

**Objective:** Traditional methods of increasing Vitamin D are not optimal and absorption is often a challenge. This study tested a novel patchless delivery (TransEpi® technology) to increase Vitamin D levels in subjects with Vitamin D insufficiency (25(OH)D)

**Design:** Open label, single-arm study.

**Setting:** University diagnostic center tested and verified serum analyses (Screening, Baseline, Days 35, 42 and 56) on subjects (n=6). Safety and tolerability were assessed by serum levels and investigator assessed ordinal scale.

**Participants:** Healthy male/female adults.

**Interventions:** Technology containing Vitamin D3 was applied for 35 days with other sources of Vitamin D controlled or restricted (no oral supplements, SPF30+ sunscreen required, no change in pre-study lifestyle).

**Main Outcome Measures:** Numerically significant increases in 25(OH) D serum levels and safety/ tolerability.

**Results:** Overall 40%-50% increases (mean 44.5%) in Vitamin D insufficient subjects after 35 days application including a Cystic Fibrosis (CF) subject (+51% increase) who achieved normalized Vitamin D (35.3 ng/mL) and was previously unable for several years to normalize Vitamin D on oral supplements (2,000 IU/b.i.d.). Vitamin D insufficiency in CF patients is >90% despite oral supplementation. There were no adverse events and tolerability was good.

**Conclusions:** Adequate levels of Vitamin D improves performance and muscle strength and decreases the risk of fractures, osteoporosis, cancers, cardiovascular/metabolic and respiratory disorders. TransEpi® technology appears to be an effective delivery to increase Vitamin D levels in patients with malabsorption issues without exposure to UVA/UVB and/or when accompanied by sun-protecting ingredients. Further studies of the technology are ongoing.

**Level of Evidence:** Level II

#### Poster 79

##### Comprehension of Visual Displays of the Functional Independence Measure (FIM) in Patients with Spinal Cord Injury in Acute Rehabilitation

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**Disclosures:** Rebecca McConnell: I Have No Relevant Financial Relationships To Disclose

**Objective:** Visual aids have been shown to communicate health information effectively to patients in multiple areas of health care, but displays for the Functional Independence Measure (FIM) have never been evaluated as a provider to patient communication tool. The cognitive interview process was used to assess the comprehension of visual displays and FIMs, and whether FIM scores and their visual presentation are perceived to be helpful to patients for future acute rehabilitation use.

**Design:** 10 semi-structured cognitive interviews were performed on consenting adult patients with non-traumatic spinal cord injuries admitted to an acute rehabilitation unit. Cognitive interviews were audio-recorded and transcribed. Interviews were coded and themes were analyzed using Dedoose.

**Setting:** Adult inpatient acute rehabilitation unit.

**Participants:** Adults with non-traumatic spinal cord injuries in inpatient acute rehabilitation.

**Interventions:** Not applicable.

**Main Outcome Measures:** Comprehension of visual displays and qualitative themes related to communication in a rehabilitation unit.

**Results:** 8/10 respondents were able to understand the FIM displays and 9/10 believed a visual display could be helpful. 10/10 felt that there should be regular communication regarding rehabilitation progress and goals. Additional themes include suggestions for improvement, the role of communication in inpatient rehabilitation, and overcoming barriers in communication and rehabilitation progress.

**Conclusions:** Visual aids could be incorporated into conversations with patients in acute rehabilitation and would likely be a useful tool to improve communication.

**Level of Evidence:** Level V

#### Poster 80

##### Bilateral Lower Extremity Amputation after Toxic Shock Syndrome Presents with Locked Knee: A Case Report

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**Disclosures:** Jonah Green: I Have No Relevant Financial Relationships To Disclose

**Case/Program Description:** Patient is a 29-year-old woman who while pregnant with her first child had an episode of bleeding and was found to have a placenta previa and therefore underwent emergent C-section. She then developed a Staph infection which progressed into toxic shock syndrome and then necrotizing fasciitis affecting all of her extremities causing her to require a bilateral below the knee amputation. She spent a total of 3 months in the hospital before being transferred to our Acute Inpatient Rehabilitation Unit where it was noticed she had a locked knee.

**Setting:** Acute Inpatient Rehab Center.

**Results:** Aggressive ROM was successful in achieving knee flexion of up to 40° during the patient's therapy session but it was found not to be sustainable throughout the rest of the day. Medications didn't seem to have any affect either. Serial bracing was felt to be the best option and it was decided to be revisited once the patient's skin graft had fully healed.

**Discussion:** A few different methods were attempted to release the patient's locked knee. Initially, aggressive range of motion (ROM) twice a day by a skilled licensed physical therapist was tried. Then medications, including anti-inflammatory medications and neuro-pathic medications, were administered. A knee injection with cortisone was offered but patient refused due to fear of risk of infection. Bracing was also considered but was deferred as the patient had a new skin graft on the anterior aspect of same leg that had a locked knee.

**Conclusions:** In conclusion, this is the first case in the literature of a patient s/p amputation after toxic shock syndrome then developing a locked knee. Different methods of treatment for locked knee were attempted but none were successful in releasing the knee from extension. Patient has now been referred to orthopedics for manipulation under anesthesia.

**Level of Evidence:** Level V

#### Poster 81

##### Heart of the Matter. Atypical Mechanisms of Amputation in Young Adults. A Review of Two Case Reports.

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**Disclosures:** Marc van de Rijn: I Have No Relevant Financial Relationships To Disclose

**Case/Program Description:** Case 1: A 21-year-old woman who experienced an unprovoked new onset seizure. She was found to have right hemiparesis, right sided neglect, and bilateral cold lower extremities. CT scan revealed left middle cerebral artery stroke, trans-esophageal echocardiogram showed large left atrial myxoma, and CTA chest/abdomen/pelvis revealed occlusion of the distal aorta. She underwent an interventional embolectomy and bilateral lower extremity embolectomies with bilateral 4-compartment fasciotomies. Her right leg continued to show signs of ischemia, ultimately precipitating a right above-the-knee amputation. Case 2: A previously healthy 25-year-old man who developed chest pain while running. He was diagnosed with