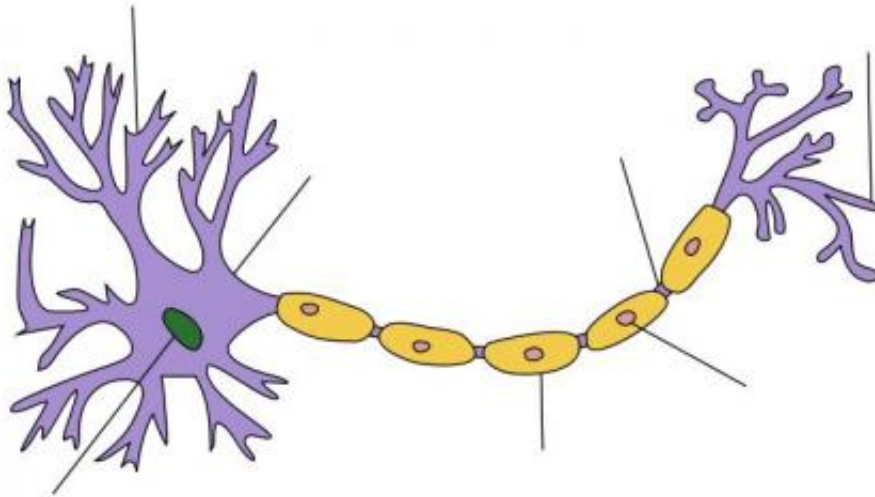


Neuroregeneration in multiple sclerosis: New participating cells and supportive drug identified

August 25 2022, by Susanne Dopheide



Myelin sheath. Credit: Wikipedia.

Regeneration in the CNS is a rare event and strongly limited to the replacement of so-called oligodendroglial cells and their electrically insulating elements of the axons, called myelin sheaths. This is also true for multiple sclerosis (MS).

The team of Prof. Patrick Küry, Department of Neurology, University Hospital Düsseldorf, describes in *eBioMedicine* that the corticosteroid

Medrysone is highly effective in promoting the replacement of lost oligodendroglial cells and also the restoration of [myelin sheaths](#) and thus the electrical insulation of axons. The regeneration effect by Medrysone was mediated via a completely unexpected cell type—astrocytes.

In their latest published research article led by first author Markley Silva Oliveira-Junior, a talented Ph.D. student from Brazil working in the Düsseldorf group, the scientists were able to show for the first time that astrocytes react specifically in situations where myelin structures are damaged and appear in many different subtypes.

Some of these [phenotypes](#) attempt to support local tissue repair activities, while others are more oriented toward more severe tissue destruction and even contribute additionally to lesion formation. Highly complex and dynamic behavior was observed, but this could in fact be directed by the Medrysone drug toward protective and regenerative cells and toward "taming" neurotoxic astrocyte populations.

These findings are unexpected and novel in the field of neuroregeneration in MS. Küry and team have been studying regenerative processes for many years with the goal of identifying new aspects, [cell responses](#), and pharmacological agents to improve [regeneration](#) efficiency.

More information: Markley Silva Oliveira Junior et al, Myelin repair is fostered by the corticosteroid medrysone specifically acting on astroglial subpopulations, *eBioMedicine* (2022). [DOI: 10.1016/j.ebiom.2022.104204](#)

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