



# UNDERSTANDING MULTIPLE SCLEROSIS

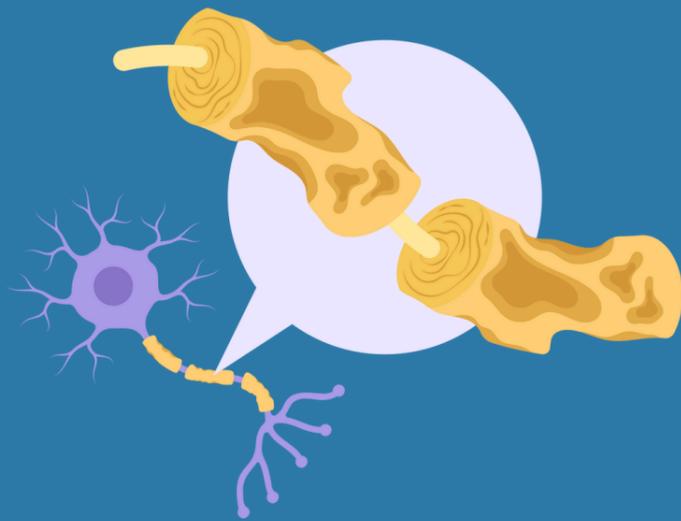


Multiple Sclerosis (MS) is an **autoimmune disease** that affects the central nervous system (CNS), which includes the brain and spinal cord.



**Multiple Sclerosis** occurs when the immune system mistakenly attacks the protective sheath (myelin) surrounding nerve fibers.

This damage disrupts communication between the brain and the rest of the body, leading to a wide range of symptoms.



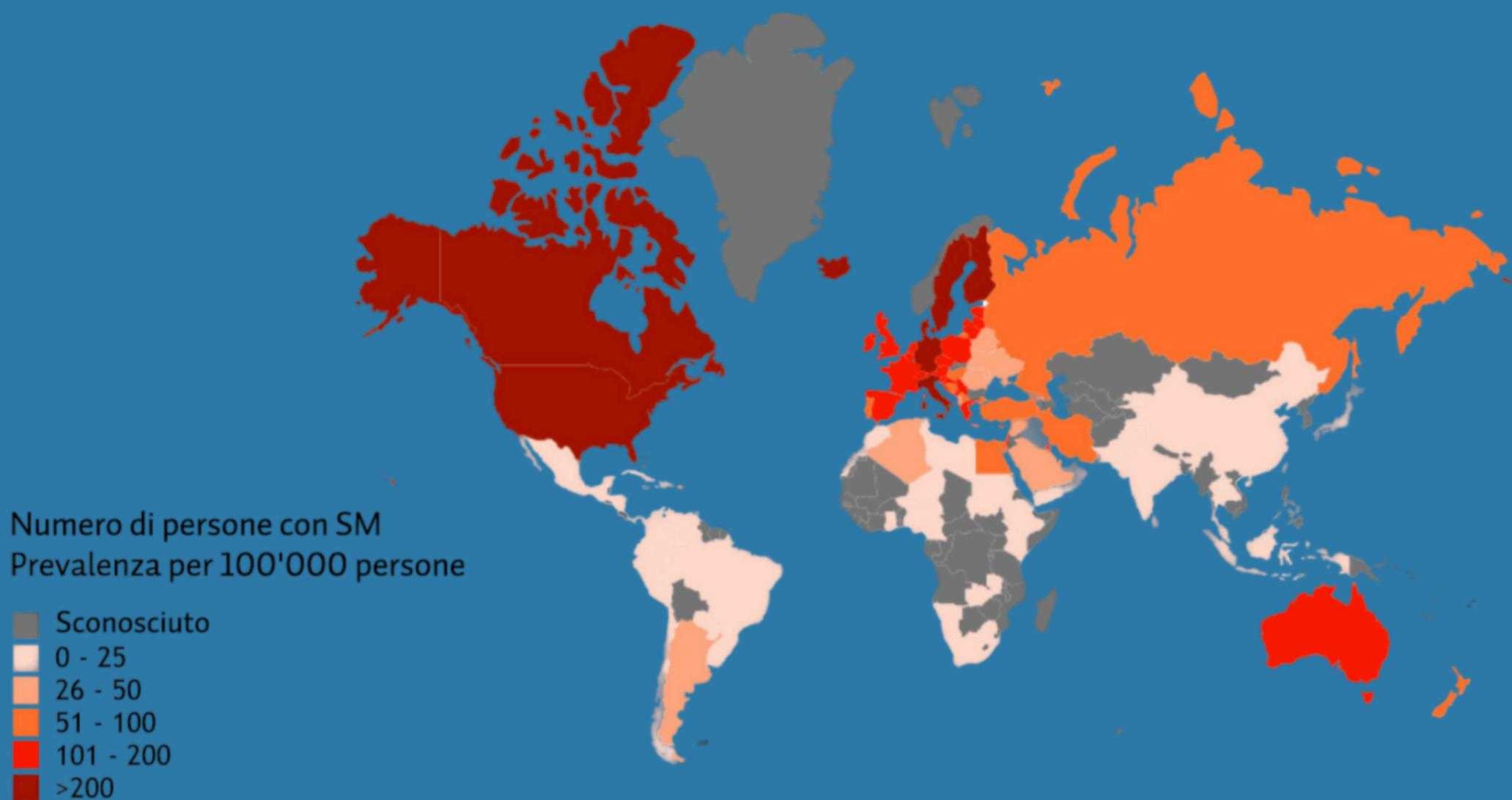
## Symptoms can be varied:

