Current Highlighted Research Studies

• Effects of Prolonged Deployment On Body Composition and Physiological Function

• Development of a “TOP” (Tissue, Overuse, Injury and Performance) Computer Prediction Model to Predict Injury Potential and Performance

• Quantification of Musculoskeletal Disabilities and Related Costs Within the Army

• Effects of Prolonged Deployment On Cognitive Function

• Effects of Blast Injury On Cognitive Function

• Effects of Exercise Training On Bone Health and Musculoskeletal Injury

• Physical Performance In the Amputee Population

• Biomechanical Factors Associated With Injury

Location/Facilities

USARIEM is co-located with Soldier Systems Center in Natick, Massachusetts. Located a short distance from Boston, the institute offers researchers its own unique facilities and is in close proximity to many of the finest academic and medical institutions.

Unique Facilities

Climatic Rooms
(-10 to 50 °C)

Immersion Lab
(5 to 41 °C)

Hypobaric Chambers
(9,000 m; -15 to 40 °C)

Doriot Climatic Facility
(-57 to 74 °C)

Pikes Peak Laboratory
(4,300 m)

Physiology / Biochemistry & Molecular Laboratories

Visit Our Web Site: www.usariem.army.mil
United States Army Research Institute of Environmental Medicine

USARIEM is an internationally recognized center of excellence for Warfighter performance science and its useful applications. The institute functions as a world-class laboratory for environmental medicine, physiology, performance and nutrition research. It features integrated cellular, tissue, and human research programs.

Military Performance Division

Conduct research to enhance the performance (physical, cognitive, behavioral and psychomotor) of military occupational tasks, or to prevent performance decrements due to physical overload, nutritional deprivation, environmental and operational stresses, and musculoskeletal injuries.

Military Performance Research Areas

Physical Performance Optimization
- Advanced training programs
- Performance assessment
- Amputee function & performance
- Body composition analysis
- Soldier task performance
- Rapid train-up (Nat. Guard, Reserves)
- Computer modeling – performance prediction

Injury Reduction/Bone Health
- Stress fracture quantification
- Bone health optimization – exercise training & intervention programs
- Bone geometric & structural analysis

Military Biomechanics Research
- Load Carriage
- Mechanical stress/strain injury
- Computer modeling – injury prediction

Cognitive Performance, Decision Making and Judgment
- Vigilance studies – marksmanship
- Decision/judgment analysis – EST 2000
- Cognitive assessment
- Brain imaging

Injury Epidemiology
- Acute & chronic musculoskeletal injuries
- Heat injury susceptibility
- Anthropometric statistics
- Disability – musculoskeletal

Deployment Health Protection
- Pre-/Post-deployment studies
  – Cognitive function & physiological assessment
- Injury mechanisms & biomarker studies
- Anti-inflammatory strategies
- Computer modeling - Training, Overuse injury and Performance (TOP)

Select Recent Scientific Publications


Military Performance Division Products
TB MED 592 – Prevention and Control of Musculoskeletal Injuries Associated with Physical Training