study, 65 were found to be acute cases versus 35 which were chronic cases. 60 patients were discharged home, 25 went to a nursing home, 11 went to medicine, and 4 were transferred to surgery after leaving the rehab unit. The most common modalities for pain management were steroids and opioids, specifically, Oxycodone. Out of all the vertebrae regions that were affected (cervical, lumbar, thoracic, sacral), the lumbar vertebrae were the most common location of diskitis in our patient population. Particularly, the L4-L5 vertebrae were seen to be affected the most. Of our sample population, 12 patients incurred UTI's during their course of hospital stay, further complicating their underlying diskitis and requiring antibiotic usage. The most heavily ordered antibiotic was Rocephin. We had two cases of sepsis diskitis which was aggressively managed.
Conclusions: The average FIM score upon admission was 71.82 and increased to 75 at discharge, patients with low scores at admission are likely to be discharged to a facility and those with high scores at admission are likely to be discharged to home. This correlated with our results as majority of the patient population returned home after being discharged.
Level of Evidence: Level II

Poster 119:
Relationships Between Olisthetic Conditions and Intervertebral Disc Degeneration in the Lumbar Spine

Hyun Haeng Lee (Seoul, South Korea), Keewon Kim, MD, Jeong-Gil Kim, MD, Jae Hyeon Park, MD, Sun G. Chung, MD, PhD

Disclosures: Hyun Haeng Lee: I Have No Relevant Financial Relationships To Disclose
Objective: To determine whether olisthetic conditions associate with intervertebral disc degeneration in the lumbar spine.
Design: Case control study, retrospective.
Setting: Checkup including lumbar spine imaging.
Participants: The subjects were recruited from the persons who had visited to Gangnam Health-Care Center, Seoul National University Hospital for routine checkup from Jan. 2012 to Jun. 2014. We enrolled the subjects who had lumbosacral magnetic resonance imaging and lateral standing radiographs conducted consecutively within 1 month. 281 subjects were categorized into olisthesis (n=78) and control groups (n=203).
Interventions: Not applicable.
Main Outcome Measures: Disc degeneration score (DDS), rating higher scores for severer degeneration, was graded at each intervertebral disc level to score segmental DDSs, which were summed up to obtain a total DDS.
Results: The olisthesis group comprised 52 patients with spondylolisthesis (SPL), 25 with retrolisthesis (RTL) and 1 with both. The olisthesis group (20.69 ± 8.02 [6 - 43]) showed significantly higher total DDS than the control group (14.55 ± 6.18 [0 - 39], $p<.001$). Among the olisthesis group, patients with RTL (23.36 ± 8.43 [9 - 43]) showed severer degeneration than patients with SPL (19.10 ± 7.23 [6 - 38]), but a statistical significance was not reached ($p=.212$). The segmental DDSs of the intervertebral discs adjacent to the olisthetic vertebrae were meaningfully higher than the corresponding levels of discs in the control group especially at L3, L4, and L5 SPL ($p=.003$, $p=.003$, and $p=.002$) and at L2 and L3 RTL ($p=.007$, and $p=.026$).
Conclusions: Olisthetic conditions have strong relationships with the degree of disc degeneration in the lumbar spine especially at the discs adjacent to olisthetic vertebrae.
Level of Evidence: Level II

Poster 120:
Photomodulation Therapy with Low Level Laser Therapy (LLLT): Benefits for Pain Control

Vinicius Tieppo Francio, MD/PhD(c) (USAT College of Medicine, Oklahoma City, OK, United States)

