Cockatiel Color Mutations & Related Medical Conditions

by Linda S. Rubin

I am often asked if there are pre-existing medical conditions or limitations that may affect cockatiels with color mutations. The majority of color-mutation cockatiels are healthy, although sometimes smaller when first produced compared to more established colors. Here are some quick facts and historical notes.

As a general rule, color mutations that are recessive in reproduction, such as pied, recessive silver, fallow, whiteface and others, may initially appear smaller. This is not unusual in many species, especially in autosomal recessives that lean toward the diminutive. Sex-linked colors and dominant mutations are usually larger and stronger in comparison.

Experienced aviculturists selectively breed to build strong, healthy bloodlines for improved health, strength and hybrid vigor. Distant line-breeding, outcrossing and other husbandry techniques that require breeding to larger, normal-gray stock, sex-linked or dominant mutations aid in size, vigor and longevity.

The American pied color-mutation cockatiel, first produced in 1947, was initially smaller in size, as expected. However, over time, aviculturists increased body size to produce some lines that are now larger than normal-gray cockatiels. This achievement demonstrates that no abnormalities occurred in the American pieds and that breeding programs have a strong bearing on long-term results.

The recessive silvers, originally produced in Europe during the 1960s, were thought to have a genetic lethal factor that produced a number of blind chicks at birth. These original strains were either invigorated with new bloodlines or died out, because we no longer hear of this problem today.

The lutino mutation first appeared in smaller-sized cockatiels, and some lutino-mutation cockatiel birds experience vision problems expressed by a sensitivity to light. Both lutinos and the fallow mutation can carry an inherent flaw for genetic baldness behind the crest. This "fault" can be bred out of the offspring through correctly pairing birds over several generations and is not considered a medical condition.

In the late 1970s, a debate among avian veterinarians and aviculturists arose over the incidence of psittacosis (Chlamydia psittaci) in lutino cockatiels. Some veterinarians believed the lutino mutation was linked to the disease, because the lutinos with affected livers carried an obvious amount of yellow (carotenoid) pigment in their plumage. During this time, aviculturists were beginning to selectively breed for a more sought-after yellow-colored lutino. The new lutino pearl cross mutation produced a more yellow appearance, with vivid pearl lacings down the bird's neck and back. Male lutino-pearl cockatiels lost their yellow lacings upon adulthood, and so any claim of antibiotics ridding these males of yellow coloration (and psittacosis) might be arguable. This view is no longer held as viable.

The red- and plum-eyed birds, such as lutinos, fallows, recessive silvers and whiteface lutinos (aka "albinos"), can sometimes show a sensitivity to light because they have a clear, transparent membrane that permits us to see through to the back of the eye. The red color, in reality, is from red blood vessels sitting behind the eye. Because they have lost most or all of their darker pigment, they are more light sensitive, lacking the melanin that shields the eye in other cockatiels.

The recently developed dominant yellowface mutation has demonstrated problems with some females failing to incubate or sit on chicks full-term, often abandoning nests. If this is a genetic fault, it can be remedied by crossing affected birds to males with exceptional parenting skills.

Sometimes nutritional deficiencies are expressed by changes in color mutations. Leucism, the turning of darker feathers to white, can be caused by either genetic mutation or by nutritional deficiencies.

A study conducted at UC Davis by Tom Roudybush, MS, and his research team in 1985 -- funded in part by the American Federation of Aviculture Inc. — determined that insufficient levels of lysine (an essential amino acid used to build proteins) did not reduce gray melanin pigment as seen in poultry.

Instead, a follow-up study by team member Debbie Nearenberg, where riboflavin (vitamin B2) was manipulated, caused some feathers in cockatiels to turn white. The same B2 deficiency in poultry would have resulted in curly toe paralysis instead.

Also in poultry, a deficiency in choline (a nutrient in the vitamin B-complex family), resulted in perosis, or a slippage of the ligament of the hock joint. Interestingly, in cockatiels, it was found that choline deficiency resulted in the loss of dark melanin pigment in the flight and tail feathers of 30 to 40 percent of cockatiels tested.

These results implied that applying signs of nutritional deficiencies from studies in poultry to cockatiels might not be appropriate, because a riboflavin or choline deficiency in cockatiels can look like a lysine deficiency in poultry. Theoretically then, if these nutrients were added back into the diet, plumage would return to normal.

Breeding color mutations requires an understanding of selective breeding techniques to keep breeding birds in top shape in order to prevent undesirable traits, such as diminishing size, infertility, a compromised immune system or lethal factors. Always purchase color-mutation cockatiels from a reliable bird breeder with proven, vigorous stock to acquire a healthy, long-lived pet.

Linda S. Rubin has 35 years experience as an avian educator, speaker and panel judge, and is author of several books at www.CockatielsPlusParrots.com. She writes as the cockatiel bird breeder expert for BirdChannel.com, and serves the American Federation of Aviculture Inc. as specialty vice president, and the Cockatiel Foundation Inc. as founding president and genetics consultant.