

Iodine Deficiency/Goiter

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Many seeds are deficient in iodine, which is a building block of thyroxine (thyroid hormone) and is essential for normal thyroid gland function. For that reason, birds fed seed diets must receive supplemental iodine as a part of a balanced vitamin/mineral source added to the food or water. (Iodine appears to be provided in adequate amounts in formulated diets.) Iodine is especially important in budgies, which appear to be particularly susceptible to thyroid problems. The same condition has occasionally been reported in other species of birds.

Iodine deficiency can lead to thyroid dysplasia (a malformation of the thyroid gland), which is commonly termed goiter. Because the thyroid glands are located at the branching of the trachea into each lung, just above the heart, the enlarged, dysplastic glands put pressure on the trachea and syrinx (voicebox), with resultant displacement and breathing difficulties. A click, wheeze, or the incessant “squeaking” in a budgerigar, heard on both inspiration and expiration, will point to this condition. Any budgerigar presented for respiratory wheezing should be evaluated for thyroid hyperplasia. Other clinical signs can include vomiting and engorgement of the jugular vein, due to the partial occlusion of the thoracic inlet.

The development of thyroid dysplasia is gradual, and the condition worsens over time, with the respiratory noises becoming more noticeable as the thyroids enlarge. Quite often, the bird will be in extreme distress, sometimes forced to hold its head upright to facilitate breathing. Further, the condition can be complicated by secondary invasion of bacteria and fungus. The iodine deficiency may also produce some degree of hypothyroidism, which is manifested by weight gain, the development of fat deposits, lethargy, and poor feather quality.

Although thyroid dysplasia is mainly seen in budgies and occurs in rare occasions in cockatiels and canaries, the potential exists for all birds to suffer from iodine deficiency. The severity of the condition will dictate treatment: A mild case can be corrected by the addition of supplemental iodine in the diet; a severe case may require hospitalization and daily injections of sodium iodide until the condition resolves. The best manner of treatment, however, is prevention through the proper provision of trace elements in a formulated diet or the use of a supplement for birds on a seed diet.

Budgerigars with thyroid tumors may have clinical signs identical to goiter. However, while goiter will resolve quickly with iodine supplementation, thyroid tumors will not.

Adapted from *Essentials of Avian Medicine: A Guide for Practitioners, Second Edition* by Peter S. Sakas, DVM, MS. Published by the American Animal Hospital Association Press. (2002)