Disclosures: Vinicius Tieppo Francio: I Have No Relevant Financial Relationships To Disclose
Objective: Low-Level-Laser Therapy (LLLT) is a form of light therapy that triggers biochemical changes within cells, where the photons are absorbed by cellular photoreceptors and triggers chemical alterations and potential biochemical benefits to the human body. LLLT has been used in pain management for years and is also known as cold laser therapy, which uses low-frequency continuous laser of typically 600-1000 nm wavelength used for pain reduction and healing stimulation. Many studies have demonstrated analgesic and anti-inflammatory effects provided by photobiomodulation in both experimental and clinical trials. Therefore, the purpose of this research article is to present a summary of the possible pain management benefits of low-level laser therapy.
Design: Review of the literature.
Setting: Theoretical retrospective review of the literature.
Participants: Non applicable.
Interventions: Non applicable.
Main Outcome Measures: Non applicable.
Results: In cold laser therapy, non-coherent light of wavelength 600-1000 nm is applied to an area of concern in the hopes of photostimulating the tissues in a way that promotes and accelerates healing. This is evidenced by the similarity in absorption spectra between oxidized cytochrome c oxidase and action spectra from biological responses to light.
Conclusions: LLLT using the properties of non-coherent light, has been seen to produce pain relief and fibroblastic regeneration in clinical trials and laboratory experiments. LLLT has also been seen to significantly reduce pain in the acute setting; it is proposed that LLLT is able to reduce pain by reducing the level of biochemical markers, oxidative stress and the formation of edema and hemorrhage. Many studies have demonstrated analgesic and anti-inflammatory effects provided by photobiomodulation in both experimental and clinical trials, and therefore based on current research the utilization of low level laser therapy for pain management and osteoarthritic conditions may be a complementary strategy used in clinical practice to provide symptom management for patients suffering from osteoarthritis and chronic pain.
Level of Evidence: Level V

Poster 121:
Properties of Wrist-Worn Accelerometers in Individuals with Spinal Cord Injury

Aaron J. Zynda (University of Michigan, Plano, TX, USA), Susan L. Murphy, ScD OTR/L, Anna L. Kratz, PhD

Disclosures: Aaron Zynda: I Have No Relevant Financial Relationships To Disclose
Objective: Increasing physical activity is an important health goal in spinal cord injury (SCI) patients, however, validated methods to measure physical activity are limited. We examined measurement properties of the Actiwatch-Score, a commonly-used accelerometer, and PRO-Diary in individuals with and without SCI.
Design: Validity Study.
Setting: Participants completed 8 tasks ranging from sedentary to moderate intensity physical activity in a research setting.
Participants: Nineteen manual wheelchair users with SCI were matched based on age and sex to 19 adults without an SCI who ambulated independently. Mean age was 49.3 years and one third were female.
Interventions: Not applicable.
Main Outcome Measures: To examine construct validity within groups, we conducted paired t-tests for each task by activity monitor. Independent sample t-tests were conducted to compare the groups in terms of activity levels across the tasks. Inter-unit reliability/agreement across tasks was assessed with intra-class correlations and Bland Altman plots.
Results: Both monitors demonstrated significantly different, increasing physical activity levels from sedentary to higher intensity

tasks. Participants with SCI had similar activity counts within tasks compared to those without SCI except for walking/wheeling. Agreement was high between monitors across tasks (ICCs = .78 - .92).
Conclusions: Both monitors demonstrated good construct validity for measuring physical activity across activities and high agreement. Either monitor may be appropriate to examine physical activity patterns in individuals with SCI.
Level of Evidence: Level II

Poster 122:
Quality Surveillance of Cooled Radiofrequency Neurotomy Procedure

Haewon Lee, MD (Hosp of Univ of PA, Philadelphia, PA, United States), William J. Bonner, MD

Disclosures: Haewon Lee: I Have No Relevant Financial Relationships To Disclose
Objective: To assess areas for quality improvement for cooled radiofrequency neurotomy/ablation (CRFA).
Design: Quality improvement.
Setting: Academic spine center.
Participants: Patients who underwent CRFA at the spine center from 8/2013 through 3/2016.
Interventions: Not applicable.
Main Outcome Measures: Assessing complications attributed to CRFA procedure. Developing a practice intervention to improve safety.
Results: Cooled radiofrequency neurotomy (CRFA) is a procedure commonly used to treat back pain suspected to emanate from the zygapophyseal joint. We conducted a surveillance review of CRFAs performed at an academic outpatient spine care center to assess for any possible associated quality and safety issues at this facility, with the goal to develop a strategy that would target any identified problem areas. We found that between 8/2013 and 3/2016, 87 patients received a total of 316 radiofrequency lesions during 131 separate denervation procedures. 13 minor complications were identified in 12 patients, yielding a 0.04% overall incidence of minor complications per radiofrequency site. Complications included: 8 cases of increased pain following the procedure; 2 cases of mild hypersensitivity reaction (rash) that resolved over the course of several days; 3 cases of neurologic complaints, which included transient sensory block of a lower extremity, transient myotomal weakness, paresthesia, and vasovagal symptoms. 1 patient reported both pain and hypersensitivity reaction following a procedure. No cases of infection, death, or serious long-term adverse effects were reported. All complications were mild to moderate, and self-limiting. Furthermore, there is no evidence that these complications were linked to physician or staff practice, to the facility, nor to pre- or post-procedural patient instructions.
Conclusions: Our quality improvement surveillance suggests that CRFA performed at this facility is a generally safe and well-tolerated procedure.
Level of Evidence: Level IV

