

CDMRP



Department of Defense



Peer Reviewed Medical Research Program

The Peer Reviewed Medical Research Program (PRMRP) has impacted the landscape of many Congressionally specified diseases and conditions for the benefit of military Service members, Veterans, and the general public by funding high-impact research in prevention, screening, diagnosis, and treatment, as well as survivorship and quality of life issues.

VISION

Improve the health, care, and well-being of all military Service members, Veterans, and beneficiaries.

MISSION

Encourage, identify, select, and manage medical research projects of clear scientific merit and direct relevance to military health.

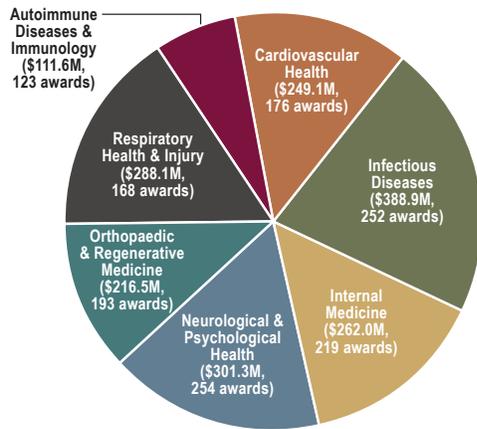
PROGRAM HISTORY

Since 1999, the PRMRP has supported research with the underlying goal of enhancing the health and well-being of military Service members, Veterans, retirees, and their family members. Congress has provided appropriations totaling \$2.35 billion through fiscal year 2019 (FY19) to address a broad spectrum of medical issues that impact the diverse populations treated within the Military Health System. Each year, Congress specifies topic areas eligible for funding under the PRMRP. More than 161 topic areas have been supported since the program's inception, addressing a wide range of disciplines including cardiovascular health, autoimmune diseases and immunology, infectious diseases, internal medicine, neurological and psychological health, orthopaedic and regenerative medicine, and respiratory and environmental health. The program is committed to supporting research that will profoundly impact conditions that affect the 9.4 million active duty Service members, certain Reserve component members, retirees, and their beneficiaries that seek medical care from the Department of Defense.

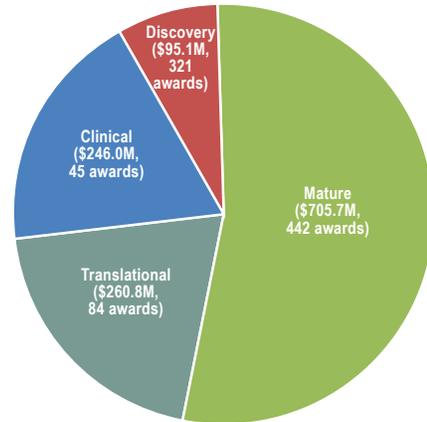
HIGH-IMPACT ADVANCES SUPPORTED BY THE PRMRP

- **Banyan Brain Trauma Indicator®**: A biomarker identification study led to the development of the first Food and Drug Administration-approved point-of-care blood test to evaluate mild traumatic brain injury.
- **Percutaneous Osseointegrated Prosthesis**: Preclinical studies of a device that allows direct skeletal attachment of prostheses to amputated limbs led to an ongoing clinical trial.
- **Mesenchymal stem cell (MSC) transplantation**: A Phase I clinical trial showed that autologous MSC transplantation in patients with relapsing multiple sclerosis is safe and well-tolerated.
- **Recilisib (Ex-RAD)**: Investigational New Drug-enabling studies of Onconova Therapeutics, Inc.'s medical countermeasure for radiation exposure led to two successful Phase I clinical trials.
- **Naltrexone/methylphenidate combination treatment**: A clinical trial showed that naltrexone can be combined with the attention deficit/hyperactivity disorder (AD/HD) medication, methylphenidate, to mitigate stimulant-induced euphoria while preserving the benefits of AD/HD treatment.
- **PATH EX device**: PRMRP-funded investigators developed a microfluidic extracorporeal device that selectively removes pathogens and endotoxins from circulating blood to treat bacteremia and sepsis.
- **Intensive Medical Therapy**: This includes a Phase III multi-site clinical trial to assess whether an aggressive medication regimen will modify risk factors and reduce the likelihood of death in women that experience cardiac symptoms and abnormal stress tests, but whose coronary arteries show no severe obstruction.

