

improve
treatment



discover
a cure

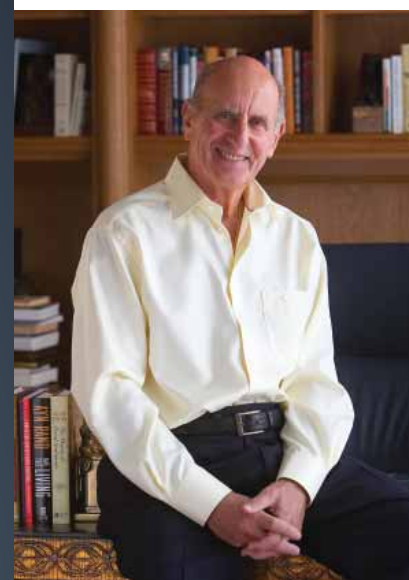


the FOUNDATION *for*
PERIPHERAL NEUROPATHY

Our mission is to dramatically improve the lives of people living with Peripheral Neuropathy.

The Foundation for Peripheral Neuropathy is focused on discovering more effective treatment options and finding a cure for Peripheral Neuropathy. The Foundation will fund collaborative medical research and clinical investigations and publish the findings to healthcare professionals and patients. The Foundation will strive to raise awareness of peripheral neuropathy through education to the general public and to healthcare professionals.

About the Foundation



The Foundation for Peripheral Neuropathy is a private foundation committed to fostering collaboration among today's most gifted neuroscientists and physicians who are dedicated to neuropathy research and treatment to develop new and effective therapies that can reverse, reduce and one day find a cure for Peripheral Neuropathy. It is our ultimate goal to utilize every means and opportunity to dramatically

improve the lives of those living with this painful and debilitating disorder.

Jack Miller is a prominent Chicago area entrepreneur and philanthropist and is the founder and former President/CEO of Quill Corporation. He is a very active philanthropist supporting a wide variety of community improvement efforts and also serves as chairman of the Foundation for Peripheral Neuropathy. Mr. Miller was inducted into Philanthropy World magazine's Hall of Fame in January, 2008.

Mr. Miller is one of the 20 million Americans diagnosed with peripheral neuropathy. Having suffered from neuropathic pain since 1995, Mr. Miller understands the challenges of living with neuropathy and has made a commitment to improve the lives of all individuals who suffer with this "hidden disorder." He has dedicated his time and resources to developing programs to educate and raise awareness about the disorder and to help identify potential cures and develop innovative treatments for Peripheral Neuropathy (PN).

In 1999, Mr. Miller began his foray to support peripheral neuropathy research by initiating a relationship with the University of Chicago and creating an endowed professorship, the Jack Miller Professorship for the Study of Neurological Diseases. In 2001, the Jack and Goldie Wolfe Miller Family Foundation helped establish the Jack Miller Center for Peripheral Neuropathy at the University of Chicago. The research center continues to do ground-breaking basic research.

In 2006, the Jack and Goldie Wolfe Miller Family Foundation expanded its efforts to seek treatment options for those suffering from PN by providing support for the new Jack Miller Center for the Treatment of Peripheral Neuropathy at the University Pain Center at Rush University Medical Center. To fund further collaborative research and treatment initiatives and to promote educational awareness, the Foundation for Peripheral Neuropathy was established in late 2007. To that end, we have recruited today's most gifted and dedicated neuroscientists from Johns Hopkins University and Northwestern Medical Faculty Foundation to join our distinguished team

In the United States and throughout the world, the incidence of peripheral neuropathy continues to rise, and our commitment to make a difference has never been stronger.

Peripheral Neuropathy

The peripheral nerves communicate information between the central nervous system (the brain and spinal cord) and the rest of the body. Sensory nerves are peripheral nerves that transmit sensory information from the body to the central nervous system. Motor nerves are peripheral nerves that transmit information from the central nervous system to the body. Peripheral neuropathy results when these peripheral nerves are damaged or destroyed and normal communication between the central nervous system and body is disrupted.

Peripheral neuropathy is the manifestation of many different conditions that can damage the peripheral nerves and is considered a neurological disorder rather than one distinct disease. The symptoms and the degree to which they are experienced will depend upon the underlying cause of an individual's neuropathy and on which of the peripheral nerves are involved. For some, symptoms may be barely noticeable, and go on for years without the patient realizing anything is wrong. For others, symptoms are debilitating and constant, often becoming unbearable at night.