Poster 123:
Cadaveric Study of the Articular Branches of the Shoulder Joint

Brittany L. Bickelhaupt, MD (Univ of TX HSC - San Antonio, San Antonio, TX, United States), Jacob E. Fehl, MD, Maxim Eckmann, MD, Ameet S. Nagpal, MD, MS, MEd, FAAPMR

Disclosures: Brittany Bickelhaupt: I Have No Relevant Financial Relationships To Disclose
Objective: This cadaveric study investigated the anatomic relationships of the terminal articular branches of the suprascapular, axillary, and lateral pectoral nerves (SN, AN, LPN), providing implications for fluoroscopic and ultrasound guided peripheral nerve blockade or ablation.
Design: 19 cadavers and 37 shoulders were evaluated and dissected in an anatomy lab. Each nerve was dissected into its terminal sensory branches.
Setting: The study was performed in a medical school anatomy lab.
Participants: 19 cadavers and 37 shoulders were evaluated.
Interventions: Not applicable.
Main Outcome Measures: Primary outcomes were percent consistency in neuroanatomy of each terminal articular branch.
Results: 19/25 (76%) had intact lateral pectoral nerves with 17/19 (89%) displaying articular branches innervating the anterior shoulder joint. 19/19 (100%) had LPN articular branches traveling with acromial branches of the thoracoacromial blood vessels over the superior aspect of the coracoid process. 20/20 (100%) had intact suprascapular nerves innervating the posterior head of the humerus and shoulder capsule. The axillary nerve terminal branches innervated the posterolateral head of the humerus and shoulder capsule with 20/20 (100%) precision and intact nerves. Suprascapular sensory branches were identified posteriorly travelling directly laterally to the spinoglenoid notch and also descending from the notch and returning back to the capsule over the glenohumeral junction. The axillary nerve gave branches ascending circumferentially from the quadrangular space to the posterolateral humerus and then dove deep to the deltoid and superiorly toward the inferior portion of the posterior capsule.
Conclusions: Safe zones for blocking terminal articular branches of the SN, AN, and LPN appear accessible with potential avoidance of motor blockade. Articular branches of the LPN exist and innervate a portion of the anterior shoulder joint. The LPN articular branch has a consistent relationship with thoracoacromial vessels. Articular branches of the SN and AN are accessible in the capsule overlying the glenohumeral joint posteriorly.
Level of Evidence: Level II

Poster 124:
Office-Based Stem Cell Therapies for Painful Degenerative Facetogenic and Sacroiliac Joint Disease: A Case Series

Christine L. Hunt (Mayo Clinic College of Medicine, Rochester, MN, USA), Jason S. Eldrige, MD, MD, William D. Mauck, MD, Andre J. van Wijnen, PhD, Wenchun Qu, MD, PhD

Disclosures:: Christine Hunt: I Have No Relevant Financial Relationships To Disclose
Objective: To report on the use of a novel therapeutic regimen for the treatment of painful degenerative facetogenic and sacroiliac joint disease (fluoroscopically guided injection of bone marrow aspirate concentrate with platelet-rich plasma) and to generate hypotheses that may be appropriate for testing in clinical trials assessing the safety and efficacy of this treatment.
Design: Observational, case series.
Setting: Academic medical center.
Participants: 9 patients with painful degenerative disease of the facet and/or SI joints who had failed conservative treatment with analgesics and physical therapy.
Interventions: Fluoroscopically guided facet and/or SI joint injection of autologous bone marrow aspirate concentrate (minimally manipulated mesenchymal stem cells) with platelet-rich plasma.
Main Outcome Measures: The primary outcome of this case series is safety as measured by reporting of adverse events. We also provide a qualitative description of patient-reported outcome measures that are being followed in several subjects, although we do not endeavor to draw any conclusions in terms of efficacy in this case series.
Results: No adverse events have been reported, providing evidence that this treatment is safe and demonstrating its feasibility in the office-based setting. All nine patients have reported improvement in pain, function, and/or narcotic use and this will be described, although this study design precludes analysis of efficacy.