

**Results:** After controlling for age and time since amputation, post hoc T-tests revealed that participants with bulbous shaped limbs presented with increased rates of skin breakdown and callous formation on their residual limb ( $p < .05$ ). Participants with a bulbous shaped limb reported lower balance confidence and were more likely to be unable to ambulate. ( $p < .05$ ) Bulbous limbs were found to be indicative of impaired performance on the TUG and 2MWT. ( $p < .01$ ).

**Conclusions:** Bulbous shaped limbs are associated with increased rates of dermatoses, which can ultimately lead to deficits in prosthetic performance. Findings reinforce the importance of utilizing an interdisciplinary approach to understand the proper timing for prosthetic readiness. Achieving optimal limb shape is paramount to minimize dermatoses in the chronic phase of prosthetic rehabilitation, particularly for bulbous shaped limbs, which are more susceptible to dermatoses.

**Author(s) Disclosures:** N/A.

**Key Words:** Amputation, Prosthetics, Dermatitis

#### Research Poster 793655

##### The Influence of Chronic Neck Pain on Explicit Sequence Learning



Michael Brown (University at Buffalo), Zhengxiong Li, Baicheng Chen, Wenya Xu, Jeanne Langan

**Research Objectives:** To investigate individuals with chronic neck pain (CNP) ability to perform an explicit motor sequence task compared to age-matched controls.

**Design:** Cross-sectional.

**Setting:** University laboratory.

**Participants:** Young adults with a history of neck pain greater than three months ( $n = 11$ ) and age-matched controls ( $n = 13$ ).

**Interventions:** A battery of questions to determine pain characteristics was administered prior to testing. Participants completed a custom motor sequence task on a digitized tablet. Hand movements were tracked with a Leap Motion Monitor. Eight targets were arranged in a circle around a center target. Participants were explicitly instructed to start in the center target, then reach toward the illuminated peripheral target and then return to the center. The target at the top of the circle illuminated first followed by the other peripheral targets in a clockwise pattern. Participants went around the circle of targets 4 times (a block) alternating between the peripheral and center target. Following 2 blocks of clockwise movement with explicit instructions, participants completed a block with targets presented in a random order.

**Main Outcome Measure(s):** Time to complete a block and the average path distance.

**Results:** Controls included in the results scored 0 on the Neck Disability Index ( $n = 7$ ). Participants with CNP performed significantly slower during the first two blocks with explicit instructions ( $p < .05$ ). There was no difference between groups on the random sequence ( $p > .05$ ).

**Conclusions:** While participants with CNP performed similarly on the random sequence, they did not benefit from explicit instructions like the controls. More research investigating how explicit instruction influences motor learning in people with chronic pain could inform rehabilitation strategies.

**Author(s) Disclosures:** None.

**Key Words:** Chronic Pain, Motor Learning, Explicit Learning

#### Research Poster 793673

##### The Role of Personal Activities and Mild Cognitive Impairment in Predicting Falls Among Older Adults



Lien Quach (Geriatric Research Education and Clinical Centers, VA Boston Healthcare System), Sarah Rycroft, Elizabeth Leritz, Jeffrey Burr, David Gagnon, Jonathan Bean

**Research Objectives:** To examine the association between personal activities, mild cognitive impairment (MCI) and falls among older adults.

**Design:** A prospective analysis using data from Boston Rehabilitative Impairment Study of the Elderly longitudinal cohorts.

**Setting:** Outpatient Care.

**Participants:** 430 older adults at risk of mobility decline with a mean age of 76.6 (range: 65-96).

**Interventions:** N/A.

**Main Outcome Measure(s):** The outcome of the study was the fall counts, which were measured during two years of follow-up from Dec/2009 to Jan/2012. The independent variables included MCI and personal activities (PA) which were measured at baseline. MCI was identified using a cutoff of 1.5 SD below the age-adjusted mean of cognitive measures. PA (e.g. taking care of household business, regular exercise, and personal care...) were assessed using the Late Life Function and Disability Instrument. Scores were scaled from 0-100 and the median value of 60 divided high vs. low PA.

**Results:** Forty two percent exhibited MCI at baseline and 48% experienced at least one fall. Generalized Estimating Equation regressions indicates that the rate of experiencing a fall increased by 60% among participants with MCI ( $p < .01$ ). The overall PA was associated with a 46% reduction in the rate of falls ( $p < .001$ ). An interaction between personal activities and MCI in relation to falls was observed ( $p < .02$ ) such that a lower level of PA increased the association between MCI and falls by 226% ( $p < .002$ ). In participants with higher level of PA, MCI was not associated with an increased rate of falls.

**Conclusions:** Both MCI and low PA increased the rate of falls. The findings suggest that PA may be a protective factor to the risk of falls in older adults with MCI.

**Author(s) Disclosures:** None.

**Key Words:** Mild Cognitive Impairment, Personal Activities, Falls

#### Research Poster 793619

##### Understanding Experiences with Insurance Denials for Prosthetic Devices and DME for Individuals with Limb Loss



George Gondo (The Amputee Coalition)

**Research Objectives:** To investigate the experiences of the limb loss community concerning insurance denials for prosthetic devices and other durable medical equipment.

**Design:** Online survey of individuals with limb loss.

**Setting:** General community of individuals with limb loss.

**Participants:** A convenience sample of 491 individuals with limb loss.

**Interventions:** None.

**Main Outcome Measure(s):** Percentage of individuals with limb loss who have had an insurance claim for a prosthetic device or DME denied by insurance company. Reason stated by insurance company for denying claim. Whether the denial was appealed and the status of the appeal.

**Results:** The results from the survey demonstrate that insurance denials for prosthetic devices and DME are widespread throughout the limb loss community. Most of these denials were for a new prosthetic component or DME. Nearly half of those surveyed did not appeal their denial and nearly 30% of those who appealed their denial were not successful in their appeal.

**Conclusions:** Insurance denials for prosthetic devices and DME are widely experienced by individuals with limb loss. In order to facilitate access to appropriate prosthetic devices and DME, healthcare providers need to provide support for patients to appeal these denials.

**Author(s) Disclosures:** This project was supported, in part, by grant number 90LL0002-02-01, from the Administration for Community Living, U.S. Department of Health and Human Services, Washington, D.C. 20201. Grantees undertaking projects under government sponsorship are encouraged to express freely their findings and conclusions. Points of view or opinions do not, therefore, necessarily represent official Administration for Community Living policy.

**Key Words:** Amputation, Insurance, Prostheses and Implants