Imaging of the Neonatal Brain
Objectives

• Review normal neonatal neuroanatomy
• Discuss common neonatal neuropathology using interactive cases
MRI

T1

T2

Anatomy/Pathology
Ischemia

DWI

ADC
SWI

Blood
# Germinal Matrix Hemorrhage

<table>
<thead>
<tr>
<th>Grade</th>
<th>Prognosis</th>
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<tbody>
<tr>
<td><strong>I</strong>: Confined to the caudothalamic groove</td>
<td><strong>Good</strong></td>
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<tr>
<td><strong>II</strong>: Extends into the ventricle but <strong>DOES NOT</strong> expand it</td>
<td><strong>Good</strong></td>
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<tr>
<td><strong>III</strong>: Fills and distends the adjacent ventricle * Secondary hydrocephalus is <strong>NOT</strong> grade III</td>
<td><strong>Poor</strong></td>
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Germinal Matrix Hemorrhage

Grade 1
Grade 1
Grade 2
Grade 3
Parenchymal Hemorrhagic Venous Infarction
1-week follow-up

1-month follow-up
2-months follow-up
| Parenchymal hemorrhagic venous infarct | Poor |

Prognosis
Periventricular Leukomalacia
Hypoxic Ischemic Injury

T2  DWI  ADC  SWI
Conclusion

- **Neuroimaging:**
  - allows for diagnosis and prognostication in the neonatal patient population