing the merle color pattern has been a serious issue for the CCA," Wilson says. And it may be a long time before any conclusions about the effects on the Chihuahua breed will be known. ■

¹ Willis M. Time to Call a Halt. *Our Dogs*. 2005 (February 17).