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OTC drug may be key to multiple sclerosis

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Singapore: Two approved drugs, an antifungal and a steroid, may potentially take on new roles as treatments for multiple sclerosis.

According to a study published in *Nature*, researchers discovered that these drugs may activate stem cells in the brain to stimulate myelin producing cells and repair white matter, which is damaged in multiple sclerosis. The study was partially funded by the National Institute of Neurological Disorders and Stroke (NINDS), part of the National Institutes of Health.

Specialized cells called oligodendrocytes lay down multiple layers of a fatty white substance known as myelin around axons, the long "wires" that connect brain cells. Myelin acts as an insulator and enables fast communication between brain cells. In multiple sclerosis there is breakdown of myelin and this deterioration leads to muscle weakness, numbness and problems with vision, coordination and balance.

"To replace damaged cells, the scientific field has focused on direct transplantation of stem cell-derived tissues for regenerative medicine, and that approach is likely to provide enormous benefit down the road. We asked if we could find a faster and less invasive approach by using drugs to activate native nervous system stem cells and direct them to form new myelin. Our ultimate goal was to enhance the body's ability to repair itself," said Mr Paul J Tesar, associate professor, Case Western Reserve School of Medicine in Cleveland, and senior author of the study.

It is unknown how myelin-producing cells are damaged, but research suggests they may be targeted by malfunctioning immune cells and that multiple sclerosis may start as an autoimmune disorder. Current therapies for multiple sclerosis include anti-inflammatory drugs, which help prevent the episodic relapses common in multiple sclerosis, but are less effective at preventing long-term disability. Scientists believe that therapies that promote myelin repair might improve neurologic disability in people with multiple sclerosis.