These symptoms can begin gradually such as a tingling sensation or numbness that starts in the toes or the balls of the feet and then spreads upward. Eventually, a patient's skin may become so sensitive that the slightest touch is agonizing.

Diagnosing peripheral neuropathy is often difficult because the symptoms are highly variable. Early diagnosis and treatment may offer the best chance for management of symptoms and for prevention of further damage to the peripheral nerves. A thorough neurological examination is required and involves taking an extensive patient history, including: the patient's symptoms, work environment, social habits, exposure to any toxins, history of alcoholism, Diabetes, HIV or other infectious diseases, and family history of neurological diseases. Performing tests that may identify the cause of the neuropathic disorder and to determine the extent and type of nerve damage is also important for proper diagnosis.

Treatment

There are no treatments known today that can cure peripheral neuropathy. If the specific cause of a patient's neuropathy is known, further nerve damage can be prevented by eliminating the underlying cause, however, the focus of treatment is often on symptom control. Mild pain may sometimes be alleviated by analgesics sold over the counter and more severe pain can

sometimes be palliated with prescription drugs or by medical procedures. Other patients find that complementary and alternative therapies combined with other therapies help manage pain caused by peripheral neuropathy. Mechanical aids and physical or occupational therapy can help reduce pain and lessen the impact of physical disability. Although some advances have been made in the diagnosis and treatment of peripheral neuropathies, it is not uncommon for the cause of a patient's neuropathy to remain unidentified, and many patients continue to experience pain and disability despite available therapies.

In general, adopting healthy habits—such as maintaining optimal weight, avoiding exposure to toxins, following a physician-supervised exercise program, eating a balanced diet, correcting vitamin deficiencies, and limiting or avoiding alcohol consumption—can reduce the physical and emotional effects of peripheral neuropathy. Active and passive forms of exercise can reduce cramps, improve muscle strength, and prevent muscle wasting in paralyzed limbs. Timely treatment of injury can help prevent permanent damage.

Testing may include:

- Computed Tomography (CT scan) is a noninvasive, painless process.
- Magnetic Resonance Imaging (MRI) can examine muscle quality and size.
- Electromyography (EMG) involves inserting a fine needle into a muscle to compare the amount of electrical activity.
- Nerve Conduction Velocity (NCV) tests can precisely measure how quickly electrical impulses move along a nerve.
- Nerve Biopsy involves removing and examining a sample of nerve tissue, most often from the lower leg.
- Skin Biopsy is a test in which doctors remove a thin skin sample and examine nerve fiber endings.

The signs and symptoms of peripheral neuropathy may include:

- The sensation of wearing an invisible glove or sock
- Burning, numbness, tingling, or pain in the toes, feet, legs, hands, arms, and fingers
- Sharp, jabbing or electric-like pain
- Extreme sensitivity to touch, even light touch
- Lack of coordination, weakness or paralysis of the muscles
- Bowel or bladder problems
- Unusual sweating
- Experiencing a sharp fall in blood pressure upon standing, which may cause fainting or light-headedness

To learn more about tests and treatments visit our website at www.foundationforpn.org

About 20 million Americans suffer from this disorder. Over 100 types of peripheral neuropathy have been identified.

Some of the risk factors for the development of PN are:

Diabetes. More than half of patients with diabetes have some form of neuropathy. Those with diabetes for more than 25 years and/or are over 40 and have difficulty controlling their blood sugar levels are especially at risk.

Alcohol abuse. Excessive drinking of alcohol can affect the nervous system, causing numbness of the hands and feet.

Vitamin deficiency. A lack of certain vitamins, especially B-1 (thiamin) and B-12 makes peripheral neuropathy more likely. Pernicious anemia, which occurs when the body cannot absorb B-12 properly, often leads to peripheral neuropathy.

Immune system disorders. Autoimmune disease, such as celiac disease, Guillain-Barré syndrome, lupus or rheumatoid arthritis, shingles, or an immune system compromised by the human immunodeficiency virus (HIV) or AIDS are often accompanied by the development of peripheral neuropathic conditions.

Other health problems. Medical conditions, including certain types of cancer, kidney disease and liver disease, or those with family history of genetic diseases that produce peripheral neuropathic pain symptoms and conditions put an individual at risk of developing peripheral nerve damage.

