FEEDFORWARD POSTURAL ADJUSTMENTS BEFORE SINGLE-LEG DROP LANDING IN SUBJECTS WITH CHRONIC ANKLE INSTABILITY

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INTRODUCTION

Chronic ankle instability (CAI) involves **deregulation of feedforward postural control.**

But the analysis of feedforward mechanisms, including **early and anticipatory postural adjustments,** in tasks close to the **mechanisms of injury** is still missing.

To evaluate feedforward postural adjustments before single-leg drop landing in a dual task context, in both lower limbs, and in CAI.

METHODS

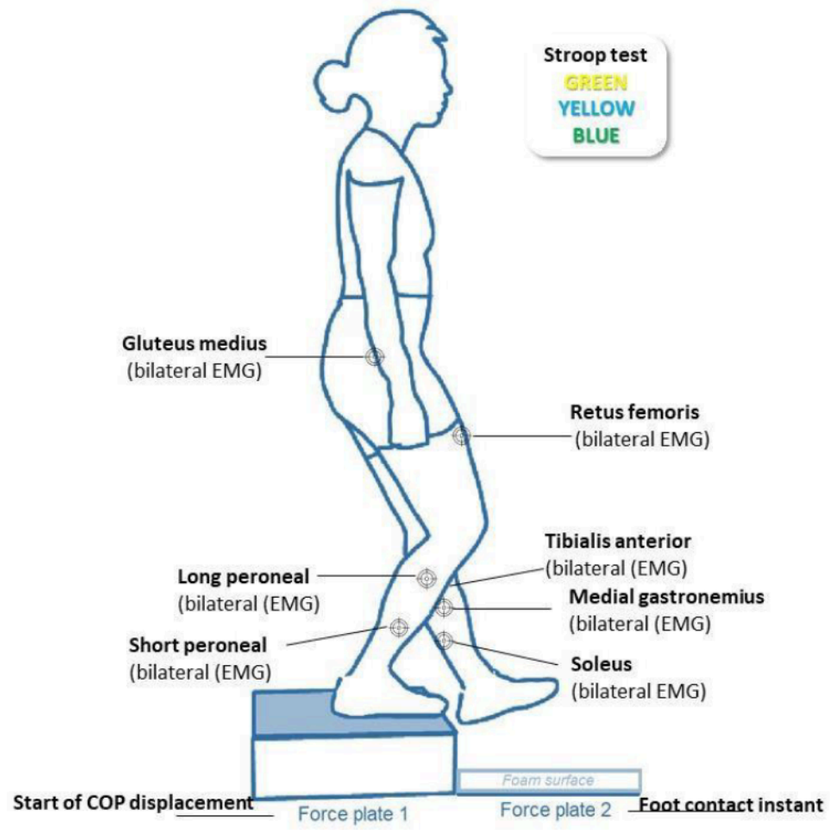
Cross-sectional study

Ethical approval number – 0900

28 athletes
Modalities with increased risk for CAI

Without CAI (n=14)

With CAI (n=14)



CoP shift towards step limb → CoP shift towards stance limb → Landing till step in the ground

Timing and relative muscle activity level

Figure 1: Experimental setup

RESULTS

Table 2: Participants characterization

	Without CAI	With CAI	P-value
Gender	F57.1%; M42.9%	F57.1%; M42.9%	P>0.05
Age	22.4 ±2.68	23.6 ± 3.55	
BMI	22.9±1.80	22.7±1.71	

Regarding **CAI participants:**

- Almost **half** reported **moderate pain and other symptoms** and **moderate limitations in sports** and **quality of life** (FAOS).
- More than **half** presented their last **giving away episode in the last year**.
- Presented a **timing** of muscle activity in the time window of **anticipatory postural adjustments**.

When compared with the control group, the CAI group presented:

CoP shift towards step limb	CoP shift towards stance limb	Landing till step in the ground
No significant differences	**Contralesional limb** ↓ Rectus femoris (stance limb)	**Ipsilesional limb** ↑ Rectus femoris, Tibialis anterior, Short peroneal

CONCLUSION

The CAI group demonstrated bilateral changes in feedforward postural control mechanisms.

Bilateral feedforward mechanisms should be trained in patients after unilateral ankle sprain involving a global limb approach.

REFERENCES

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