

ΤΟ ΕΠΙΚΡΑΤΕΣ ΚΑΙ ΜΗ ΕΠΙΚΡΑΤΕΣ ΑΚΡΟ ΩΣ ΠΑΡΑΓΟΝΤΑΣ ΚΙΝΔΥΝΟΥ ΔΙΑΣΤΡΕΜΜΑΤΟΣ ΠΟΔΟΚΝΗΜΙΚΗΣ. ΜΕΛΕΤΗ ΗΛΕΚΤΡΟΜΗΧΑΝΙΚΗΣ ΚΑΘΥΣΤΕΡΗΣΗΣ.

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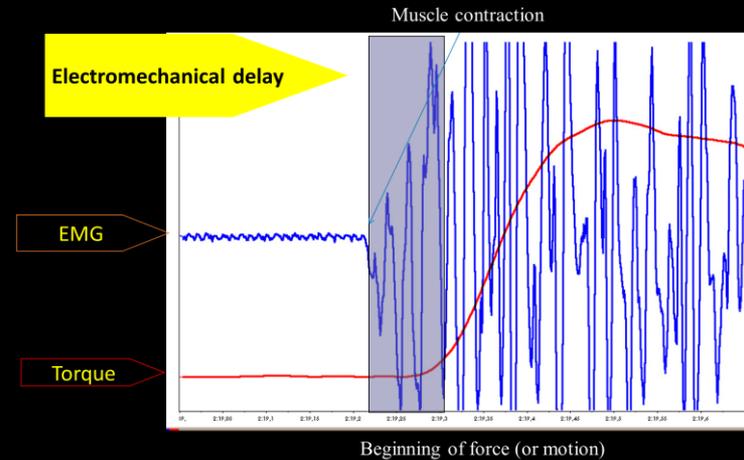
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INTRODUCTION

- ✓ Understanding the mechanisms that contribute to **chronic ankle instability** (CAI) is **essential** for the development of effective rehabilitation and **injury prevention** programs.
- ✓ **Electromechanical delay (EMD)** is an integral part of the peroneal motor response.
- ✓ **EMD can reveal the real effectiveness** of the muscles to provide mechanical response and protection to the ankle, under real-life situations.

WHAT IS EMD?

EMD : “Time interval between muscle contractions and mechanical output”
Cavanagh & Komi 1979



MATERIALS

- ❖ 13 amateur male athletes with no history of lower extremity surgery
- ❖ mean age, 33.7 years
- ❖ median Tegner activity level: 7

METHODS



- ✓ Measurements were taken with the **ankle in neutral position (0 deg)**.
- ✓ **EMG data** were collected by placing two electrodes 3cm below the fibular head along the course of the peroneals and **isokinetic data** were collected with a Biodex system 3 dynamometer.
- ✓ All subjects followed an **isokinetic fatigue protocol** of concentric contractions for both ankle eversion and inversion, until eversion torque fell below 50% of initial torque for three consecutive repetitions.
- ✓ **Repeated ANOVA measurements.**

RESULTS

- ❑ No significant difference was noted between the dominant and non-dominant leg of the volunteers ($p=0.946$)
- ❑ Fatigue caused a significant increase on EMD ($p=0.021$)

DISCUSSION

- ❑ **No significant difference was noted between the dominant and non-dominant leg of the volunteers**
 - This finding implies that in an uninjured athlete both the dominant and the non-dominant leg, seem to be equally exposed or protected to an ankle injury.
 - A recent study demonstrated that exercise training decreases peroneal muscle reaction time after a 6-week eccentric/concentric isokinetic training program in healthy subjects.

Combining these findings rehabilitation programs should focus retraining reaction time to prevent injuries equally to both legs, either dominant or not.

- ❑ **All subjects demonstrated longer peroneal EMD times after fatigue**
 - This finding is consistent with the current literature.
 - It emphasizes the importance of proper conditioning in the prevention of delayed peroneal response.

