An estimated 49 million Americans have disabling conditions so severe that they are unable to carry out the major activities of their age group, such as attending school, working, or providing self-care. Yet, there are unprecedented opportunities to explore the biomedical, behavioral, and social bases of chronic conditions and rehabilitative strategies. In 1990, congress established the National Center for Medical Rehabilitation Research (NCMRR) at the National Institute of Child Health and Human Development (NICHD), within the National Institutes of Health (NIH), to foster the development of scientific knowledge needed to enhance the health, productivity, independence, and quality of life of persons with disabilities.

NCMRR Contacts

To learn more about the NCMRR, its research priorities, and its funding and training opportunities, contact:

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You can also reach NCMRR staff via e-mail at:

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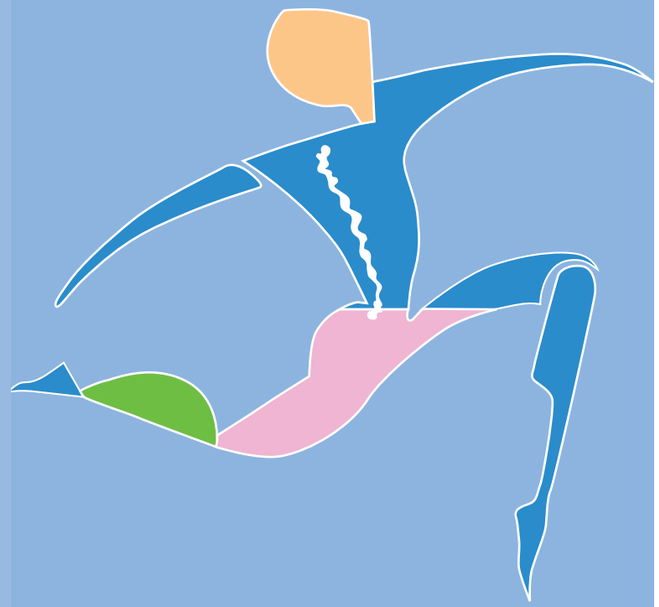
The National Center for Medical Rehabilitation Research



National Institute of Child Health and Human Development
National Institutes of Health
U.S. Department of Health and Human Services

The NCMRR provides support for basic and clinical scientists to conduct research on impairments and functional changes associated with chronic physical conditions, as well as on rehabilitative strategies to reduce disability, improve health, and increase participation. Relevant conditions include stroke, brain or spinal cord injury, orthopedic injuries, developmental and degenerative disorders, and other chronic conditions. Investigations supported by the NCMRR attempt to promote improvement at many levels: from reducing pathophysiology and physical impairment, to enhancing functional adaptation, to reducing disability and societal barriers. This improvement requires an integration of biological, engineering, and sociobehavioral approaches to understand chronic conditions, secondary implications, and the interaction of the individual with his/her environment. Further information about the NCMRR is available from the Center's Web site, at http://www.nichd.nih.gov/about/ncmrr/ncmrr.htm.

Medical rehabilitation services are most effective when placed on sound scientific footing. With increased effectiveness, more people with disabilities can return to their homes, communities, and jobs, rather than remaining in long-term care facilities. The end result is both improved quality of life for service recipients and long-term cost savings for society.

NCMRR Research Priorities and Projects

The Center's resources and activities focus on seven research priorities. Items listed include a description of the NCMRR priorities, as well as some of the current and past requests for applications (RFAs) and program announcements (PAs/PARs) related to each priority.

For a complete listing of current NCMRR-supported and recently funded research initiatives, please visit the NCMRR Web site, at http://www.nichd.nih.gov/about/ncmrr/funding.htm.

Improving functional mobility

This area includes research, for example, on wheelchair use, coordination and control of arm movements, therapeutic footwear, surgical and drug interventions for spasticity, body strength and exertion, constrained-use therapy, and improving respiratory control, to name a few. The NCMRR has supported the following research in this area:

- Molecular and Cellular Basis of Contractures for Design of Therapeutic Interventions RFA (HD-02-022)
- Women's Health in Sports and Exercise PA (HD-02-115)
- Training Materials on Surgical Amputations, Prosthetics, and Orthotics (SBIR/STTR) (HD-03-019)

Promoting behavioral adaptation to functional loss

This area includes research on psychosocial adjustments, health promotion, wellness, exercise, impact on caretakers and family members, special issues for women with disabilities, and geriatric issues, among other topics. The NCMRR has supported the following research in this area:

- Informal Caregiving Research for Chronic Conditions PA (HD-02-155)
- Cachexia: Research into Biobehavioral Management and Quality of Life PA (HD-01-109)

Assessing the efficacy and outcomes of medical rehabilitation therapies and practices

This area includes, but is not limited to, research on treatment for pain and depression, neuroimaging in stroke and traumatic brain injury, decision-making and access to care, and treatments to improve function after injury (e.g., respiratory function, motor control, gait). The NCMRR has supported the following research in this area:

- Pilot Clinical Trials in the Epidemiology, Prevention, and Treatment of Respiratory Failure in Children RFA (HD-02-027)
- Clinical Trial Planning Grants to Guide and Improve Timing, Intensity, Duration, and Outcomes of Pediatric Critical Care and Rehabilitation: Therapeutic Interventions in Childhood Cardiopulmonary Arrest RFA (HD-02-026)
- Clinical Trial Planning Grants to Guide Timing, Intensity, and Duration of Rehabilitation for Stroke and Hip Fracture RFA (HD-01-022)
- Cooperative Multicenter Traumatic Brain Injury Clinical Trials Network RFA (HD-01-007)

There are unprecedented opportunities to explore the biomedical, behavioral, and social bases of chronic conditions and rehabilitative strategies.

