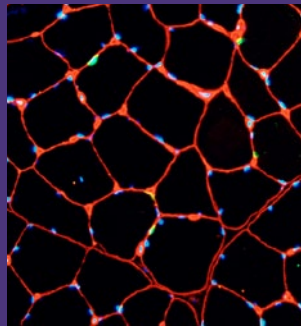




**CDMRP**   
Department of Defense

# Duchenne Muscular Dystrophy Research Program



*U.S. Army Medical Research and Materiel Command*



## VISION

To extend and improve the function, quality of life, and lifespan for all individuals diagnosed with Duchenne muscular dystrophy.

## MISSION

Support research to accelerate the development and clinical testing of new therapeutics and increase our understanding of successes and failures of therapeutics in clinical trials.



“This is an incredibly exciting time for patients and families living with Duchenne muscular dystrophy. Many promising and novel therapies are now being developed and tested. The CDMRP is at the forefront of supporting these critical efforts.”

**Justin Fallon**  
**FY12 Integration**  
**Panel Member**

# History of the CDMRP

The Congressionally Directed Medical Research Programs (CDMRP) was created in 1992. The culmination of a powerful grassroots effort led by the breast cancer advocacy community resulted in a congressional appropriation of funds for breast cancer research and generating a unique partnership among the public, Congress, and the military. The success in managing the initial congressional appropriations in breast cancer research combined with additional advocacy movements and the need for focused biomedical research catapulted the CDMRP into a global funding organization for cancer research, military medical research, and other disease-specific research. The CDMRP has grown to encompass multiple targeted programs and has received nearly \$7 billion in appropriations from its inception through fiscal year 2012 (FY12). Funds for the CDMRP are added to the Department of Defense (DoD) budget, in which support for individual programs, such as the Duchenne Muscular Dystrophy Research Program (DMDRP), is allocated via specific guidance from Congress.

## Application Review Process

The CDMRP uses a two-tier review process for application evaluation, with both tiers involving dynamic interaction among scientists and consumers (family members of individuals with Duchenne muscular dystrophy [DMD]). The first tier of evaluation is a scientific peer review of applications measured against established criteria for determining scientific merit. The second tier is a programmatic review conducted by the Integration Panel (IP), a group composed of leading scientists, clinicians, and consumer advocates. The IP compares applications to each other and makes recommendations for funding based on scientific merit, portfolio composition, and relevance to program goals.

# Duchenne Muscular Dystrophy Research Program

## Program History

DMD affects approximately 1 out of every 3,500 male infants (about 20,000 new cases a year). This form of muscular dystrophy results from mutations in the dystrophin gene that lead to an absence of dystrophin in muscle cells, allowing these cells to be easily damaged. Boys living with DMD experience devastating muscle weakness that affects the skeletal muscles, heart, and respiratory muscles. Symptoms of DMD typically develop prior to age 5, and by age 12 most patients are confined to a wheelchair. Currently, there is no cure for DMD and young men with this disease rarely live beyond their early 30s. Therefore, Congress established the DMDRP in FY11 to promote the understanding, diagnosis, and treatment of DMD. The FY11 appropriation of \$4 million resulted in the funding of the following four awards.



“Peer review showed me there is hope out there and that telling the story of Duchenne is more important now than ever.... It is just a matter of time, money, and the right investment into research.”

**Tim Revell**  
**FY11 Consumer Reviewer**

## Program Highlights



### **A COX-Inhibiting Nitric Oxide Donor to Counteract Functional Muscle Ischemia in Duchenne/Becker Muscular Dystrophy: Translational Research from Mice to Men**

**Gail Thomas**, Cedars-Sinai Medical Center

**Objective:** Determine whether short-term and long-term treatment with nitric oxide (NO) donating drug naproxinod improves muscle blood flow regulation and heart function by restoring NO signaling in mdx mice without the development of untoward side effects.

**Long-term goal:** Establish naproxinod as a therapeutic to arrest muscular dystrophy disease progression and improve quality of life as well as to extend life.



### **Establishing Minimal Clinically Important Differences for Current Clinical Trial Endpoints and Composite Outcome Measures in Duchenne Muscular Dystrophy via Extension of a**

#### **Multicenter Natural History**

**Avital Cnaan**, Children's Research Institute at Children's National Medical Center

**Objective:** Determine the minimally important differences (MIDs) of outcome measures by assessing the relationship between longitudinal changes in measured outcomes relating to motor abilities and functional outcomes as well as person-reported outcomes. In addition, this project will demonstrate that MIDs are able to discriminate between different states of the disease and are sensitive to change.

**Long-term goal:** Develop practical and easily administered outcome measures that are sensitive and responsive to changes produced by treatments in children and adults with muscular dystrophies and other neuromuscular diseases across the lifespan and stages of disease severity.



### **Translational Studies of GALGT2 Gene Therapy for Duchenne Muscular Dystrophy**

**Paul Martin**, Research Institute at Nationwide Children's Hospital

**Objective:** Evaluate two gene therapy vectors AAV-(MCK and MHCK7)-GALGT2 designed to overexpress Galgt2 as a treatment for Duchenne muscular dystrophy (DMD) using the mdx and Cmah-/- mouse models. This project will determine the dose-response curves for physiological correction of mdx and Cmah-/- mdx muscle and determine if AAV-MHCK7-GALGT2 can prevent cardiomyopathy.

**Long-term goal:** Develop a systemic treatment, e.g., GALGT2 gene therapy, for all the muscles of a DMD patient.



### **Optical Imaging of Dystrophic and Damaged Muscle**

**Glenn Walter**, University of Florida

**Objective:** Evaluate a novel near infrared (NIR) imaging technique for imaging damaged muscle, quantifying drug delivery, and measuring tissue correction using NIR blood pool contrast agents such as indocyanine green.

**Long-term goal:** Establish NIR imaging, a low-cost nonionizing imaging technology, as a tool for monitoring muscle cell response and therapeutic agent delivery along with providing clinically useful information for diagnostic and prognostic purposes in patients with neuromuscular diseases.



For more information, visit  
<http://cdmrp.army.mil>  
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