



US DEPARTMENT OF DEFENSE
BLAST INJURY RESEARCH PROGRAM
COORDINATING OFFICE

Pain Management and Rehabilitation after Amputation Bone Mineral Density Loss After Combat-related LE Amputation

Researchers at the CRSR at USUHS conducted a study to determine the incidence, severity, and associated risk factors for the development of low bone mineral density (BMD) after combat-related LE amputation. A retrospective case-control analysis was performed for 156 LE amputees (121 unilateral amputees, 35 bilateral amputees) for whom post-injury dual energy x-ray absorption (DEXA) BMD measurements were available. Proximal amputation level and delayed ambulation were significantly associated with low BMD after trauma-related amputation. These results, published in the *Journal of Orthopaedic Trauma*, suggest transfemoral amputees are at greater risk of BMD loss and that disuse atrophy is a primary factor in the development of low BMD. Furthermore, these results suggest that assessing calcium and vitamin D levels, supplementing appropriately, and focusing on early and aggressive weight bearing rehabilitation may lead to more efficient and successful rehabilitation of LE amputees.