to an injury. Previous studies have investigated MRI findings of ballet dancers’ ankles, but they lack information on forefront and tendon pathologies other than flexor hallucis longus tendon. Therefore, the present study aims to fully identify asymptomatic radiological findings in the feet and ankles of ballet dancers. Methods: Thirty-one professional ballet dancers (15 men and 16 women; mean age: 26.5 ± 4.3 years) who were dancing in full capacity were included in this prospective study. Dancers who had foot or ankle pain requiring modification of dance activities which lasted for more than one week or had a history of surgery, fracture or bone stress reaction to the foot or ankle in the last six months were excluded. Orthogonal 3-plane STIR imaging of both feet and ankles was obtained using 3.0-T MRI and the images were reviewed using a standardised evaluation form by two musculoskeletal radiologists. Results: Fifty (80.6%) of the 62 feet and ankles had at least one bone marrow oedema. The common locations of bone marrow oedema were talus (n = 39, 62.9%), metatarsals (n = 17, 27.4%), and tarsal bones (n = 10, 16.1%). On trigonum and Stieda process were seen in 5 (8.1%) and 8 (12.9%) ankles respectively and among them, bone marrow oedema was seen in two os trigonum. In addition, posterior synovitis was seen in 11 ankles (17.7%). Ligament pathologies were found in the anterolateral ligament in 8 ankles (12.9%) and deltoid ligaments in 4 ankles (6.5%). Fluid around flexor hallucis longus, posterior tibialis and peroneal tendons were observed in 13 (21.0%), 8 (12.9%) and 6 (9.7%) ankles respectively. The increased signal intensity of tendons was seen in the Achilles tendon in 6 ankles (9.7%) and the peroneal tendon in one ankle (1.6%). Conclusion: This study showed the prevalence of foot and ankle MRI findings in asymptomatic professional ballet dancers. Those findings may come from high loads to which dancers are exposed and may not be related to symptoms. The results of this study would help interpret the MRI findings in symptomatic ballet dancers. Further analysis investigating the relationship between the MRI findings and the past and future injuries is warranted.

**Category:** Ankle/Foot/Calf

**Talar Osteoperiostic Grafting From The Iliac Crest (Topic): 2-Year Results Of A Novel Press-Fit Surgical Treatment For Large Talar Osteochondral Lesions**

**Abstract ID:** #22692

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**Summary:**
The Talar OsteoPeriostic grafting from the iliac Crest (TOPIC) procedure for large OLTs results in clinically effective outcomes with 100% ingrowth of all the grafts with no non-unions.

**Data:**
Purpose: The purpose of this study was to present the surgical technique and to evaluate the clinical and radiological outcomes of a new press-fit OATS technique for large primary and secondary talar osteochondral defects of the talus, Talar OsteoPeriostic grafting from the iliac Crest (TOPIC). Methods: 60 patients underwent a press-fit TOPIC procedure. Mean age was 38 years (SD 4.6). Pre- and postoperative clinical assessment at 12- and 24-months follow-up included the American Orthopaedic Foot and Ankle Society (AOFAS) score, the Short-Form 36 (SF-36) Mental Component Scale (MCS) and Physical Component Scale (PCS), the Numeric Rating Scales (NRS) of pain at rest, during walking and stair-climbing, and the Foot and Ankle Outcome Score (FAOS). Return to work was assessed in time and rate. Remodeling of the contour of the talus, bone ingrowth and consolidation of the implanted graft were assessed on computed tomography (CT) one year post-operatively. Results: All patients were available for the two-year follow-up. The AOFAS improved from 48 to 90 (p<0.05). All NRS scores improved: the NRS during rest from 3 to 0 (p<0.05), the NRS during walking from 5 to 1 (p<0.05), and the NRS during stair-climbing from 5 to 1 (p<0.05). Both components of the SF-36 improved. The PCS improved from 34 to 47 (p<0.05) and the MCS from 37 to 66 (p<0.05). All FAOS subscales significantly improved. 72% returned to sport at pre-injury sports level and mean time to return to sports was 9 months (SD 2.4). All patients showed remodeling of the talus and all grafts showed consolidation as well as bone ingrowth on the CT scans. All patients returned to work, at a mean time of 4 months post-operatively (SD 4.4). One patient had a temporary loss of n. saphenous sensibility. Conclusions: The TOPIC procedure for large OLTs results in clinically effective outcomes with 100% ingrowth of all the grafts with no non-unions. There is a 100% return to work rate and a 72% return to pre-injury of sports rate. Long-term results are necessary to evaluate whether the TOPIC procedure stands the test of time and can be considered the treatment of choice for large OLTs at long-term follow-up.

