



**National  
Multiple Sclerosis  
Society**

# Congressionally Directed Medical Research Programs

**Request:** Provide \$10 million for the Multiple Sclerosis Congressionally Directed Medical Research Program (MS CDMRP) in FY 2017.

## What is multiple sclerosis (MS)?

- MS is an unpredictable, often disabling disease of the central nervous system.
- MS interrupts the flow of information within the brain, and between the brain and body.
- Symptoms range from numbness and tingling to blindness and paralysis.
- The progress, severity and specific symptoms of MS in any one person cannot yet be predicted.

## MS and military service

- More than 23,000 veterans with MS receive care through the Veterans Health Administration.
- According to a 2003 study in the *Annals of Neurology*, 5,345 veterans that served in Vietnam and the first Gulf War were diagnosed with MS that was deemed "service-connected."
- The relative risk for developing MS was significantly higher for this group of veterans than those who served in World War II and the Korean War.
- An advisory committee commissioned by the Veteran's Administration recently recommended further study into the potential link between combat service and increased risk of developing MS.

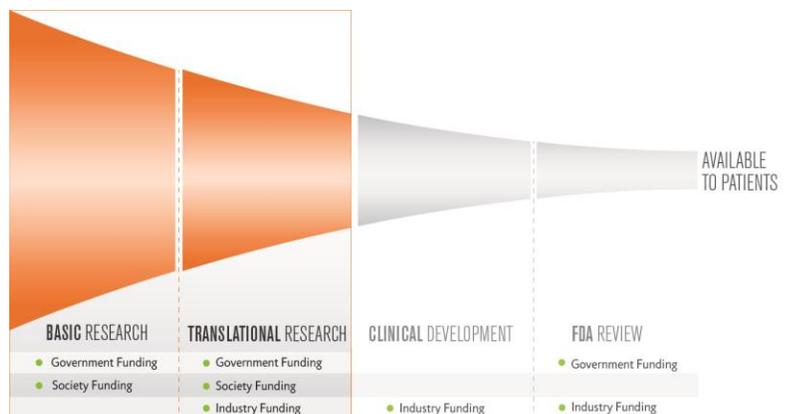
## Background on MS CDMRP

- The MS CDMRP received \$6 million in FY 2016.
- An average of less than 15% of research applications submitted to the MS CDMRP were able to be funded annually between FY 2009-2014.
- The CDMRP is a peer-reviewed program that funds important innovative research.
- The CDMRP is funded through the Department of Defense via the Defense Appropriations Act. Dollars for the CDMRP are added every year during the budget process by members of Congress, in response to requests by advocates.
- In FY 2009, Congress established a specific MS program within the CDMRP.
- The MS CDMRP encourages applications that address critical needs of the MS community and concentrate on: the biological basis of disease progression, risk factors leading to the prevention of MS, drug discovery and biomarkers for preclinical detection of MS.

Additional information can be found at:

<http://cdmrp.army.mil/msrp/pbks/msrppbk2014.pdf>

## CDMRP in the MS Therapy Pipeline





**National  
Multiple Sclerosis  
Society**

### **Promising Research Funded by the MS CDMRP: Understanding Disease Progression**



While the last several years have seen great strides in the treatment of relapsing forms of MS, progressive MS—which is responsible for the majority of MS-related disability—lags behind. Despite much research, lack of understanding of what causes relentless decline in function means we are unable to develop targeted treatment strategies for clinical trials in progressive MS. Patrizia Casaccia, MD, PhD of the Icahn School of Medicine at Mount Sinai, has discovered that the spinal fluid from people with progressive MS can impair the energy production of cultured nerve cells. Now, in collaboration with Columbia University and the New York Stem Cell Foundation, her team is conducting a clinical study to understand the differences between the composition of the spinal fluid from relapsing or progressive patients that may cause the differential effect on the energy-making organelles (i.e. mitochondria) inside the nerve cells. The overall goals of the study are to improve understanding of how to stop neurons from degenerating, establish personalized measurements that define a progressive disease course, and to identify personalized medicine therapeutic approaches for people living with progressive MS. “A better understanding of mitochondrial dysfunction in the neurons of those with progressive MS may hold the key to treating this progressive form of the disease,” says Dr. Casaccia. “This research is funded through a three-year grant from the CDMRP and we expect that it will help us move towards personalized medicine approaches.”

### **Promising Research Co-funded by the MS CDMRP and National MS Society: Novel Treatments for Nerve Repair**



Principle investigator Jeffrey A. Cohen, MD, worked with researchers at Cleveland’s University Hospitals: Case Medical Center and the National Center for Stem Cell & Regenerative Medicine to conduct a Phase I clinical trial to study the potential of mesenchymal stem cells to fight inflammation in MS and stimulate nervous system repair. Mesenchymal stem cells—different from embryonic stem cells because they are derived from bone marrow and other parts of the adult body—can evolve into different kinds of cells, including neurons, which are core components of the nervous system. These factors make mesenchymal stem cells a promising candidate for stopping MS activity and stimulating tissue regeneration. “Cell-based therapies show great promise to repair neurologic damage caused by MS and as a potential therapy for progressive disease,” says Dr. Cohen. “Our recently completed Phase 1 study of mesenchymal stem cell therapy in MS would not have been possible without support from the CDMRP and National MS Society. The results will provide the background for future expanded studies.”