



Leg and Foot Disorders in Domestic Poultry

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Introduction

Leg and foot problems in poultry can be a serious health and animal welfare problem, with consequences for production too. Most leg and foot disorders in poultry can be prevented through proper nutrition and management. However, some problems can be genetic. For modern meat-type birds such as broiler chickens and turkeys, the problems become very complex since the birds put on weight faster than they build their bone structure to support the weight. Here we consider the causes of these problems in poultry. By taking proper management precautions, you can prevent leg and foot disorders from ever occurring.

How nutrition can impact leg and foot problems

The first signs of leg and foot problems can be noticeable after hatch. Parent stock (the parent birds) need to be fed a well-balanced diet since the chicks' development depends on the nutrients in the egg from the hen. If the breeder's diet is deficient in vitamins and minerals, the chick's quality is off to a poor start. Nutritional deficiencies of Vitamin D3 causes soft bones and an increase in lameness in chicks. Riboflavin deficiency will cause a high incidence of curly-toe paralysis, straddle legs and chicks going down on their hocks.

Hatching and incubation conditions

Old Hatching Eggs – Eggs stored too long (10 days or more) before being set in the incubator can cause an increase in the number of crippled and weak chicks.

Humidity and Temperature – Eggs incubated with insufficient moisture tend to develop poorly, stick to the membranes and have a hard time hatching. "Dry sticks" or chicks hatching in these conditions are

more prone to crippling and other leg problems. Large fluctuations in temperature or humidity may also result in leg and foot problems.

Remember, any leg and foot disorders in young poultry may be genetic. This means that if you treat lame birds and breed with them, chances are likely their offspring have issues too.

Housing and management factors that play a role in leg and foot health

Slippery Floor Surfaces – Newspaper, wood, and other slippery surfaces cause excessive leg problems for all young poultry, especially waterfowl, game birds and feathered-legged poultry. Provide a soft absorbent litter that gives the birds good footing and traction. Textured paper towels, old cloth towels, or burlap work well for the first two weeks. After two weeks of age a 3-inch base of pine shaving, chopped straw or peanut hulls are recommended. Do not use materials like corn cobs or sawdust which become packed down and mold if it gets wet.

The biggest problem with slippery surfaces is straddled legs or splayed legs (Fig 1). Once the poultry gets to this point as shown below, the problem is nearly impossible to correct, although some home remedies are discussed on the internet.

Lack of Feed and Water Space - Crowding at feeders and waterers tends to put undue stress on the birds' legs. This can result in hock disorders. Hock dermatitis can be painful and should be monitored. A scoring system is shown in Fig 2.

Wet Bedding Material (litter)- Birds walking on damp bedding/litter tend to develop tender footpads. Both moisture and chemicals in the litter cause problems for footpads, hocks, and breasts. They are prone to sit on the wet litter leading to breast blisters

and swollen hocks with dermatitis. If the pads on their feet get badly cracked, they often get infections leading to bumble foot. Even without bumble foot, these footpad lesions (called footpad dermatitis; Fig 3) can become severe and painful. More information about footpad dermatitis can be found here: <https://www.pubs.ext.vt.edu/APSC/apsc-191/apsc-191.html>.



Figure 1. Straddled or splayed legs in chicks. Photo retrieved from: <http://www.poultrydvm.com/condition/splayed-leg>

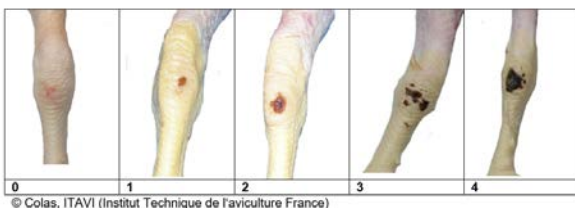


Figure 2. Hock dermatitis or hock burns can be caused by lack of space near feeders/waterers, poor litter quality, and is associated with high body weight. Severity can be scored with this scoring system (0-4 score). Photo retrieved from: <http://www.welfarequalitynetwork.net>

Bumble foot is a puss-filled core in the footpad, which swells and causes the bird to go lame. This is a very painful condition. It is not recommended to attempt to cut out the lesion. These types of invasive procedures should be performed by a veterinarian.

Bumble foot can also be a problem for birds raised on wire, gravel, concrete floors, or hard-packed ground. Waterfowl are especially prone to bumble

foot if they are raised on packed ground or in an area with a lot of weed stubble (weeds cut off with lawn mower).



Figure 3. A commercial-type broiler chicken with severe footpad dermatitis. Photo: Leonie Jacobs.

Consider changing the litter management (more frequent replacement and/or turning of litter, increase airflow, change feed, change waterer-type) and/or bandaging the feet to allow time to heal.

Improper Diet - Starter diets that are adequate for laying chickens do not do the job in meat chickens, turkeys, and waterfowl. Use a complete starter and grower mash balanced for the specific types of poultry whenever possible. People often feed whole grains to young poultry trying to save money. This can result in nutritional deficiencies that cause lameness. Diet can affect the consistency of defecation, which in turn may increase litter moisture.

Improper Equipment - Make sure any mesh wire brooders are small enough to prevent the young poultry from getting their hocks stuck in the wire, or even provide litter housing rather than wire caging.

Be sure doorways are large enough for the birds to move through easily. Make sure ramps have good traction for the bird. Use ramps and walkways so the birds do not crowd over a high sill or jump onto hard ground from elevated doorways.

Use of Perches - Do not use traditional perches for large meat-type birds, rather provide them with platforms or hay bales to perch on. Poultry are highly motivated to perch at night, so providing a perch is important to fulfill behavioral needs. This can also avoid injuries and damage caused by poultry attempting to roost up high, flying into the wall or the ceiling.

Disturbances - Keep children, pets and other fast-moving or noisy objects away from young birds. Forced exercise or sudden scares can result in pulled muscles, slipped joints & lameness. This is especially true with waterfowl. Never catch poultry, especially waterfowl, by the legs. Never run waterfowl or chase them. Waterfowl have especially tender legs and joints and can go lame very easily.

Ectoparasites - Scaly leg mites in chickens can cause lameness. Scaly leg mites bore under the scales on the legs of the chicken. The scales enlarge, get rough and become infected. If not treated early the bird may go lame. To treat, soak the bird's legs in an oil or cream to suffocate the mites. Treat every 3 to 4 days for 2 weeks. The old scales will then fall off over time and will be replaced with new scales.

Treatment of lame birds

Contact a veterinarian in severe cases for proper treatment or euthanasia. Some home remedies are suggested below.

If lameness occurs, remove the bird (and another for companionship and avoidance of stress due to isolation) from the rest of the flock and raise in a small pen to limit the bird's movements. Provide easy access to fresh water and feed. Allow the lame birds to get rest for a week or so and most times, they will recover. Do not put back with the rest of the flock until the lame bird can move easily and freely.

If the bird has badly straddled legs like shown earlier, you can tape the legs together with a harness so that the legs must stay in the normal position. If the bird does not show improvement after a week, it will most likely be best to have the bird humanely killed so it does not suffer.

Footpad problems may be treated by disinfecting the wound (e.g., with iodine) and bandaging the feet daily for approximately a week (Fig 4).



Figure 4. Feet may be cleaned and bandaged to treat footpad disorders. Photo: Leonie Jacobs

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