Repetitive stress. A job or hobby that puts stress on one nerve for long periods of time increases the chances for development of peripheral neuropathy. Playing certain sports or musical instruments and/or using vibrating power tools or even crutches can put pressure on peripheral nerves and cause nerve irritation and damage.

Toxic substances. Exposure to some toxic substances can make one susceptible to peripheral nerve damage. These substances include heavy metals, such as lead, mercury and arsenic; organic solvents; and certain medications, such as those used to treat cancer or AIDS.

In many cases, especially in people over the age of sixty, the cause for a neuropathy remains unknown and the condition is termed "idiopathic" neuropathy.

To achieve our mission, the Foundation funds some of the most brilliant minds in neuroscience. Having recognized that no one laboratory has the compass to tackle the complex challenges of peripheral neuropathy, the Foundation organized a collaborative approach that will allow

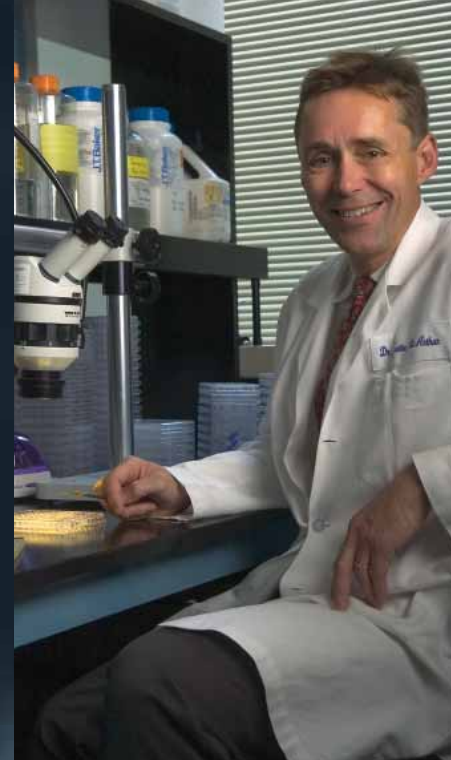
research



Translating basic discoveries into better treatments and a cure

researchers to achieve a high level of trust, openness and collaborative interactions marked by dynamic, interactive and intellectual and scientific relationships between them. Collaborative efforts will foster the exchange of new information and cutting-edge technologies with academic and industry researchers alike, we hope to increase the movement of new treatments into the clinic. Ultimately, the more that is known about the function and dysfunction of the nervous system, the more individuals can be helped to have a better future.

a touch of hope could do so much



*Justin McArthur, MD
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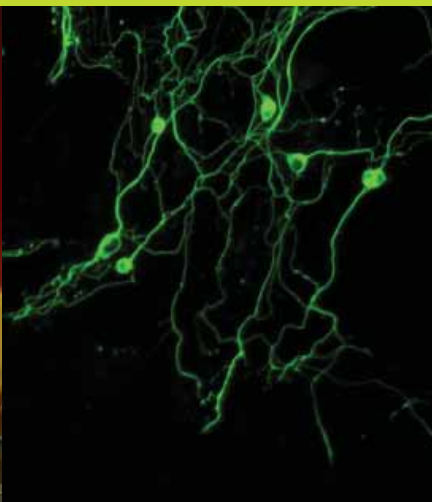
The Peripheral Nerve Center at Johns Hopkins has assembled a group of specialists that provide expertise in most nerve disorders, including diagnosis and both medical and surgical treatments. The Center was founded to provide the highest quality care for peripheral nerve diseases, including surgical options, and to generate new understanding of the diagnosis and treatment of nerve diseases through research. The goals of the Peripheral Nerve Center at Johns Hopkins University are to develop new therapies that will reverse peripheral neuropathies by preventing axonal degeneration and restoring function to patients with sensory neuropathies; develop novel diagnostic strategies, or biomarkers, to more accurately and sensitively diagnose, track and monitor therapy for sensory neuropathies; a special emphasis on identifying underlying etiologies of painful peripheral neuropathies that are largely classified as "idiopathic"; and provide a collaborative training environment for neuroscientists committed to neuropathy research to facilitate career development and skill acquisition.

