One of the most common symptoms of Multiple Sclerosis (MS) is depression. A new model of depression is now emerging, which is based upon the inhibition of neural stem cell growth within the hippocampal dentate gyrus. Factors such as stress-related glucocorticoids that inhibit stem cell growth also induce depression.

As previously mentioned, it has been shown in animal studies that corticosterone significantly reduces the proliferation of oligodendrocyte precursors throughout the white and gray matter regions of the brain. Since oligodendrocyte precursors play a major role in remyelination, the use of anti-inflammatory therapies may actually perpetuate depression as well as brain injury. In contrast to the use of steroids for treating MS, stem cell therapies promote the proliferation of new oligodendrocytes, with the secondary benefit of alleviating depression. Generally, depression clears within 30 days following CD34(+) stem cell transplantation.