**FY99-FY18 Investment by Portfolio
(% Research Dollars)**



**FY13-FY18 Investment by Research Maturity
(% Research Dollars)**



Autoimmune Diseases and Immunology	<ul style="list-style-type: none"> • Peanut allergy vaccine to retrain the allergic immune response to a non-allergic antigenic response and reduce IgE levels, which is now being tested in a Phase I clinical trial • Agents that target fibroblast-like synoviocytes (FLS), a rheumatoid arthritis (RA)-relevant cell type that is currently untapped as a drug target, without causing significant immunosuppression combined with disease-modifying drugs to improve disease control and remission rates in RA patients • A computer-based clinical decision support tool that allows for risk stratification of patients with inflammatory bowel disease (IBD) and identification of IBD patients at risk of poor response to anti-tumor necrosis factor biologic therapy, which will facilitate a personalized clinical approach for treatment and stratification of IBD patients based on severity and phenotype
Cardiovascular Health	<ul style="list-style-type: none"> • Studying the mechanisms behind heart failure with preserved ejection fraction (HFPEF) and whether a novel therapeutic, cardiosphere-derived cell therapy, can effectively treat HFPEF by targeting crucial pathways • Conducting a Phase III randomized, multi-center clinical trial of a novel immunosuppression regimen (everolimus and low-dose tacrolimus) as an anti-rejection medicine for pediatric heart transplant patients to reduce or prevent complications of transplant and improve the longevity of the transplanted heart
Infectious Diseases	<ul style="list-style-type: none"> • Developing a field-deployable bandage contact lens that would simultaneously prevent biofilm development and continuously deliver a controlled, consistent dose of antifungals to the site of eye injury for up to 2 weeks • The intranasal universal flu vaccine candidate, M2SR, which for the first time has shown protection against a highly mismatched influenza virus in a human-challenge clinical trial • A Phase I/II proof-of-concept clinical trial of the first schistosomiasis vaccine (Sm-TSP-2/Alhydrogel®) in African adults living in endemic areas of Uganda with the goal of developing a schistosomiasis vaccine to prevent Service members from becoming ill from endemic disease exposure during operational deployments
Internal Medicine	<ul style="list-style-type: none"> • Conducting a clinical trial to assess the effectiveness of pelvic floor muscle physical therapy compared to the standard bladder-directed therapy, and to test the hypothesis that pelvic floor muscle dysfunction, not bladder dysfunction, is a major contributor to pelvic pain and voiding dysfunction in many women with interstitial cystitis • Conducting a clinical trial in Veterans to compare cognitive behavioral therapy (CBT), which is effective in reducing binge eating but does not help with co-occurring obesity, to a novel Regulation of Cues therapy aimed at regulating sensitivity to internal hunger/satiety cues and external food cues to treat both binge eating and associated weight gain
Neurological and Psychological Health	<ul style="list-style-type: none"> • Conducting a clinical trial to evaluate the safety and effectiveness of prazosin as a treatment to reduce headache frequency and severity and the use of analgesic medications in active duty Service members and Veterans suffering from chronic migraine and post-traumatic headache • Developing a user-friendly Internet-based training for CBT for insomnia (CBT-I) to provide a sustainable, accessible, low-cost, non-pharmacological treatment for military Service members, Veterans, beneficiaries, and the general public dealing with sleep disorders • Developing nStrada™, a sustained-release, subcutaneously implanted drug delivery device with refilling capability for chronic delivery of drugs (> 6 months) that has the potential to provide drug delivery for multiple conditions, including opioid abuse, pain, and psychological disorders
Orthopedic and Regenerative Medicine	<ul style="list-style-type: none"> • Conducting a Phase II clinical trial to determine whether percutaneous peripheral nerve stimulation, a non-opioid, minimally invasive therapy, can reduce pain, pain medication usage, and disability compared to standard care in Service members, Veterans, and civilians with chronic low back pain • Conducting multiple studies to evaluate novel acute, early, and sustained treatment strategies that modulate inflammatory responses to joint injuries with the overarching effort of conducting clinical trials of tranexamic acid and gait retraining, as well as preclinical studies of induced pluripotent stem cells and interleukin 1 receptor agonist gene therapy to develop multiple strategies to prevent post-traumatic osteoarthritis after anterior cruciate ligament injury • Conducting pre-Investigational New Drug studies on SonoHeal, a "no bone graft" technology that combines a biodegradable scaffold and growth factor DNA delivered via ultrasound-activated microbubbles to repair and regenerate bone after severe fracture
Respiratory Health and Injury	<ul style="list-style-type: none"> • Developing biocompatible oxygenated microparticles that carry oxygen gas and can be administered via an intravenous line that have demonstrated favorable efficacy, safety, and toxicity results in animal studies and may transform medicine for combat casualties requiring prolonged field care and long transport times • Conducting multiple studies to understand the biologic connection between injury and infection by investigating how injury, through the release of "danger-associated molecular patterns," influences innate immunity and increases the susceptibility to infection • Developing a novel metal-organic framework-coated blood circuit, which eliminates the need for anticoagulants and would make extracorporeal life support a safer option for trauma patients suffering from acute lung injury/acute respiratory distress syndrome

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