To these ends, the Foundation has dedicated funds to assist the Center with the expansion of a variety of initiatives. The Foundation has agreed to expand the inventory of equipment available to the Peripheral Nerve Program including the procurement of a state-of-the-art electron microscope. In order to speed the pace at which clinical trials may be conducted, the Foundation has promised funds to develop dedicated clinical trial infrastructure specific for peripheral neuropathy research. The Foundation will also support two specific initiatives: screening and animal modeling of existing drugs for treatment of peripheral neuropathy and the regeneration of lost nerve cells, and the examination of the role of supporting cell changes in chronic peripheral neuropathies. The funding provided will help to lay the groundwork for an anticipated expansion and acceleration of research and translational discoveries in peripheral nerve disease.

Dedicated to generating a new understanding of diagnosis and treatment



Pipetting liquid media to provide nutrient support for neurons



Sensory neurons in a culture dish

"The funding will help to lay the groundwork for expansion and acceleration of research in peripheral nerve disease."

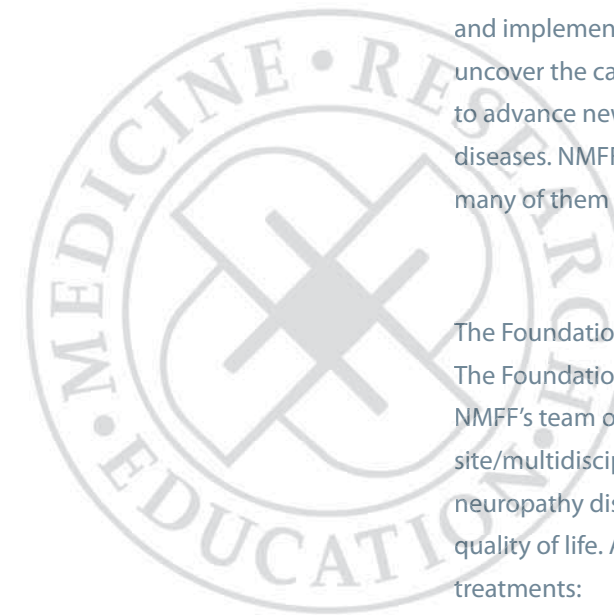


Jack Griffin and Ahmet Hoke at the Confocal Microscope, study nerve regeneration.

The highest quality care
through a single-site and
multidisciplinary approach

*Teepu Siddique, MD
Director, Neuromuscular Disorders Program*

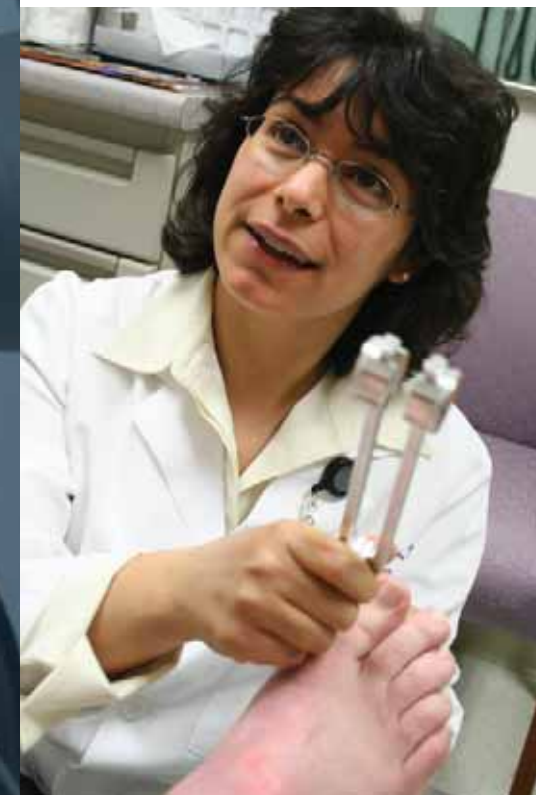
optimism for
improved
mobility



Northwestern Medical Faculty Foundation (NMFF) Department of Neurology provides treatment and research for a full range of neurological disorders. The mission of the Department is to provide the highest quality care and treatment for patients with neurological disorders. The department strives to develop and implement educational programs, to conduct basic and clinical research to uncover the causes and cures of central and peripheral neurological disorders, to advance new therapies, and to uncover the causes and cures of neurological diseases. NMFF physicians have areas of subspecialty interest in neurology and many of them are national leaders in their field.

