

Fur and Eye Pigment, by Dan Erz

Rabbit fur has two Melanin pigments: Dark Brown known as Eumelanin and Light Brown/Red known as Pheomelanin.

The iris of a rabbit's eye also has these same two pigments.

Melanin particles in blue eyes are smaller in diameter and sparser. In brown eyes, the melanin is very dense. They are on a dark background of the iris epithelium comprised of Eumelanin and Pheomelanin which is found at the base of the iris. The refraction is higher in the iris compared to the surrounding area of the eye, therefore the color particles in the iris can spread the white light out, giving which shows to us the observer as blue. This same phenomenon is why a stick looks like it is bent when placed partially in and partially out of water because water has a higher index of refraction than the air.

With age, there is a gradual increase in the size of the particles so the light is not dispersed as much. Hence the eyes start to look more brownish (this can be slight or severe). This is why some dilutes as they age develop darker eyes.

In brown eyes, the melanin is concentrated so the radius where absorption of light decreases, therefore it does not show the blue color. Instead, the yellow color of the Pheomelanin will appear causing the eyes to be brown.

This also explains why albinos (REW's) have red eyes. The C locus when recessive (cc), impedes all color (melanin) production. The base of the iris is melanin, so the iris appears red because it will reflect from the red blood vessels.

Blue eyes, such as seen in the blue-eyed-whites, have very little melanin in the Iris, but still has pigment in the epithelium. Therefore, all the shorter wavelengths of light are absorbed. Blue-gray eyes as seen on dilutes have some melanin in the Iris, which is why they appear to have a grayish discoloration to them.

Eye Colors



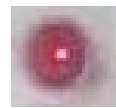
Brown



Blue



Blue Gray



**Red (Ruby Eye
Whites)**