

UNDER THE SPOTLIGHT

VITAMIN A DEFICIENCY

Sources

Vitamin A (Retinol) is a fat-soluble vitamin, which is found in food from animal sources such as fish oil, liver, egg yolk and whole cream milk. Vitamin A may be used immediately by the body or stored in the liver for future use. It is destroyed by light and high temperatures.

Beta-carotene and other carotenoids are sometimes called “pro-vitamin A” as they can, if needed, be converted into Vitamin A in the intestine and liver. These substances are present in yellow and orange vegetables and fruit. As they are water soluble, they are lost from food if it is soaked in water for long periods and also are destroyed by high temperature and exposure to light. Foods high in carotenoids include: carrots, parsley, spinach, pumpkin, apricots and broccoli. Other suitable fruits include apple, pear, corn, raisins/sultanas/currants, endive, peach, cotoneaster, grape, figs, rock melon, honeydew melon, sprouted beans, kiwi fruit strawberries, raspberries, paw-paw, nectarine, plum, loquats and similar. Seeding grasses and branches from flowering native trees provide entertainment as well as nutrition

Uses

Vitamin A is essential for

- The health of the eyes, especially night vision
- The immune system, especially in preventing respiratory infections
- The bones, skin and lining of the mouth and intestines. Vitamin A promotes healthy growth and aids repair of injuries.

Symptoms of deficiency

- Dry itchy eyes causing swelling of the eyelids. In extreme cases corneal ulceration and blindness can occur.
- Infections, especially sinus and respiratory. Upper respiratory infections can present with sneezing and nasal discharge. Chronic

upper respiratory infections can lead to lacrimal sac abscesses, causing a movable lump in front of the eye. Sinus infections can also present as swellings around the eyes.

- Vitamin A deficiency can also lead to swellings and abscesses in the mouth, around the tongue, crop or nasal passages. Secondary bacterial infections of these are common.
- Skin affected by vitamin A deficiency is dry, flaky, itchy and heals poorly; changes which can lead to feather plucking. Skin ulceration may also occur.
- Beak and nail overgrowth and malformations.
- Infertility – Vitamin A is required for reproductive gland function.
- Scaly lumps around the eyes, on the beak, feet, legs and vent (similar appearance to that caused by the “scaly face and leg mite”

Cause

Seed diets are low in Vitamin A. A bird fed on an all seed diet will suffer from malnutrition generally but particularly from Vitamin A and calcium deficiency.

Prevention

1. **Formulated diets (i.e. pellets)**
2. **Fruits and vegetables.** Birds should be offered a varied diet that contains a wide range of greens, orange and yellow fruits and vegetables. If birds are not keen to try out these foods, get them used to eating seed from a certain bowl then add a small amount of fruit/vegetable to that bowl. A slight restriction in the amount of seed offered will encourage them to try the new foods
3. **Animal protein.** This may be provided as boiled egg, mince meat, Madeira cake or dry dog/or cat food containing liver or fish. The latter can be soaked overnight in water and mashed up for smaller birds such as finches (who will take it once they get used to it).

Adding vitamin supplements to drinking water is not effective. In cases of severe deficiency, injections of Vitamin A may be required.

References/Additional Reading

1. Cannon, M.: J. *A Guide to... Basic Health & Disease in Birds*. South Tweed Heads, 1996, Australian Birdkeeper.
2. Olsen, G. H. & Orosz, S. E.: *Manual of Avian Medicine*. St Louis. 2000, Mosby.