The Foundation for Peripheral Neuropathy awarded NMFF funds to establish The Foundation for Peripheral Neuropathy Comprehensive Care Clinic. The NMFF's team of experienced neuromuscular physicians believes that a single-site/multidisciplinary approach to the diagnosis and treatment of peripheral neuropathy disease is the most effective for symptom control and improved quality of life. A comprehensive care plan would include the following treatments:

- An evaluation and management visit with neurologist to confirm the diagnosis and severity of the condition.
- A consultation with pain medicine specialist to address the patient's discomfort from refractory pain.
- On-site neurophysiology diagnostic testing (electromyography) to assess the degree of motor and sensory damage.
- Physical therapy support to help the patient compensate for compromised function.
- Nutritional counseling to teach patients how to mitigate further damage through diet.
- Social work support to address the mental and emotional ability to cope with the affects of the disease and to identify community resources that would be of assistance.
- Occupational therapy to direct life style changes that may make living with the disease more tolerable.



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pain management, a dream within reach



*Dr. Timothy Lubenow,
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*Dr. Asokumar Buvanendran,
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University Pain Center (UPC) is one of the largest pain clinics in the US. UPC and its affiliated Rush University Medical Center Department of Anesthesiology provides acute and chronic pain management to more than 10,000 patients annually. The Jack Miller Center for the Treatment of Peripheral Neuropathy has been established within the Rush Pain Center at Rush University Medical Center, and at other University Pain Centers (UPC) located in the Chicagoland area. The centers continue to build on more than 25 years of practice and research, developing and advancing new therapies and improving educational programs.

The Rush Pain Center faculty physicians, many of whom are nationally recognized experts in the field of pain research, bring extensive experience in providing successful treatment for a broad range of pain disorders. These physicians use a comprehensive, systematic, and multidisciplinary approach to the diagnosis and management of pain with the entire spectrum of interventional modalities, pharmacology, psychology, and alternative medical techniques. With the Miller foundation gift, UPC has created specialized clinical treatments and research programs for patients with peripheral neuropathy. UPC offers investigational therapies in collaboration with other centers to help uncover the mechanisms that underlie peripheral neuropathy and to improve the quality and breadth of the treatment choices and services available for patients afflicted with this disorder.



Building on more than 25 years of research, development and therapy for pain management

The Jack Miller Center for Peripheral Neuropathy was established in May 2001 as a part of The University of Chicago's Division of Biological Sciences. The Jack Miller Center has three inter-related missions: educating the public and healthcare professionals, providing state-of-the-art treatment for patients with peripheral neuropathy, and identifying causes and cures through basic and clinical research. The goal of the research component of the Miller Center is to promote multidisciplinary investigations into the cause, origin and development of peripheral neuropathies. Research includes experimental studies to determine the molecular cause and eventual cure of these disorders.

The Miller Center research groups are primarily taking a molecular genetic approach to obtain a better understanding of the normal function, as well as dysfunction, of the peripheral nervous system. Over the past decade, as the DNA sequence of the human and mouse genomes has become known, the techniques associated with the identification and isolation of mutant genes in the mammalian genome have been dramatically improved. Furthermore, remarkable advances have been made in the development of quantitative approaches toward the molecular analysis of complex biological systems.



MAKING A

difference

TOMORROW

Although scientists have made progress in understanding peripheral neuropathy and its many causes, a cure remains elusive. Only with continued funding will researchers be able to bring about the medical breakthroughs needed to ease the pain and suffering of the millions of Americans with peripheral neuropathy. But the benefits of such research do not end there. As scientists search for new treatments and a possible cure for peripheral neuropathy, they also shed new light on other myelin-related disorders such as multiple sclerosis and spinal cord injuries, which affect hundreds of thousands of individuals worldwide.

The mission of the Foundation for Peripheral Neuropathy can only be sustained through the generosity of people who share our vision to advance research and provide an improved quality of life for those living with Peripheral Neuropathy. With your contribution, you become an important part of our success and a special part of our family. We hope that you will share in our commitment to dramatically improve the lives of those living with peripheral neuropathy.

WE CANNOT ACHIEVE OUR MISSION WITHOUT YOU.

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For more information about other ways to support the foundation: please call (847) 883-9942 or email info@tffpn.org

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