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# Marek's Disease



Marek's Disease is a viral tumor-causing disease of chickens. Marek's is distributed worldwide and is so common that if you have birds, they have been exposed to Marek's, regardless of whether they show symptoms or not. There are 4 different forms of Marek's:

- Cutaneous (skin form)
- Neural (nerve form)
- Ocular (eye form)
- Visceral (internal-organ form)

Marek's Disease is caused by 6 different herpes viruses that primarily affect young birds. The virus concentrates in feather follicles and is shed in dander. Marek's disease-causing virus particles can survive for months in chicken-house dust and litter.

## Transmission

Marek's is highly contagious and spreads by bird-to-bird contact, by contact with infected dust and dander, and by darkling beetles and mealworms that live in the chicken house, although the virus has no effect on the beetles or mealworms.

Other organisms common to chicken houses such as free-living mites, mosquitoes and coccidia do not transmit the disease. Chickens are most commonly exposed to Marek's by contact with residual dust and dander in previously infected houses, by aerosol (air) contamination from a nearby house, or by virus particles carried by personnel and equipment. The virus doesn't survive the incubation process well and is not spread by hatching eggs. Immune transfer from the hen to the chick provides some protection to the chick for the first few days of life.

## Signs

The signs and symptoms of Marek's Disease vary depending on the form of disease present.

**Cutaneous form:** Enlarged reddened feather follicles and white bumps on the skin that form brown crusty scabs.

**Neural form:** Characterized by one, all, or none of the following symptoms -

- Progressive paralysis, usually of the leg or wing, a typical leg-paralysis victim will have one leg extended forward and one leg extended back. A swelling of the sciatic nerve is the cause.
- Weight loss
- Labored breathing
- Diarrhea
- Starvation and death due to an inability to reach feed and water and to trampling by penmates.

### ***Ocular form:***

- Gray eye color
- Misshapen iris
- Weight loss
- Blindness
- Death

***Visceral Form:*** Tumors on internal organs including heart, ovary, liver and lung.

### **Morbidity and mortality**

Morbidity (number affected) in unvaccinated flocks can reach 60 percent. Vaccinated flocks fare better with less than 5 percent affected. Mortality is high in affected birds reaching nearly 100 percent over a 10-week period. Pullets are more likely to be affected than cockerels.

### **Diagnosis**

Diagnosis is derived from the flock history, symptoms and necropsy findings.

### **Prevention**

- Breed for resistance.
- Good sanitation and ventilation.
- Brood chicks separately from adults until 5 months of age.
- Keep turkeys with chickens (this may help the chickens with Marek's, but can lead to black head disease in the turkeys).
- Vaccinate all chicks at 1 day old; keep chicks from exposure until immunity has developed, about 7 days.

### **Treatment**

None. Cull affected birds. Some birds develop temporary paralysis that disappears after 1-2 days. They appear to return to normal, but frequently die from internal tumors a short time later.

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*Fact sheet by Tina Savage, UNH Cooperative Extension Agricultural Resources Educator in collaboration with Dr. Michael J. Darre, Professor of Animal Science and Extension Poultry Specialist, University of Connecticut, 8/08*

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