Transcript Details

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ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Advances in Cell-Based Therapy for MS

Announcer:
You're listening to NeuroFrontiers on ReachMD. On this episode, Dr. Mark Freedman will discuss the role of emerging cell-based therapies in multiple sclerosis care. He's a Professor of Medicine in Neurology at the University of Ottawa and a Senior Scientist at the Ottawa Hospital Research Institute, and he discussed this topic at the 2026 Consortium of Multiple Sclerosis Centers Annual Meeting. Here's Dr. Freedman now.

Dr. Freedman:
One of the first uses of the body's own cells was as a replacement. And the replacement was due to the fact that, if we believe we can no longer control MS by all the modifying medications, we need to use a very high-powered chemotherapy to literally destroy the immune system because it's broken. We don't know what the problem is. We can completely eliminate the cells that may be causing the problem, but that leaves a person without an immune system—in fact, without a hematopoietic system. And so we can, before that happens, derive stem cells from their bone marrow. That's their own cells. That's the autologous. We don't have to culture them; we just simply have them. And then after the chemotherapy is completed, we give them back their own stem cells with certain growth factors, and that reestablishes the immune system. The new immune system, unlike the old one that was broken and was removed, no longer attacks the central nervous system, causing MS, so it can lead to a complete arrest of the disease. In its most simple form, that's the success that we're looking for.

The whole idea of cell-based therapies is that you're using nature; you're using the body's own ability to heal and fix problems as opposed to using drugs, which never is the same because you're manipulating one aspect of a disease mechanism. And it doesn't always have the same ability to control things in everyone, even in the same person. Over time, as the disease changes, the, the drugs may not work as well. So, cell-based therapies call upon nature's own way of healing.

We are looking at many different types of cells. Mesenchymal stem cells or stromal cells can be derived from bone marrow, and they seem to have healing properties if given in a certain way. We also know that we can derive all sorts of very specific cells. So, there's neural stem cells that are being grown. These are cells that can be derived from a scrape of a cell from inside your cheek. You can direct it along a certain pathway and develop a neural cell. These neural cells are being explored, and there's a group in Italy that has been doing neural stem cells.

Announcer:
That was Dr. Mark Freedman discussing emerging cell-based therapeutic approaches in multiple sclerosis. To access this and other episodes in our series, visit NeuroFrontiers on ReachMD dot com, where you can Be Part of the Knowledge. Thanks for listening!