
the CNS in mice with EAE, a model of MS. They are also looking at how specific gene alterations that cause the loss of particular signaling molecules affect the course of the disease.

This research could provide new insights about why MS is so variable, and lead to new ideas for treating specific stages of MS.

Katharine Whartenby, PhD

The Johns Hopkins University
Baltimore, MD

Area: Maryland/East

Term/Amount: 10/1/10-9/30/13; \$523,971

Paid by the National MS Society South Central Region

"Inhibition of FLT3 signal trasduction in APCs as an approach to MS therapy."

Evaluating a way to stop MS attacks by blocking specialized cells that make nervous system tissues a target.

In the central nervous system (CNS) of people with MS, the material that surrounds and protects nerve fibers, myelin, is destroyed by immune system cells. Without their protective myelin, nerve fibers do not conduct signals correctly, and they become vulnerable to destruction, resulting in the symptoms of MS. The immune system cells known as T cells are main players in the attack that destroys myelin, but T cells get clues about what to attack from cells known as antigen presenting cells (APCs).

Katharine Whartenby, PhD, is studying drugs that interfere with a process that allows APCs to give clues about what to attack. She is focusing on mice with EAE, an MS-like disease. Dr. Whartenby and colleagues have found that some of these drugs can reduce the number of APCs in the CNS, and that this makes EAE less severe. Now they are looking

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at details of how the drugs alter the interaction between APCs and T cells, and determining which ones enter the CNS easily. Potential advantages of these drugs are that they are given orally and are already in trials for other diseases, such as myeloid leukemia.

This research will shed light on whether a new treatment approach may hold potential for MS.

RESTORING FUNCTION

Rehabilitation

Rehabilitation regimens that can help people with MS achieve maximal physical, psychological, social and vocational potential have gained increasing acceptance in recent years. But to convince doctors and insurers that rehabilitation really does help, there needs to be scientific evidence that can only come from carefully designed and conducted studies.

The National MS Society has current, multi-year commitments of about \$6 million to support investigations focusing on rehabilitation in MS.

Francois Bethoux, MD

Cleveland Clinic Foundation

Cleveland, OH

Area: Ohio Buckeye/East

Term/Amount: 10/1/10-9/30/12; \$274,868

"Impact of a hip flexion assist orthosis on gait performance in multiple sclerosis patients" Evaluating a new device designed to aid walking in people with MS.

People with MS often have difficulty with walking and balance because of weakness and sometimes spasticity (stiffness) of their leg muscles. Weakness of the lower leg muscles that move the foot can be helped by a passive brace or "ankle foot orthosis." But the muscles that lift the leg and swing it forward (hip flexors) may also be weak and cause people to stumble or fall because the foot drags on the ground.

Francois Bethoux, MD, and colleagues have already completed a pilot study of a light weight and low cost device called a Hip Flexion Assist Device (HFAD) that uses a combination of straps and elastic bands to supplement the activity of weak hip flexors. The results of the pilot study suggested that the HFAD improves walking and leg strength, and is safe to use. In this new research project, Dr. Bethoux's group is evaluating the effectiveness of the HFAD in 88 people with MS. Half of the participants will wear the device for eight weeks, and the other half will not wear the brace (control group). Those in the control group will be given the brace and will be trained to use it at the end of the study. A series of tests will evaluate muscle strength, spasticity, and walking ability with and without the brace in both groups.

The data will be analyzed to determine whether use of the HFAD improves walking performance. They will also gauge usage

and satisfaction with the brace, and they will record potential side effects. This study will help us understand how the HFAD can be used to improve mobility in people with MS, and will help refine how such devices can be evaluated in a clinical trial. Results from this study will also be used to generate ideas for new active mobility

RESTORING FUNCTION

Health Care Delivery/Policy Research to Improve Care Standards

What if the cure were found today but insurers refused to pay for it? Access to high quality health care is one of many issues tackled by the Society's Health Care Delivery and Policy Research Program, providing data that can serve as the basis for influencing public policy and improving the quality of MS health care and the quality of life of people with MS and their families.

The National MS Society has current, multi-year commitments of about \$7.2 million to support 11 research projects focusing on health care delivery for people with MS.

Malachy Bishop, PhD

University of Kentucky

Lexington, KY

Area: Kentucky/SE Indiana/Southeast

Term/Amount: 10/1/10-9/30/12; \$275,718

"Specialized housing needs in multiple sclerosis: a comprehensive analysis" Focusing on specific housing needs of people with MS to help direct resources to better meet those needs.

Many people with MS experience a range of symptoms and may experience progressive disability. Some require relatively simple home modifications, such as ramps or grab