



# **Current Therapeutics 1**

The current therapeutics available on the market for multiple sclerosis (MS) primarily focus on immunomodulation, which involves suppressing or modulating the immune system's activity. This approach aims to reduce the inflammation and immune response that contribute to the damage of myelin, the protective covering of nerve fibers in the central nervous system. It is important to note though, MS is not just caused by an autoimmune attack of myelin.

#### **Current Therapeutics 2**

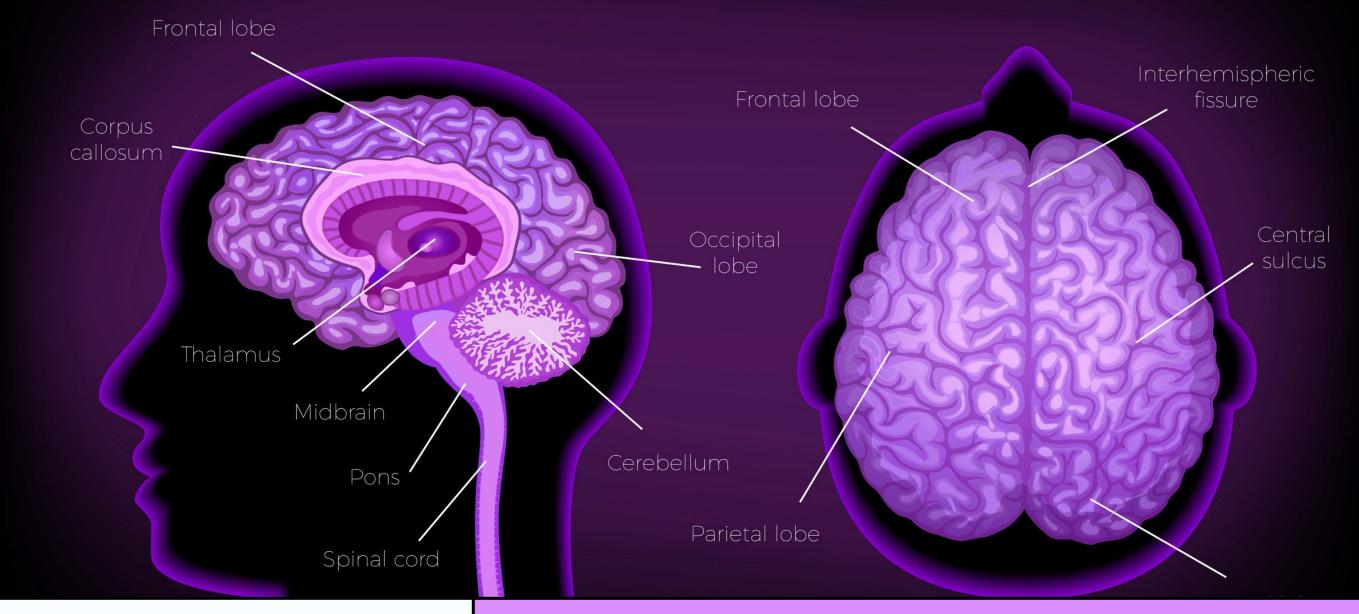
Although immunomodulatory treatments have shown promising results for a substantial number of individuals with Multiple Sclerosis (MS), their effectiveness is not universal and they are associated with certain limitations. These treatments aim to modify or regulate the immune system's activity, which plays a crucial role in the progression of MS. However, they might not comprehensively tackle all dimensions of the disease. The idea that MS is an underlying neurodegenerative disorder could be valid and is separate from the autoimmune component. Most approved therapies on the market today focus on the auto immune component. Novel therapies are needed to tackle the neurodegenerative aspect of the disease.



#### **Diversity of Disease Mechanisms**

Multiple sclerosis is a complex and heterogeneous disease, meaning that its underlying mechanisms can vary from person to person. While immunomodulatory treatments are effective for some individuals by controlling the immune attack on myelin, they might not fully address other factors contributing to disease progression, such as neurodegeneration and lack of myelin repair.

