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## Biotin

Biotin is a cofactor in the carboxylation and decarboxylation reactions involved in the metabolism of lipids, glucose and some of the amino acids.

Biotin availability from ingredients varies greatly and this can cause problems in feed formulation.

## Clinical signs

The signs of biotin deficiency can be significantly influenced by other dietary factors such as the amount and type/quality of fat present in the diet.

The signs of deficiency in chicks and poults are slow growth, ruffled feathers, chondrodystrophy and a dermatosis of the foot pads and/or skin around the beak and eyes. The dermatosis of the foot pads without facial involvement of eyes and beak is an important economic problem in young broilers and turkeys. Biotin deficiency can worsen foot pad lesions caused by other factors such as wet litter. These latter conditions do not usually respond to biotin treatment.

Sudden deaths can be seen due to renal or hepatic steatosis, decreased plasma glucose, increased plasma free fatty acids and increased ratio of C16:1-C18:0 fatty acids in liver and adipose (fat) tissue in a condition known as fatty liver and kidney syndrome (FLKS). This can occur with a marginal biotin deficiency especially when the dietary fat level is low.

A role has been postulated for biotin in some 'sudden death syndromes'.

In hatching eggs biotin deficiency is associated with increased embryonic mortality in the first and third weeks of incubation.

Affected embryos are chondrodystrophic, characterised by small embryo size, parrot beaks, crooked tibia and shortened/twisted metatarsi. Sometimes a webbing of the feet is seen.

## Treatment

Replacement therapy can prevent, rather than correct, biotin deficiencies.

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Jansen

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Special Nutrients

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