

Light, You & Your Pet Bird

Learn about the components of light and how it helps your pet birds.

By Jessica Pineda

Windows obstruct UVA and UVB light and prevent them from reaching birds. Courtesy Lisa Bandit, Minnesota

Light is composed of three parts: visible light, UVA light and UVB light. Light moves in waves, reflecting off objects that our eyes absorb in order for us, and our birds, to see.

Visible Light

This term is used for the light we can see. We see all the colors of the rainbow and mixtures of those colors. When these colors combine they do not make black (like they would in paint) but the color we know as white. "White" light comes from the sun.

UVA Light

UVA light – or ultraviolet light -- is light that cannot be seen by humans unless we are equipped with special lights (such as black lights). However, birds can see UVA light.

UVB Light

UVB light is essential for humans, as it makes vitamin D in the skin. This helps absorb calcium and other minerals for healthy bone development. First however, it must go to our livers and then to our kidneys, changed into dihydroxy vitamin D or vitamin D3 during the process.

Birds' skin is protected by feathers, so how do they get their vitamin D? Dr. Greg Burkett, DVM, of the Birdie Boutique in North Carolina said it has to do with a bird's preening gland. "Birds have a unique way of producing vitamin D3. The oil for the preen gland contains a precursor to the vitamin. Birds spread the oil containing these precursors over the feathers. The precursor is activated and transformed into vitamin D3 by UVB light. When birds preen, they ingest the vitamin D3.

What about the birds that do not have a preening gland (like Amazons)? "Birds that do not have a preen gland can convert the precursor in the exposed skin of the feet, legs and face," Burkett said.

Vitamin-D deficiencies can take years before they show any symptoms in birds and in humans.

How We See

Now that we explored the different parts of light, let's talk about sight. We see light through our eyes via our retinas, which have two types of cells in each that helps us see colors. These are the rods and cones.

Rods help us see in dim lighting. Birds have very little rods in their eyes, which is why they cannot see well when it starts to get dark.

Cones are what help us distinguish the three primary colors (red, green and blue), which make up the entire color spectrum. Humans have three cones; birds have four. This fourth cone is sensitive to UVA light.

How Our Birds See

"The avian retina has four types of cones, the fourth being sensitive to UVA," Burkett said, "This gives birds a fourth 'primary color,' to make up their complete visible color spectrum. UVA plays a role in species recognition, mate selection and food recognition. For example, a fruit reflects a different wavelength of light when it is ripe. This allows a bird from a great distance to observe if the fruit is ready to eat. Realizing that UVA provides birds the ability to see a fourth color, without UVA, birds are experiencing a condition similar to color blindness in humans."