

Multiple Sclerosis Features and Mechanisms

MS is most common in young, white women. It usually presents in a patient's 20's and 30's, and most commonly affects northern Europeans. The exact mechanism of multiple sclerosis is poorly understood, but the development is known to have genetic and environmental components. This disease is associated with HLA-DRB1 and is an autoimmune demyelinating disorder affecting the white matter of the brain and spinal cord. This autoimmune disease is mediated by T-Cell inflammation.



PLAY PICMONIC

Features

More Common in Women

[Two women](#)

MS is more common in women than men, at about 2-3:1 ratio.

Presents in 20's and 30's

[\(20\) Twenty dollar bill and \(30\) Dirty](#)

Individuals with MS most often present in their 20s and 30s.

Northern Europeans

[North-compass Europeans](#)

MS is most common in individuals of Northern European descent.

Mechanism

Unknown mechanism, genetic factor

[Question-mark Mechanism with DNA-double-helix](#)

The mechanism for autoimmune demyelination is not completely understood; however, there is a genetic factor in addition to environmental.

HLA-DRB1

[HuLA Dr. with \(B\) Bee and \(1\) Wand](#)

There is an association with the HLA-DRB1 haplotype and MS.

Autoimmune Demyelination of CNS

[Auto-in-moon Demyelinating CNS-brain](#)

It is believed that T-Cells react against self myelin antigens leading to recruitment of macrophages and leukocytes. This causes demyelination of the CNS.

White Matter of Brain and Spinal Cord

[White Brain and Spinal Cord](#)

White matter of the brain and spinal cord are particularly impacted, as white matter is composed chiefly of long-range myelinated axon tracts.

T Cell Mediated Inflammation

Tennis-ball spreading Flames

It is believed that T-Cells attack self myelin, recruiting macrophages and leukocytes. Thus, it is hypothesized that T-Cells are likely responsible for autoimmune inflammation reactions in MS.