



# BEHIND-MS

## Unlocking the Mystery of MS: What You Need to Know about BEHIND-MS

BEHIND-MS stands for **Bridging EBV-Host Imbalance to Disease Onset and Progression in Multiple Sclerosis**

Can you imagine how it feels to be diagnosed with a disease that no one fully understands and not knowing why you are sick? There are 1.2 million people in Europe living with Multiple Sclerosis who hope to find answers soon! The BEHIND-MS is a joint European research effort that aims to answer this mystery.

Multiple Sclerosis (MS) is a disease that affects the brain and spinal cord. It often starts when a person is young, and it is more common among women. Even though there are treatments for MS that slow its progression, MS may evolve towards physical, mental and emotional challenges as it progresses, with some having major disabilities and debilitating symptoms.

The reasons behind this are still unclear. However, a recent discovery showed that the Epstein-Barr virus (EBV) is a major risk factor for MS, thus influencing the way forward on research in this field. From December 2023 and for 5 years, a group of experts through BEHIND-MS is aiming to understand **how the Epstein-Barr virus might be linked to Multiple Sclerosis**.

# What are we doing in BEHIND-MS?



Researchers from our consortium, from the Department of Neuroscience at the Istituto Superiore di Sanità in Italy

## The Enigma of MS

We're trying to solve the mystery of how cells infected by a virus, the immune system, and genes work together to cause brain and nerve damage in MS.

## The Question of Variation

A big part of the puzzle is figuring out why MS affects everyone differently. Some people have mild symptoms, while others have severe ones. By solving this, we hope to develop personalised treatments.

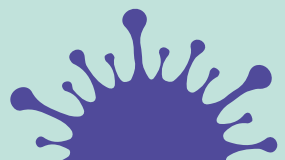
## The Immune System's Role

We are also investigating how the immune system fights the virus in people with MS and how this might lead to nerve damage. We're using artificial intelligence and experiments to solve this.

## The Targeted Attack

Finally, we are closely examining which parts of the virus are targeted by the immune system. This could give us crucial clues about how MS develops, especially because it's an autoimmune disease.

Each question brings us **closer to solving the overall mystery of MS** and finding better ways to treat it.





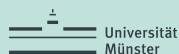
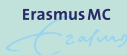
## How Can BEHIND-MS Help You?

Understanding how EBV and MS interact could help various stakeholders involved in managing MS! Throughout our project, we are engaging with **people with MS, their families, doctors, and other experts** to ensure that we are focusing on the things that matter most to them, including sharing and discussing our progress and results.

We are also identifying new biomarkers in the body, new factors that might increase the risk of MS, and new ways to study MS. This can lead to **improved tools and guidelines** for diagnosing, preventing, and treating MS. Our goal is to diagnose MS earlier, predict who might develop it, and create more personalised treatments.

Ultimately, BEHIND-MS aims to make it easier to understand the levels of risks for people with MS and manage the specific links to MS. This will help us find **more effective treatments** and **lessen the impact and burden of MS**.

## The BEHIND-MS partners



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