



What Does WCF Say About Dominant Blue Eyes (DBE)

Summary of WCF Official Statement on DBE published on November 2025 and recent research findings on DBE

Voting result - 2024 General Assembly



“ Dominant blue eyes are not permitted in the show class - for registration only”

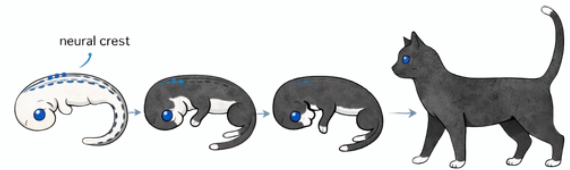
YES - 72 votes

NO - 8 votes

Abstentions - 1

The science behind DBE:

DBE is caused by mutation of the **Paired Box 3 (PAX3) gene**, which is crucial for the development of neural crest cells during embryogenesis. PAX3 is crucial for the migration of melanocytes from the neural crest to the iris. When PAX3 is modified, these pigment-producing cells fail to properly populate the iris. In addition, Neural crest cells can give rise to melanocytes (pigment cells), parts of the inner ear, and facial bones and cartilages. This means DBE is not just about eye colour - it affects multiple body systems simultaneously.



In DBE cats, melanocytes continue migrating during embryonic development resulting in minimal residual white - typically limited to small areas such as the toes, tail tip, locket, or lips, if present at all.

Inheritance pattern

Both phenotypic expressions including heterochromia and minimal white spotting are dominant with incomplete penetrance. Thus, it means that some cats from breeding with DBE may be *latent* and may show no minimal white spotting while eyes may not be blue yet still carries DBE genetically.

Why is DBE a concern

DBE has been found to be associated with **sensorineural deafness**, which refers to hearing loss resulting from damage to the inner ear or auditory nerve, meaning that the brain cannot properly receive sound signals. In humans, a PAX3 mutation is associated with **Waardenburg syndrome**. Cats with DBE (of some variants) often show Waardenburg-like symptoms like unusual facial features e.g. *wide-set eyes, a broad nasal bridge*, and in some cases, *fused eyebrows*. Skull deformities that cause the eyes to sit deeper in their sockets, potentially leading to conditions like entropion, have also been reported. Beyond these visible traits, the genetic instability linked to Waardenburg syndrome can lead to a range of severe developmental issues including *early fetal loss and smaller litters, kitten mortality, flat chests, cleft palates, cognitive delays, as well as, shortened tail and blindness*. The "dangerous" aspect is not limited to deafness but encompasses a systemic risk to the animal's well-being, making any characterization of these severe outcomes as "cosmetic rather than disabling" highly misleading and irresponsible.

Variants of DBE

There are 6 identified variants of DBE as shown in the table below. All of these variants can be tested genetically. Note: Genetic testing for different DBE variants depends on the availability and scope of individual laboratories.

| Variants | Breed | Homozygosity | Hearing test |
|---|-----------------------------|---|---|
| DBE ^{CEL} (Celestial) | Celestial, MCO, SIB, SPH | Lethal | No hearing issues (BAER tests) |
| DBE ^{ALT} (Altai) | British, SPH, PER, RAG, LYS | White or almost white (at risk of deafness) | No hearing issues (BAER tests) |
| DBE ^{RE} (Rociri Elvis) | MCO | Embryonic lethal | Case of deafness described, regardless of amount of white |
| DBE ^{AGO} (Agostino blue) | MCO | No data | No data |
| DBE ^{cdc} (Chinese Domestic Cat) | Chinese domestic cat, ABY | No data | No data |
| DBE ^{xHW} (XinHe Winnie) | Chinese domestic cat | No data | No data |

** Currently, multiple variants of DBE exist without specific DNA tests. For example, the Ermine Trace, Nadeya line, the Igor Azure Line, Cyrridwen Marusya line, Malvina line, Pillowtalk-Foreigner line, and Gosha line. These variants are affecting breeds like British, Scottish, Selkirk, Persian, Exotic, Maine Coon, Devon Rex, Munchkin, and etc. Therefore, in the absence of comprehensive research and clearly defined variants, DBE remains an area of much concern.

Cautions to breeders

Responsible breeding of DBE cats required the following:

- Avoiding DBE X DBE matings regardless of variant or line.
- For known variants with available DNA tests, non-DBE offspring should be genotyped before breeding to identify latent carriers
- In cases of unknown variants without DNA testing, breeders should avoid crosses between DBE and white spotting (W^s), dominant white (W), or colorpoint (C^s), as these can mask DBE expression.
- BAER testing is recommended for DBE cats to monitor hearing status.

