



US DEPARTMENT OF DEFENSE  
**BLAST INJURY RESEARCH PROGRAM**  
**COORDINATING OFFICE**

## **Pain Management and Rehabilitation after Amputation** **Rehabilitation of Multiple-limb Combat Amputees: Injuries and Functional Outcomes for a Small Case Series**

Recent multiple-limb combat amputees present new challenges for rehabilitation care providers at military and VA facilities. Researchers sponsored by the BUMED WII Program conducted a comprehensive evaluation of the outpatient rehabilitation program at the Naval Medical Center, San Diego Comprehensive Combat and Complex Care (C5) facility. The researchers quantified injuries and functional outcomes for 29 multiple-limb amputees, all injured in 2010 and 2011 by blast weapons in the Afghanistan conflict; the sample reflected some of the most serious complex battle injury patients in this conflict. All patients completed the outpatient program at the C5 facility. At program discharge, most patients had improved scores on the Mayo-Portland Adaptability Inventory, 4<sup>th</sup> Revision (MPAI-4) for self-care, mobility, pain, recreation, and transportation. One-half or fewer of the patients had improved psychosocial and employment scores. This study provides rehabilitation professionals with detailed descriptions of the extensive injuries, including amputations and other injuries, of recent multiple-limb amputees returning from Afghanistan using established injury scales, namely the AIS. It also gives a careful description of novel rehabilitation approaches, including advanced prosthetics for the most complex blast injury patients from the recent Afghanistan conflict. Case reports of two triple amputees illustrated coordinated multispecialty care and contrasting prosthetic technologies. Military and VA providers can use this report as an initial resource to anticipate healthcare needs and improve their post-injury care programs for similar patients. Moreover, this project is one of the first to provide preliminary results which quantify changes in patient functioning following a novel outpatient rehabilitation program. The results also inform providers on healthcare needs for patients who sustain powerful blast injuries resulting in extensive injuries including multiple-limb amputations.