Developing more precise methods to measure impairments, disabilities, and societal and functional limitations

This area includes research on brain imaging for diagnostics and prognosis; improved outcome measures of well-being, satisfaction, demographics, and quality of life; special assessments for children with disabilities; and measurement of bone, muscle, and limb function, among other issues. The NCMRR has supported the following research in this area:

- Long-Term Care Recipients: Quality of Life and Quality of Care Research PA (HD-02-162)
- Dynamic Health Assessment for Medical Rehabilitation Outcomes RFA (HD-02-024)

Understanding whole body-system responses to physical impairments and functional changes

This broad research area includes motor cortex changes associated with stroke and brain injury, spinal cord plasticity and regeneration, muscle atrophy and decreased bone density, cognitive and behavioral changes (e.g., attention, memory), and many other topics. The NCMRR has supported the following research in this area:

- Biomechanical Modeling of Movement RFA (HD-03-011)
- Studies into the Causes and Mechanisms of Dystonia PA (HD-02-156)
- Genetic Basis of Recovery and Rehabilitation (HD-03-025)

Developing improved assistive technology

Small businesses (supported by the NCMRR, the NICHD, and the NIH as a whole) conduct a great deal of research in assistive technology, in addition to the research conducted by investigators at universities and medical centers. In general, this area includes research in wheelchair design; prosthetic hands, feet, and knees; improved fitting and monitoring of orthotics and prosthetics; design of specialized recreational equipment; and other topics. The NCMRR has supported the following research in this area:

- Innovations in Powered Mobility Devices RFA (HD-03-023)
- Innovative Technologies for Pediatric Critical Care and Rehabilitation RFA (HD-03-014)
- Augmentative and Alternative Communication Strategies for Treatment of Acquired Cognitive and Linguistic Disorders RFA (HD-02-002)

Training research scientists in the field of rehabilitation

This area includes support of individual fellowships for postdoctoral fellows, institutional training grants for graduate students and postdoctoral fellows, mentored awards specifically targeted to those in rehabilitation fields, national development and training programs for physical medicine and rehabilitation departments, and other mechanisms. The NCMRR has supported the following research in this area:

- Pediatric Clinical Care Scientist Development Program RFA (HD-03-015)
- Jointly Sponsored NIH Pre-doctoral Training Program in the Neurosciences PAR (HD-02-017)

Some of the work of the NCMRR falls outside of these priority categories, while other research conducted or supported by the NCMRR cuts across multiple priority areas.

NCMRR Networks

One additional major NCMRR initiative is its nearly $4 million in annual support of four rehabilitation research Networks. These Networks seek to facilitate ongoing projects and stimulate future research in medical rehabilitation through multidisciplinary research cores, information transfer, and pilot projects. This initiative relies on major collaborations among institutions and has the potential to connect Network researchers with colleagues from other facilities within each region. Currently, the NCMRR Networks include facilities around the country:

- West—RehabNet-West
- Midwest—The Midwestern Network
- South—Enhanced Rehabilitation Research in the South (ERRIS)
- Northeast—The Northeast Cognitive Rehabilitation Research Network

The Networks will be renewed as part of the Medical Rehabilitation Research Infrastructure RFA (HD-04-005), at http://grants.nih.gov/grants/guide/rfa-files/RFA-HD-04-005.html. For more information on the Networks, visit http://www.nichd.nih.gov/ncmrr/networks.htm.

NIH Rehabilitation Coordinating Committee

The NCMRR is charged with coordinating rehabilitation research across the NIH through the NIH Rehabilitation Coordinating Committee. In July 2003, this Committee held a trans-NIH and trans-agency meeting on Physical Disabilities Across the Lifespan. (Summary slides of the breakout sessions are available at http://www.nichd.nih.gov/about/ncmrr/disabilities/index.htm).

In response to the recommendations from this conference, the committee issued a new trans-NIH PA on Research Partnerships for Improving Functional Outcomes (visit http://grants1.nih.gov/grants/guide/pa-files/PAR-04-077.html for more information). This PA solicits innovative applications for basic, applied, and translational multidisciplinary research that addresses important biological, behavioral, medical, and/or psychosocial research problems related to rehabilitation or health maintenance of individuals with acute or chronic disease.

The NCMRR also supports conferences and workshops related to its research priorities. For more information, visit http://www.nichd.nih.gov/about/ncmrr/workshops.htm.