

Persistent Pupillary Membranes(PPM'S)

PPM's may or may not be a problem in a breed and/or individual dogs. PPMs are remnants of a fetal structure called the pupillary membrane. This membrane covers the pupil before an animal is born. It is part of the blood supply to the developing lens (the structure in the eye that focuses light on the retina). Normally the pupillary membrane completely absorbs before birth in foals and calves but is partially present and continues to disappear in neonatal dogs. Absorption may not be complete in puppies when the eyes first open and small strands or a web-like structure may be seen across the pupil. These strands normally disappear by four to five weeks of age. In some dogs these strands do not disappear and become PPMs.

PPMs may be found in several configurations in the anterior chamber. They may span across the pupil (iris to iris), from the iris to the lens, from the iris to the cornea, or they may float free on one end, only connected to the iris. In general, iris to iris PPMs cause no problems. They may be single strands or a forked structure. These PPMs may break and become less prominent as the puppy gets older, but they usually do not disappear completely. Iris to lens PPMs are more problematical. These PPMs cause opacities (cataracts) at the point where they are attached to the lens capsule. The cataracts do not usually progress and cause only minor visual deficits. Iris to cornea PPMs cause opacities on the cornea due to their ability to damage the corneal endothelium (the inner lining of the cornea). These opacities may be small or may be severe due to the development of corneal edema (fluid in the cornea). Severely affected puppies (with numerous strands) may be blind (they may improve as they get older). The strands may regress but do not disappear.

PPMs are found in many breeds of dog. In some breeds, PPMs are known to be hereditary. The Basenji is the most well known but it is also found frequently in Chow Chows, Mastiffs, Pembroke Welsh Corgis, or Yorkshire Terriers. Members of these breeds have been shown to produce offspring with blindness directly associated with their PPMs. In these breeds, the mechanism of inheritance is not known but breeding any of these dogs with PPMs is highly discouraged.

Diagnosis of PPM:

- a. One end of PPM floating in anterior chamber - no clinical significance
- b. Iris to lens - results in capsular cataract
- c. "Y" shaped iris to iris band - no clinical significance
- d. Single iris to iris band - no clinical significance
- e. Iris to cornea - results in adherent leukoma of the cornea