

Background and Aims: Pediatric trigger finger (TF) is a rare condition with poorly understood etiology. In 29% of cases it has a primary cause, including mucopolysaccharidosis (MPS). In our Outpatient PM&R clinic, pediatric TF is usual, making the awareness of primary etiologies important. The existence of a fee-free Portuguese project on MPS-genetic-testing (FIND Project) allows the deepening of the diagnosis. The purpose of this study is to present our project to find the association between TF and MPS in a pediatric population. **Methods:** Retrospective study of pediatric patients admitted due to TF (september 2017-march 2022). Isolated trigger thumb cases were excluded. A comprehensive medical history chart was built, focusing on significant clinical findings in MPS patients. Informatic clinical files were reviewed and telephone enquiries performed if information was lacking. **Results:** Seven children were included, ages at diagnosis between 6 months and 2 years. Four patients had bilateral single TF. Two had two TF in the same hand. One had multiple TFs in both hands. None of these children had previous diagnosis of metabolic disease. All clinical charts were reviewed to find history of other symptoms associated with MPS. Only one patient reported having multiple of these. All patients were asked to further evaluate the possibility of MPS, submitting to the FIND Project digit prick test. Presently the blood samples are being evaluated. **Conclusions:** One third of pediatric TF have a primary cause. The main characteristics of pediatric TF associated with underlying MPS are bilateral cases, multiple fingers committed, association with carpal tunnel syndrome and dysmorphic characteristics. Clinicians must be aware of these associations and do further investigation.

6947 - How does the muscular activity of injured athletes with chronic ankle instability change their gait patterns? A systematic review and meta-analysis

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Background and Aims: Chronic Ankle Instability (CAI) is caused by repeated episodes of ankle sprains during athletic and/or repetitive giving way of the ankle. The purpose of this study was to evaluate the effect athletic injuries have on gait analysis and muscle activity (EMG) of athletes. **Methods:** All injured-athletes were compared to healthy controls. Differences in muscle activation between the two groups have been retrieved and documented. The measure of lower limb kinetics was performed by using surface electromyography (EMG) on the following muscles: gastrocnemius medius (MG), rectus femoris (RF), tibialis anterior (TA), peroneus longus (PL), soleus (SOL) and in some cases vastus lateralis (VL) and lastly biceps femoris (BF). The muscle co-contraction index (CCI), which monitors the agonist and antagonist muscles contributing to stabilizing the ankle joint and the Identification of Functional Instability Scale (IdFAI) were analysed as well. **Results:** Each of the 10 studies (level I-III) included in the study, showed significant reduction of the affected muscles near the ankle sprain. The EMG of PL, TA and MG was decreased after the initial injury, causing the instability of the ankle joint overall. In addition, the pooled mean difference between the IdFAI of CAI-athletes and non-CAI athletes was 20 units. Finally, the frontal plane CCI (TA

and PL) was greater in the CAI-group. **Conclusions:** Despite the number of ankles sprains each athlete has had in the past; participants showed significant reduction in muscular activity. Through decreased TA activation, the ankle joint of CAI-athletes seemed to adapt for maintaining the joint stability resulting in changed gait pattern.

References

1. Eils E, Rosenbaum D. A multi-station proprioceptive exercise program in patients with ankle instability. *Med Sci Sports Exerc* 2001;33:1991-8.
2. Gribble PA. *Br J Sports Med*. 2014;48:1014-8.

6902 - Do limb-salvaging procedures for patients with lower limb neoplasms lead to normal gait: A systematic review and meta-analysis of the literature

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Background and Aims: Apart from amputation, the current arsenal of musculoskeletal oncology offers several options, such as: modular endoprosthetic reconstruction; bone graft reconstruction; bone transport; arthrodesis; and rotationplasty. This systematic review aims to assess the effect of the limb-salvaging techniques on the gait parameters of the patients, as measured by gait analysis following the surgery. **Methods:** Databases were systematically searched up to January 2022 for studies that performed gait analysis in patients who received any type of reconstruction surgery after tumor resection of the lower extremity and compared their gait parameters with those of healthy individuals. A meta-analysis of gait parameters was conducted calculating the summary mean differences between tumor and healthy patients using random-effects models. **Results:** The search resulted in 8 comparative cohort studies for endoprosthetic reconstruction involving 187 patients, 4 cohort studies for allograft reconstruction involving 92 patients, 3 cohort studies for rotationplasty involving 88 patients and no comparative studies regarding the rest of the limb-salvaging methods. The vast majority of the studies pertained to the knee, while less published literature was detected concerning the proximal femur and the ankle. Summary statistics indicated that each reconstruction technique negatively affected the gait parameters (gait velocity, stride length, gait cycle duration, cadence) in a statistically significant manner. **Conclusions:** Gait parameters of patients after limb-salvaging procedures are inferior to those of normal individuals. There is need for improvement of the rehabilitation programs in order for the patients' post-operative gait to become as normal as possible.

6887 - Evaluation on the results of the implementation of a rehabilitation program for patients with anterior cruciate ligament reconstruction