Avian Encephalomyelitis (AE) (Epidemic Tremors)

- A Viral infection of young chicks and laying hens, characterized by ataxia, tremors of head and neck and paralysis of young chicks and a sudden drop in egg production for 4-5 days in laying hens.
- Disease in turkeys milder than in chickens.
- Can also occur in quail.

**Epidemiology**

**Picornavirus**

- Transmitted through eggs laid by infected hens for up to 1 month.
- Lateral transmission also occurs in chicks.

**Incubation Period**

9 to 21 days
Embryos may be infected

**Course of Disease**

- Signs may be at hatch time or delayed for 2 to 3 weeks.
- Most commonly appear at 7-10 days.
Method of Spread

- Primarily by egg transmission
- Contact with infected birds.
- Vaccination – can not vaccinate birds in lay with this live vaccine because it will be passed in the eggs and affect the chicks.

Signs

- Chicks
  - Occurs in first 3 weeks of life
  - Ataxia, birds fall from side to side
  - Tremors of head and neck, especially when excited
  - Lateral recumbancy and paralysis
  - Opacity of the lens
  - Develops in 8-10 weeks

- Hens
  - Transient (4-5 days) drop in egg production
  - Egg production drops of 10-20% on the average but may be as great as 40%
  - Virus is shed in eggs during this time
Mortality

<table>
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<th>Chicks</th>
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<td>5-10% in most cases:</td>
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<td>may exceed 50%</td>
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<th>Laying Hens</th>
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<td>Negligible</td>
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Postmortem Lesions

NVL – Lesions are microscopic

Diagnosis

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<th>History</th>
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<th>Histopathology</th>
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| Brain, proventriculus, gizzard, and pancreas – lesions may not be visible in acute cases. Hold the birds until they are 2 weeks of age to allow lesion development. The most diagnostic lesions occur in the brain with central chromatolysis and perivascular cuffing. |

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<th>Isolation – AE – Antibody free eggs</th>
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| The virus may need to become adapted to eggs, so pass it 3-5 times. Lesions consist of stunted, curled embryos, and atrophy of leg muscles. |
Serology – ELISA  SN- test hens prior to egg production

Embryo susceptibility study

Differential Diagnosis

- Vitamin E – Selenium deficiency – CNS signs. Usually occurs in birds over 3 weeks of age.
- Marek’s – CNS signs (Usually seen in birds over 3 weeks of age).
- Newcastle – CNS signs
- Rickets – inability to move around
- Vitamin B1 and B2 – Thiamine deficiency – stargazing
- Mycotic Encephalitis – CNS signs (Occurs after 3 weeks of age generally).

Treatments

NONE

Prevention

- Vaccination of breeder hens or commercial layers. Passive immunity prevents disease in baby chicks
  - Killed vaccine
  - Modified live vaccine – before onset of production
- Don’t hatch eggs from viremic hens
Isolation of affected flocks

- Vaccinate birds after 7 weeks of age – often given with pox at 10 weeks of age
- Vaccinate laying hens with only killed vaccines
- Don’t expose chicks under 3 weeks of age
- 80-90% of all hens are immune to AE at housing with no symptoms visible.