

Oral presentation

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## Immune responses to RNA virus infections of the CNS

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RNA viruses that infect the nervous system most often target neurons and are important causes of viral encephalitis. A successful outcome for the host from virus infection of the central nervous system requires the elimination of the virus without damage to these essential non-renewable cells. As a result, inflammatory responses must be tightly controlled and many unique mechanisms contribute to this control. Innate responses are rapidly activated; they control initial virus replication and spread and set the stage for the adaptive immune responses that lead to infiltration of the CNS with B cells, CD4<sup>+</sup> T cells and CD8<sup>+</sup> T cells. The outcome of this immune response may be control of virus replication and recovery, but viral RNA often persists. Alternatively, the outcome may be immune-mediated damage and fatal encephalomyelitis.