Patients or Programs: A 59-year-old woman with left above knee amputation (AKA).

Program Description: The patient was involved in a motorcycle accident in which she sustained a pelvic ring fracture, an unstable left femoral neck fracture, and a left AKA. The patient underwent a hemiarthroplasty to repair the femoral neck fracture. However, she subsequently developed left hip septic arthritis which necessitated a resection arthroplasty with excision of the femoral head and neck (ie, Girdlestone arthroplasty) to eradicate the infection.

Setting: Prosthetic clinic.

Results: The patient currently wears an above knee prosthesis 6-10 hours daily and ambulates pain free while using a single-point cane. The components of the AKA prosthesis include a microprocessor knee to aid with stability, a dynamic response heel-height adjustable foot with a soft heel and firm toe, and a umbrella liner suspension system.

Discussion: We were not able to find a case in the literature that describes a patient who had undergone a Girdlestone arthroplasty and an AKA, and been able to ambulate with an above knee prosthesis. This procedure has been fairly beneficial in eradicating septic arthritis after total hip arthroplasty, improving pain after infection, aseptic component loosening, and several additional very specific indications. Ambulation after this procedure is generally difficult due to shortening, with a resultant leg-length discrepancy that has been documented as up to 10 cm. Patients who have undergone bilateral procedures have done relatively well by using double supports because their leg length discrepancy is less than patients undergoing a unilateral procedure. In this case, the height of the patient's AKA prosthesis was adjusted to accommodate the leg-length discrepancy.

Conclusions: A Girdlestone arthroplasty does not preclude ambulation after an AKA and may help decrease the effect of a known procedural complicating factor, leg-length discrepancy.

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Kareem Hubbard (National Rehabilitation Hospital, Washington, DC, United States); Nomen Azeem, MD, Fariba Emamhosseini, MD, Victor Ibrahim, MD.

Disclosures: K. Hubbard, none.

Patients or Programs: A 47-year-old patient with spinal cord injury level C7 ASIA D.

Program Description: The patient presented with a complaint of right shoulder pain that had been present for the past 6 weeks. He had a history of overuse injuries to the right shoulder. A physical examination of both shoulders included provocative tests for pain and signs of impingement. Also, a dynamic ultrasound examination of the shoulders was performed that revealed a loss of fibrillar pattern and echogenicity of the biceps tendon as well as edema and partial tears in the symptomatic shoulder. The images were recorded, and the diameter of the tendon was measured, at 1.1 cm. Intervention consisted of an ultrasound-guided needle tenotomy followed by seeding with platelet-rich plasma along the tendon sheath. He subsequently was prescribed 4-6 weeks of physical therapy, which consisted of active range of motion exercises with the goals of improving function and increasing strength.

Setting: Outpatient musculoskeletal rehabilitation clinic.

Results: At an 8-week follow-up, the patient reported resolution of shoulder pain, increased activity tolerance and strength, without any adverse effect. Upon physical examination and provocative testing, there was no reproducible pain of the right shoulder. Ultrasound examination revealed a resolution of the edema and the partial tear. Measurement of the tendon had decreased from 1.1 cm to 0.73 cm, which indicated resolution of the edema.

Discussion: Performing a tenotomy with platelet-rich plasma seeding helps to stimulate repair of the tendon by stimulating the release of collagen stimulating growth factors; the platelet-rich plasma will promote a healing environment that can help accelerate the therapeutic process. Physical therapy was used to help further stabilize the tendon by strengthening the surrounding muscle groups.

Conclusions: The combination of tenotomy, platelet-rich plasma, and physical therapy may provide a safe, minimally invasive way to treat tendinopathy and tendon-related pain, and should be considered if conservative measures fail.

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Midshaft Fibula Stress Fracture With Periostitis: A Case Report.

Lauren Abratt (University of Miami/Jackson Memorial Hospital, Miami, FL, United States); Andrew L. Sherman, MD.

Disclosures: L. Abratt, none.

Objectives: To describe a rare case of a proximal mid shaft fibula stress fracture with periostitis in a marathon runner.

Patients or Programs: A 37-year-old man with mid shaft fibula stress fracture and periostitis.

Program Description: A 37-year-old man presented with pain on the anterior-lateral right lower extremity that began 3 weeks before his clinic visit. He was a previous nonrunner who recently began training for a half marathon, with an increase in his mileage per a runners’ guide. The pain began initially during his first 9-mile run and progressed steadily to occur when walking less than a fourth of a mile. The pain was described as aching and stabbing with occasional burning. After initial radiographs were normal, magnetic resonance imaging with fat suppression showed an area of high signal in the right mid fibular shaft consistent with a fibular stress fracture, with no frank cortical break and periosteal thickening at the right mid fibular shaft consistent with periostitis.

Setting: A tertiary academic medical center outpatient rehabilitation clinic.

Results: Relative rest resolved the condition in 8 weeks and the patient remains symptom free with walking and running.

Discussion: Stress fractures occur due to repetitive subthreshold loading that, over time, exceeds the bone’s intrinsic ability to repair itself. They most commonly occur in the lower limbs as a result of the ground-reaction forces that must be dissipated during running, walking, marching, or jumping. The tibial shaft is the most common site of stress fractures, followed by the tarsals (25.3%), metatarsals (8.8%), femur (7.2%), fibula (6.6%), pelvis (1.6%), sesamoids (0.9%), and spine (0.6%). Stress fractures most commonly occur in the distal one-third of the fibula. Therefore, the location of this stress fracture is extremely rare and is the first published case of a proximal mid shaft fibula stress fracture in a marathon runner. An additional rare finding in this case was coexistent periostitis. Although it did not seem as though the periostitis slowed the eventual recovery in...
Poster 209  
**Gait, Musculoskeletal Pain, and Quality of Life Can Be Favorably Modified by Surgery-induced Weight Loss.**  
Heather K. Vincent, PhD (University of Florida, Gainesville, FL, United States); Kfr Ben David, Bryan Conrad, PhD, Kelley M. Lamb, BS, Amanda Seay.