- Fatigue
- Numbness or tingling in the limbs
- Difficulty walking or coordination issues
- Vision problems (blurred or double vision)
- Cognitive changes (memory or concentration issues)

The MS symptoms  
heavily impact daily life,  
work, and personal  
relationships.



**MS** affects approximately **2.3 million people worldwide**, with a higher prevalence in regions farther from the equator.

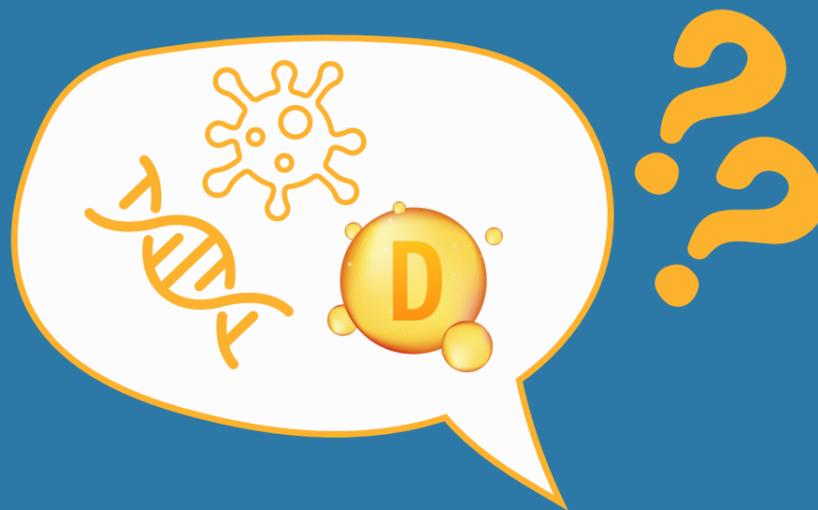


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# Causes of MS ?

A combination of factors: **genetic** and **environmental**.

Among the main environmental factors, infections with **Ebstein-Barr virus (EBV)** and **vitamin D deficiency** stand out.



## Who is affected ?

- Age - 75% diagnosed between **20-45 years**
- Sex - **women 3x** more affected than men
- Family history of MS



# What happens at the biological level when MS occurs?

**Inflammation and scar tissue (sclerosis)** disrupt the nerve impulse transmission and cause muscle weakness, coordination problems, sensory disturbances, and cognitive changes.



## How is MS diagnosed?

- Lesions or scars in the brain and spinal cord viewed by MRI
- Markers of inflammation in blood
- Specific proteins e.g. oligoclonal bands.



# What are the treatment options nowadays?

- **Disease-Modifying Therapies (DMTs):** to reduce the frequency and severity of relapses.
- **Corticosteroids:** to manage acute relapses.



# What are the treatment options nowadays?

- **Symptomatic Treatments:** Address specific symptoms, such as muscle spasms or fatigue.
- **Lifestyle Changes:** Regular exercise, a balanced diet and stress management can improve overall well-being.



Better biomarkers are desperately  
needed to improve quality of life  
for patients.

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The LIRM is a non-profit  
organisation dedicated to  
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