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 mono-nuclear 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.