# Human Brain



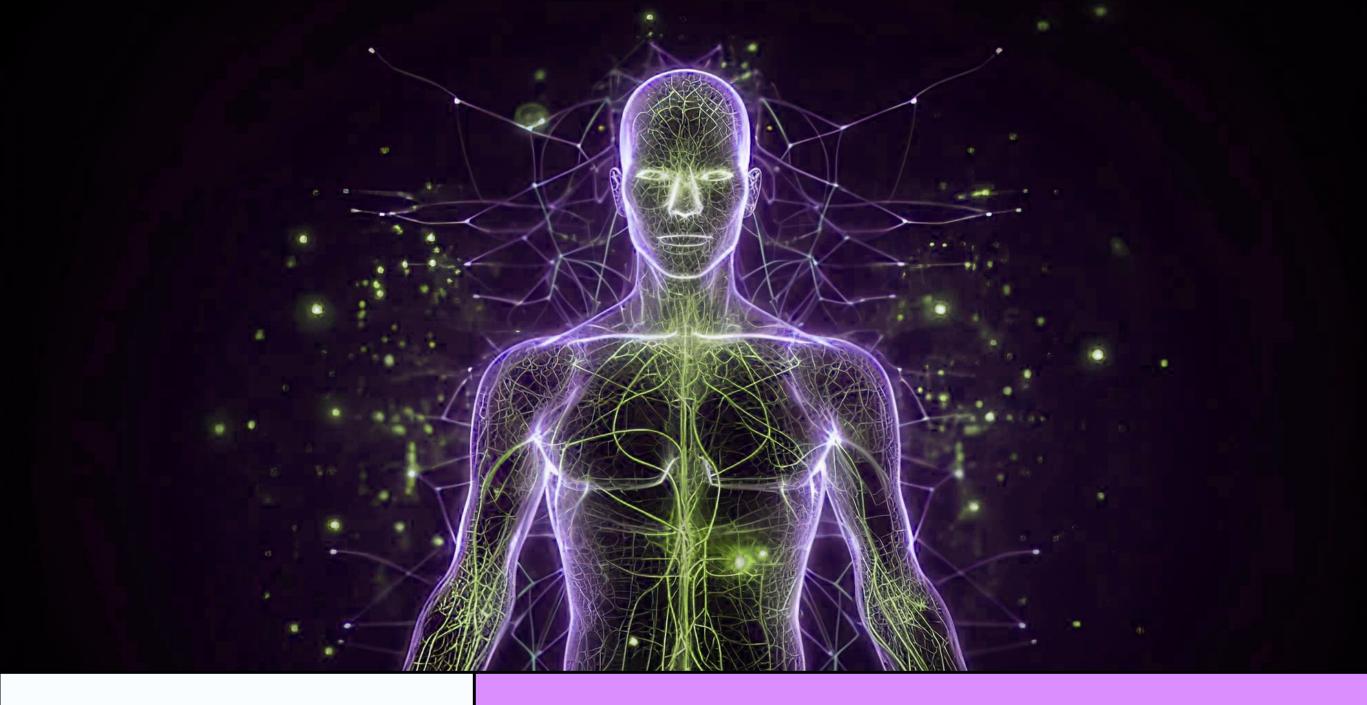
# **Limited Efficacy for Progressive Forms**

The available immunomodulatory treatments are generally more effective for relapsing forms of MS (RRMS) where patients experience episodes of symptom worsening followed by periods of remission. However, for progressive forms like Primary Progressive MS (PPMS) and Secondary Progressive MS (SPMS), where symptoms worsen steadily without remission, the current treatments are less effective.



# **Need for Neuroprotection and Repair**

In addition to managing inflammation, there's a growing recognition of the importance of neuroprotection and promoting myelin repair in MS. These aspects are not effectively addressed by the current immunomodulatory therapies. Therefore, there's an opportunity to develop treatments that go beyond immune suppression and focus on protecting nerve cells and promoting regeneration in all forms of multiple sclerosis, which is separate from the current landscape of drugs marketing the autoimmune component.



#### **Personalized Medicine**

As mentioned earlier, MS is highly variable between individuals. Developing personalized treatment approaches that consider a patient's specific disease profile, genetic factors, and response to treatment could potentially lead to more effective outcomes than a one-size-fits-all immunomodulatory approach.

### **Combination Therapies**

Future treatments might involve combining immunomodulation with other approaches, such as neuroprotective agents,remyelination-promoting drugs, or therapies targeting specific immune pathways. Such combination therapies could provide a more comprehensive and effective approach to managing the diverse aspects of MS.

#### Summary

In summary, the fact that the current landscape of MS treatment is largely dominated by immunomodulatory approaches indicates that there's room for innovation and expansion in the field.

The unmet needs in MS treatment include addressing progressive forms, focusing on neuroprotection and repair, adopting personalized approaches, exploring combination therapies, and catering to specific patient populations. This opens the door for research and development of novel therapies that can provide more comprehensive and effective solutions for individuals living with MS, including Secondary Progressive Multiple Sclerosis (SPMS), and Primary Progressive Multiple Sclerosis (PPMS).





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