**Disclosures:** H. K. Vincent, none.

**Objective:** Bariatric surgery dramatically improves numerous metabolic parameters in individuals who are morbidly obese. The effects on the musculoskeletal system after a bariatric procedure, however, are not well characterized. In particular, the early time course for changes in joint pain, physical function, gait, and quality of life relative to changes in body composition are not clear. This study examined the changes in gait parameters, joint pain, perceived physical function, and quality of life in patients who were morbidly obese before and 3 months after a bariatric procedure.

**Design:** Prospective comparative study over 3 months after surgery.

**Setting:** University of Florida Human Dynamics Laboratory.

**Participants:** Patients who were morbidly obese (N=28; body mass index, 47.4±7.3 kg/m²; 40.6±11.2 years old; 51% body fat).

**Interventions:** A bariatric procedure.

**Main Outcome Measures:** Body composition (BOD POD) assessments, gait analysis, perceived musculoskeletal limitations, joint pain, and the Medical Outcomes Short Form 36 were collected before surgery, at month 1, and at month 3. Gait parameters were assessed using a gait mat (GaitRite).

**Results:** By month 3, there was an average 21.6±7.8 kg weight loss, 15.7±8.0 kg fat loss, and an overall 5.0% reduction in body fat. Self-selected walking velocity increased by month 3 (108±17 m/s to 127±18 m/s; P<.0001) as did step length (a 7-cm increase from baseline, P<.0001). The base of support while walking significantly decreased by 3.2 cm by month 3 (both P<.002). Although patients with bodily pain demonstrated improved in knee, hip, and ankle pain symptoms by month 3, those with back pain demonstrated a significant reduction in pain severity from 6.2±3.8 points (baseline) to 3.9±3.5 points (month 3; 0-10 scale; P<.05). The reduction in the percentage fat-free mass was correlated with walking velocity and step length at month 3 (r values both <.05).

**Conclusions:** Older adults develop walking patterns that foster stability. However, older overweight adults demonstrated even more conservative gait traits while barefoot that reflect the need for stability. These findings have safety implications for balance and fall risk in older overweight adults in the home when shoes may not be worn. Potential stability and barefoot walk training may be useful to develop foot and leg strength, balance and proprioception in the older, overweight adult.

Poster 210  
**Effects of Age and Body Mass Index on Gait Parameters While Walking Shod and Barefoot: Implications for Stability in the Home Environment.**  
Heather K. Vincent, PhD (University of Florida, Gainesville, FL, United States); Bryan Conrad, PhD, Kelley M. Lamb, BS, Matthew Martenson, Amanda Seay, Kevin R. Vincent, MD, PhD.

**Disclosures:** H. K. Vincent, none.

**Objective:** With aging, there are progressive gait and balance changes that occur due to declining muscle and joint function. Barefoot walking has been shown to favorably modify certain gait parameters; however, it is unknown if there is an interaction between age, obesity, and the conditions of walking with and without shoes. This study examined the effects of age and body mass index (BMI) on gait parameters with and without shoes.

**Design:** Comparative experimental study.

**Setting:** University of Florida Human Dynamics Laboratory.

**Participants:** Healthy persons who were obese and persons who were not obese, stratified by age (<60 years old [N=30; 79.4±19.6 kg] and >60 years [N=32; 79.6±16.0 kg]) and BMI (<25 or >25 kg/m²).

**Interventions:** Each participant performed several walking trials at a self-selected walking pace on a pressure sensor-filled gait mat either in shod or barefoot conditions.

**Main Outcome Measures:** Gait parameters.

**Results:** There were no age-related differences in demographics and leg lengths. For both the shod and barefoot conditions, the <60 year old age group walked at a faster self-selected walking velocity (P<.0001), had longer stride lengths (P<.0001), spent less time in double support (P<.005), and spent more time in the “heel on” phase of the gait cycle (P<.05) than the older participants. Significant interactions between age and BMI existed for the shod condition for walking heel-to-heel base of support width, with overweight older adults displaying wide gait width (P<.05) and a greater percentage of time of the gait cycle in double support (P<.05). For the barefoot condition, significant interactions occurred between age and BMI for walking velocity (P<.05) and the percentage of gait cycle time in double support (P<.05).

**Conclusions:** Older adults develop walking patterns that foster stability. However, older overweight adults demonstrated even more conservative gait traits while barefoot that reflect the need for stability. These findings have safety implications for balance and fall risk in older overweight adults in the home when shoes may not be worn. Potential stability and barefoot walk training may be useful to develop foot and leg strength, balance and proprioception in the older, overweight adult.

Poster 211  
**Annual Injury Patterns of Competitive Hardcourt Bike Polo Players in 2010.**  
Maureen Y. Noh, MD (University of Florida, Gainesville, FL, United States); Heather K. Vincent, MD, PhD.

**Disclosures:** M. Y. Noh, none.

**Objective:** Hardcourt Bike Polo (HBP) is an emerging extreme sport that involves a 3 on 3 game of polo while riding bicycles on a hard outdoor surface. Consequently, musculoskeletal injuries occur during practice and competitive play. As this sport gains popularity, expected injury patterns should be established. We recently published the first report on annual injury patterns in a HBP cohort (N=21) from the northwestern United States (Seattle, WA). Additional data are needed to expand our understanding of injuries sustained by HBP players in different regions.

**Design:** Survey descriptive study.

**Main Outcome Measures:** Injury parameters; Expected injury patterns; Injury seasonality.