



US DEPARTMENT OF DEFENSE

# BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

## Extremity Injury Management

### Comparison of Functional Status Between Service Members After Deployment-related Amputations and Severe Lower Limb Injuries

Investigators at the Naval Health Research Center (NHRC; San Diego, CA) conducted a study to determine the long-term functional limitations associated with extremity injuries. The study collected and analyzed data from the Wounded Warrior Recovery Project (WWRP), a longitudinal study of Service members with deployment-related injuries. WWRP participants indicating use of a lower limb orthosis or prosthesis rated their ability to complete 20 activities on the Orthotics and Prosthetics Users' Survey (OPUS), thus providing a measure of functional status. The functional status among participants with either, (1) a deployment-related lower limb amputation who reported the use of a prosthesis (n = 82), or (2) a deployment-related severe lower limb injury who reported the use of an orthosis (n = 68) was compared. Overall, self-reported functional status was compared between the two injury groups by examining the total OPUS score and comparing the responses on the individual OPUS items.

Of the 82 participants with a lower limb amputation, 70 percent had a below knee amputation, while 30 percent had an above knee amputation. Of the 68 participants with a severe lower limb injury, 60 percent reported using an ankle orthosis, while others reported using a foot or knee orthosis. Proportions of acute fractures of the severe lower limb injury group were tibia (56 percent), fibula (43 percent), calcaneus (20 percent), and metatarsal (22 percent). When examining data on individual survey items, the item "getting into or out of tub or shower" was significantly more difficult in participants with an amputation and the item "put on or take off orthotic or prosthetic" was significantly more difficult in participants with a severe lower limb injury. The most difficult items reported by both groups were "walk up to two hours", "run one block" and "walk up a steep ramp" while the least difficult items were "getting on and off a toilet", "walking around indoors" and "carry a plate of food while walking."

These findings demonstrate that both groups of injured Service members are at risk for long-term secondary effects of these injuries, and rehabilitation efforts should be optimized to address specific areas of functional limitation.

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