Why do MS symptoms change even without relapses?

Living with multiple sclerosis (MS) can come with a range of symptoms, which can get worse over time and take a toll on a person's quality of life. Common symptoms can include vision difficulties, mobility problems, and cognitive issues.

In people with MS:

experience a decline of physical function

are affected by cognitive dysfunction

face a decline of social function

experience an increased frequency of depression

Symptoms of MS can start early, often before they are noticed by healthcare providers.

How symptoms change across the types of MS

Relapsing-remitting (RRMS)

This is the most common type of MS, alternating between periods of symptom flare ups (relapses) and recovery (remissions). While it may be hard to notice, disability can still progress with this type either from the relapse or progression independent of relapse activity.

Secondary progressive (SPMS)

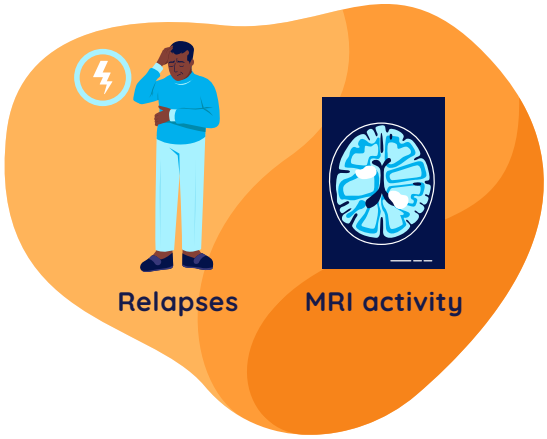
Many people with relapsing-remitting MS eventually transition to a type of MS where relapses happen much less frequently, but disability increases over time.

Primary progressive (PPMS)

Unlike the other 2 types of MS, people with primary progressive MS typically may not experience relapses early on. However, disability progression builds up over time from the start of MS.

Why does MS get worse without relapses?

Scientists have learned that there are 2 processes that impact how MS works. This could help explain why MS can get worse without recent relapses or MRI activity:



Acute process: This process has been well understood for years. It mainly causes relapses and MRI activity.

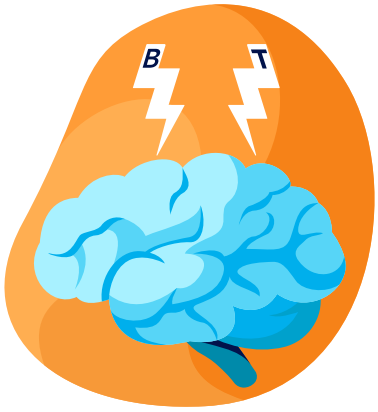
Chronic smoldering process: This process happens from the very start of MS and can continue over time, even if symptoms are not immediately noticeable. Over time, it can lead to symptoms of disability progression that affect daily life.

Even if relapses and MRI activity are under control, disability progression may still happen due to the ongoing chronic smoldering process.

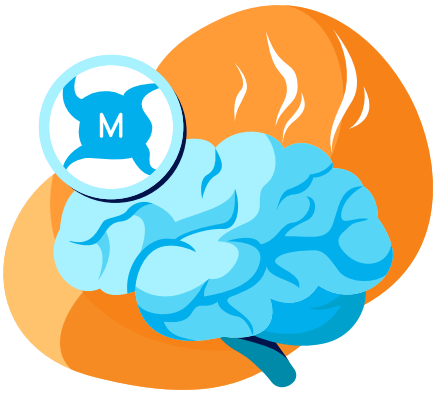
A new focus of MS research

Traditionally, MS care has focused on the acute process. However, the evolving science of MS is creating a greater understanding of how the chronic smoldering process contributes to MS progression.

Scientists are now exploring an enzyme called **Bruton's Tyrosine Kinase (BTK)** that plays a role in both processes:



In the **acute process**, BTK activates B cells in your bloodstream, causing damage that leads to relapses and MRI activity.



In the **chronic smoldering process**, BTK activates microglia in the brain and spinal cord. Activated microglia can damage myelin and lead to disability progression.

To date, most MS treatments have been able to effectively address the acute process, but many people with MS still experience disability progression. That means there's more to address when it comes to the chronic smoldering process. Understanding this process is inspiring a new era of MS research.

Watch a video about the science at RediscoverMS.com

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