



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Health Outcomes and Long-Term Care Following Extremity Injury

Compartment Syndrome Treated with Autologous Bone Marrow

Compartment syndrome leading to non-healed fractures, volumetric muscle loss, or amputation are potentially devastating complications of severe extremity injury to the Service Member. Researchers at Oregon Health and Science University are developing a treatment of severe traumatic lower extremity injury complicated by compartment syndrome using autologous bone marrow mononuclear cells to regenerate limb tissues, with the goal of reducing disability and improving functional recovery. Pre-clinical studies of anterior tibialis compartment syndrome in large animals showed safety, long-term functional engraftment of bone marrow cells, and statistically significant improved muscle strength and gait. A clinical trial is expected in the next one to two years. This line of investigation offers a promising adjunctive approach to improve outcomes in extremity trauma complicated by compartment syndrome, a leading cause of morbidity among wounded Service Members.