**Category:** Ankle/Foot/Calf

**Biomechanical Comparison Of Open Versus Percutaneous Techniques For Primary Mid-Substance Achilles Tendon Repair: A Systematic Review And Meta-Analysis**

**Abstract ID:** #22944

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**Summary:**
Both open and percutaneous techniques are biomechanically viable approaches for primary mid-substance Achilles tendon repair. Methods: A systematic review of original research articles was performed using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. To qualify for study inclusion, articles were required to be published in English, utilized a cadaveric laboratory design, and had to directly compare the biomechanical properties of open Achilles repair using a Krackow or Kessler technique versus percutaneous repair using either the PARS (Arthrex) or Achillon (Integra) tendon repair systems. Evaluated outcomes included displacement (mm), load to failure (N), and stiffness (N/m). Results: Nine studies met inclusion criteria, including 190 cadaveric specimens (open: 83; PARS: 56; Achillon: 51) that underwent primary mid-substance Achilles tendon repair. Pooled analysis demonstrated no statistically significant difference in displacement (p = 0.418; Figure 1), load to failure (p = 0.923; Figure 2), or stiffness (p = 0.195; Figure 3) between the open and percutaneous techniques. Discussion/Conclusion: The results of this study suggest that both open and percutaneous techniques are biomechanically viable approaches for primary mid-substance Achilles tendon repair. These biomechanical findings must be interpreted in the context of clinical outcomes data as well as the differing complication profiles of the two techniques to best inform the surgical decision-making process for primary mid-substance Achilles tendon repair.

**Category:** Ankle/Foot/Calf

**“Progressive Foot Peak Pressure Analysis after FHL Transfer for Chronic Retracted Tendo-achillean Tars” – A Pedobarographic Analysis of Normal Foot Versus Affected Foot**

**Abstract ID:** #23153

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**Summary:**
Loading foot pressures though altered initially are restored and comparable to normal foot at the end of 1 year follow-up after FHL transfer for chronic retracted tendo-achilles tear, thus reducing the foot's morbidity. FHL hypertrophy is seen at the muscle and tendinous region of the transferred graft.

**Data:**
Progressive Foot Peak Pressure Analysis after FHL Transfer for Chronic Retracted Tendo-achilles Tear – A Pedobarographic Analysis of Normal Foot Versus Affected Foot. ABSTRACT Introduction Foot pressure changes and morbidity after FHL transfer in chronic retracted TA tears have not been documented. The primary aim of our study is to analyze the peak pressure changes in various zones of the foot
each successive follow-up in the affected foot versus normal foot. The secondary aim is to determine FHL healing and Hypertrophy. Methods This is a prospective study of 46 patients who underwent FHL augmentation for retracted TA tears (between 2019-2022). Included TA tear >6 weeks duration and retraction >2.5cms. Excluded open TA tear, <6 weeks retraction <2.5cms. Depending on the amount of retraction, FHL augmentation combined with TA repair/VY plasty/Turn-down-plasty. Functional outcome was analyzed with the AOFAS hallux metatarsophalangeal scale. Pedobarographic analysis was done pre-operatively at 3,6,9 months,1 year and at the final follow-up. Parameters studied—Forefoot peak pressure(FFPP), Hindfoot peak pressure(HFPP), Great toe peak pressure(GTPP), First Meta Tarso phalangeal peak pressure(MTPP), Area under the pedobarograph and Maximum pressure. At the final follow-up, MRI was done to assess FHL hypertrophy. Statistical analysis was done for these parameters using appropriate tests. Results Study involved 29male & 17female patients, mean age-49.5 years(33-65years)& mean follow-up-26.8 months(14-38.4months). Mean AOFAS score increased from 46.04 ± 7.31 preoperatively to 96.17 ± 3.22 at the final follow-up(P < 0.01). There was gradual improvement noted in all Peak pressures at subsequent follow-ups, and by end of 1-year foot pressures were comparable to normal side FFPP(8.02±3.8N/cm² to 31.35±3 N/cm²),HFPP (36.91±5.7 N/cm² to 25.09±3.7 N/cm²),GTPP(30.78±13.01 N/cm² to23.17±7.5N/cm²),MTPP(5.22±2.64 N/cm²to23.3±9.6 N/cm²). Changes in pressures were statistically significant(<0.001). 6Patients had superficial wound infections healed with antibiotics.23 patients who participated in MRI showed a mean of 27mm muscle thickness & 7.1mm tendon thickness, complete incorporation of the FHL into the calcaneum. Conclusion FHL transfer in Chronic Tendo-achilles tear yields good clinical outcomes and foot peak pressures and loading of the foot, though initially deranged, are restored and comparable to normal limb by the end of 1-year. GTPP and MTPP pressure attributing to loss of FHL has shown progressive improvement at the final follow-up. FHL hypertrophy provides adequate strength to repair and restore foot pressures. Keywords: Chronic Tendo-achilles tear, FHL transfer, pedobarogram, Peak pressure, great toe, forefoot, hindfoot, TA tear Level of evidence III: Prospective comparative study (Normal versus operated foot) “What are the new findings?” • Though Foot pressures are altered, peak pressures of the foot are restored and comparable to normal foot after FHL transfer for chronic retracted tendo-achilles tear. • FHL hypertrophy is observed at the muscle and the distal tendon, thus full Tendo-achilles function is re-established.