

Marek's Disease in Chickens

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photo: AAAP

Marek's Disease is by far one of the most common illnesses in small flocks and not treatable once the clinical signs have begun. Yet, it is one of the most preventable illnesses out there. There has been much discussion and misinformation about Marek's Disease. So here are some clarifications concerning this disease.

Marek's Disease affects chickens and is caused by a chicken herpes virus. It will not make people sick. Like many herpes viruses, once an animal becomes infected, it will be infected **for life**. Not all infected birds however, will get sick. The percentage of clinically sick birds in a flock depends on the strain of virus (some virus strains are more virulent than others) and the breed of bird. Leghorns and light egg-type breeds tend to be more vulnerable to disease than meat type breeds. Silkies in particular, are highly susceptible to Marek's Disease. The percentage of illness and death in a flock can be anywhere from 1% to up to 50%. The clinical disease is typically seen between 6 weeks to 30 weeks of age. But Marek's Disease can develop in older birds as well.

Birds become infected with Marek's Disease by inhaling virus-laden dander. While the virus is easily killed in its purified form, the virus can live for years in the dander. This

means that once the disease enters a coop, the environment will most likely be contaminated for a very long time (months to years) even if all birds are gone.

Since infected birds are shedding virus, they will spread the disease as long as they are alive. If new, unvaccinated birds are brought into an infected flock, they will also become infected. This is especially true of young chicks which are highly susceptible. Even if new birds are quarantined away from the affected flock, caretakers can carry the virus-laden dander on hands, clothing, shoes, hair, and skin and spread the illness. One way that Marek's Disease is **not** acquired is through the hatching egg. Even if the breeders are infected, the chicks will hatch clean if they do not come into contact with the dander.

The symptoms of Marek's Disease depend on which tissues are attacked. In the classic form, Marek's Disease will cause inflammation and tumors in the nerves, spinal column and brain. In this form, birds will become paralyzed in the legs, or wings or may develop head tremors.



Paralyzed chicken with Marek's Disease

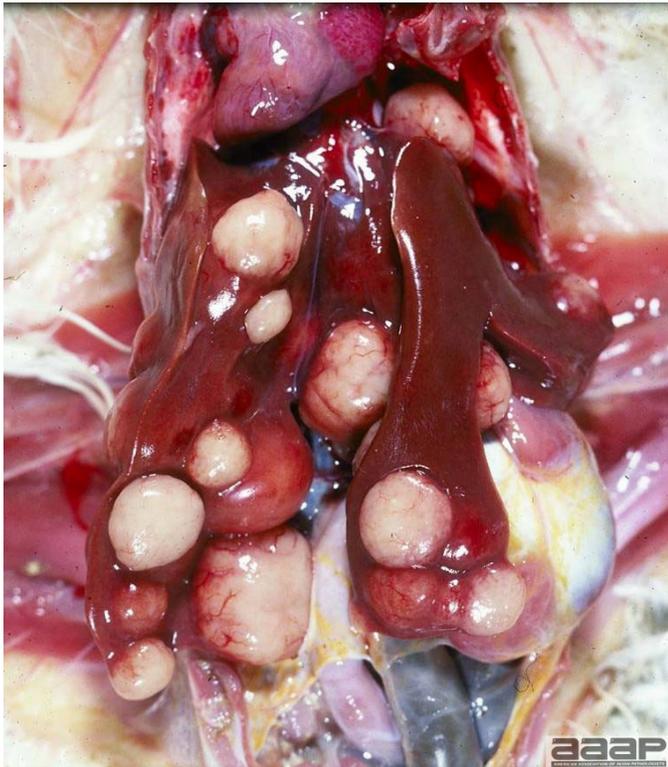
Affected birds eventually die of starvation or are trampled or get severe sores on their body. They almost never recover from this.

Marek's may also cause tumors in the internal organs, the eyes and even the skin. Affected birds lose weight, become emaciated and die.





Marek's Disease affected eye (picture on left)



Liver tumors seen with Marek's Disease

Diagnosis of Marek's Disease is by typical symptoms, necropsy and biopsy examination of the tissues. Most diagnostic animal labs can test for this disease in necropsy specimens.

So how can you prevent Marek's Disease in your flock? Vaccination of day old baby chicks is the most dependable way to prevent the clinical disease. **Birds must get the vaccine before they are exposed to the virus.** Then the birds need about 4-7 days for the vaccine to do its work. That means complete isolation of the chicks for at least this time. The chicks should be kept away from other birds and have a separate caretaker for them. If a separate caretaker is not possible, the chicks should be cared for first before caring for the others. Caretakers should shower and **change clothes if needed to go back and forth between age groups. Again, this is for at least 4 days.**

The best way to vaccinate the chicks is to have the hatchery vaccinate them. This is the preferable method if purchasing from a hatchery. If vaccinating at home, the vaccine handling must be done **exactly** as the label directs. This means following instructions on how quick to thaw, what temperature to thaw and using the vaccine no longer than 1-2 hours after reconstitution (as indicated on the label.). As hardy as this virus is in the feather dander, it is a live virus that dies rather quickly in vaccine form. Unfortunately, once the vaccine is reconstituted, it must be thrown out after two hours. It cannot be stored for later use as the vaccine is no longer effective. The vaccine **must be injected (usually under the skin)** to work. This can be tricky with tiny chicks, so having someone hold the chicks and another to inject is helpful. Other steps to get the best vaccine protection is to be sure the brooder is clean and disinfected before placing the chicks. Again, keep all dander and debris from the older birds away from the chicks for at least a week.

Common misperceptions about Marek's Disease:

1. **Mix turkeys and chicks together to prevent Marek's Disease so the chickens will be exposed naturally to turkey herpes virus.** This is not correct! Not only will the chickens not get Marek's Disease protection, but turkeys might be exposed to other common chicken diseases such as Mycoplasma and Blackhead.
2. **Don't vaccinate birds so that the survivors will become resistant.** Genetic disease resistance takes decades to develop and so far, has not been successful with Marek's Disease. If it were successful, one would think the commercial chicken genetic companies would have developed resistant chickens by now.
3. **Only vaccinate a few birds and the vaccine will leak and protect the other chickens.** This is incorrect. Every bird needs to get a full dose of vaccine **before** they become exposed to the actual disease-causing virus. This is the only way to achieve protection.
4. **Don't vaccinate birds because this vaccine is dangerous and might make the chickens ill.** If careful mixing of the vaccine in a sanitary manner is not followed, the birds may get a bacterial infection. Wash hands, use a sterile needle and avoid touching the needle with hands or any soiled object. Use only commercial vaccines. The companies making these vaccines are testing for potency and making sure the vaccine does not become contaminated with other diseases.

Unfortunately, there are only a few companies and veterinary supply outlets selling single vials of Marek's vaccine to small flock owners. The individual vials contain 1,000 to 5,000 doses of vaccine. This vaccine arrives refrigerated with cold packs as it must never be allowed to warm up while in storage. If it arrives warm, it is no longer effective, and the seller should be called to get replacement product. The vaccine must be refrigerated until it will be used.

The other type of vaccine, which is frozen and kept in liquid nitrogen tanks, is available for hatcheries. However, this type of product is not practical for most small flock owners. For more information on where to get vaccines or any other questions, feel free to email Dr. Eva Wallner-Pendleton at eaw10@psu.edu.

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Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

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Code: ART-5543