# The effectiveness of Nordic Hamstring Exercise compared to Sprint on modifiable risk factors for Hamstring Strain Injury: a systematic review


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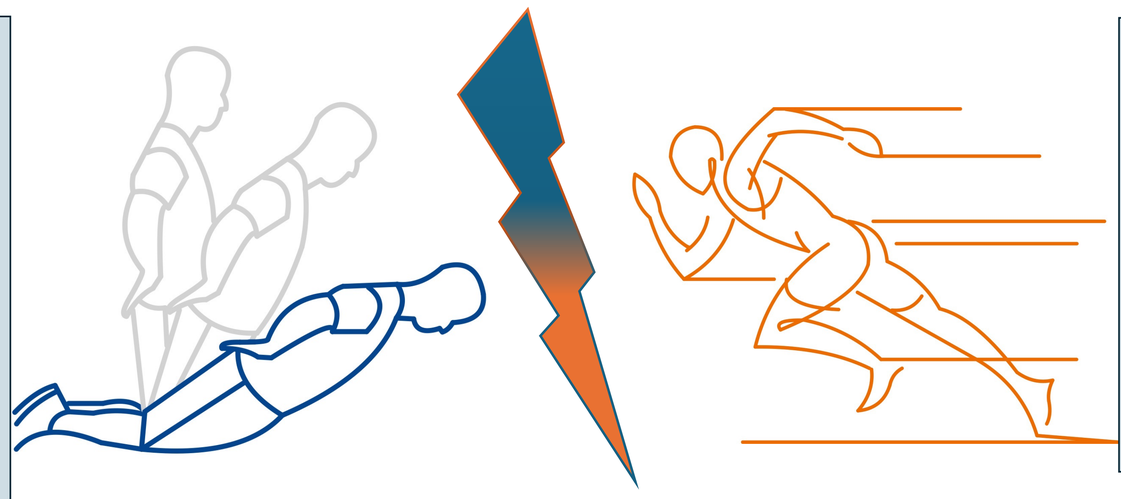
## INTRODUCTION

- Most common injuries in **high-speed** and **direction-change** sports
- **Up to 39%** of all sports injuries
- **Sprint : principal injury** mechanism (62% of HSI)
- 80% of HSI affect **biceps femoris**
- **High recurrence rate**, 12-63% recurrence
- Multiple impacts : competition time loss (17 to 90 days), financial cost, reduced performance
- **NHE :** gold standard eccentric strength exercise, **low compliance**
- **Sprint : underused** in HSI prevention
- Management has challenged clinicians for decades and nowadays



## OBJECTIVES

Compare the effectiveness of NHE and Sprint on the following modifiable risk factors for HSI :

- **Eccentric hamstring strength**
- **Fascicle length of the long head of the biceps femoris**

## METHODOLOGY

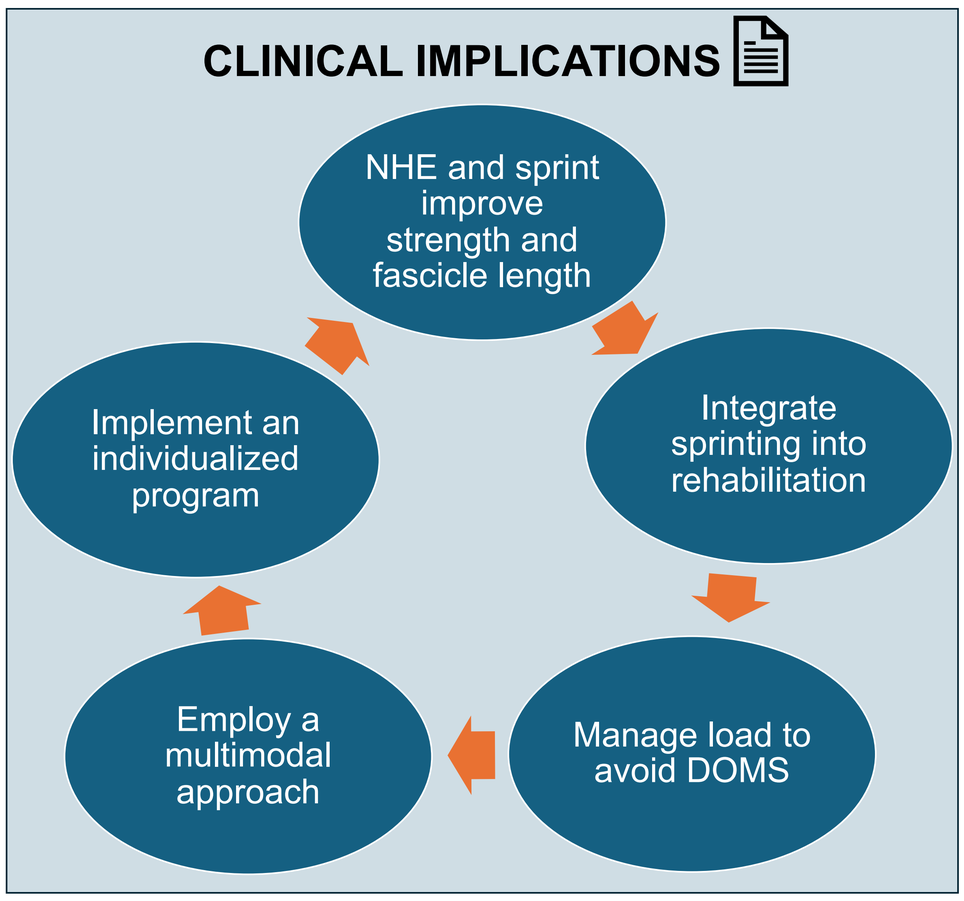
Databases :
Pubmed, Embase, The Cochrane Library and PEDro

Keywords :
Hamstrings, biceps femoris, NHE, sprint, Eccentric strength, fascicle length

Inclusion criteria:
- RCT or comparative studies
- Men or Women
- Healthy athletes

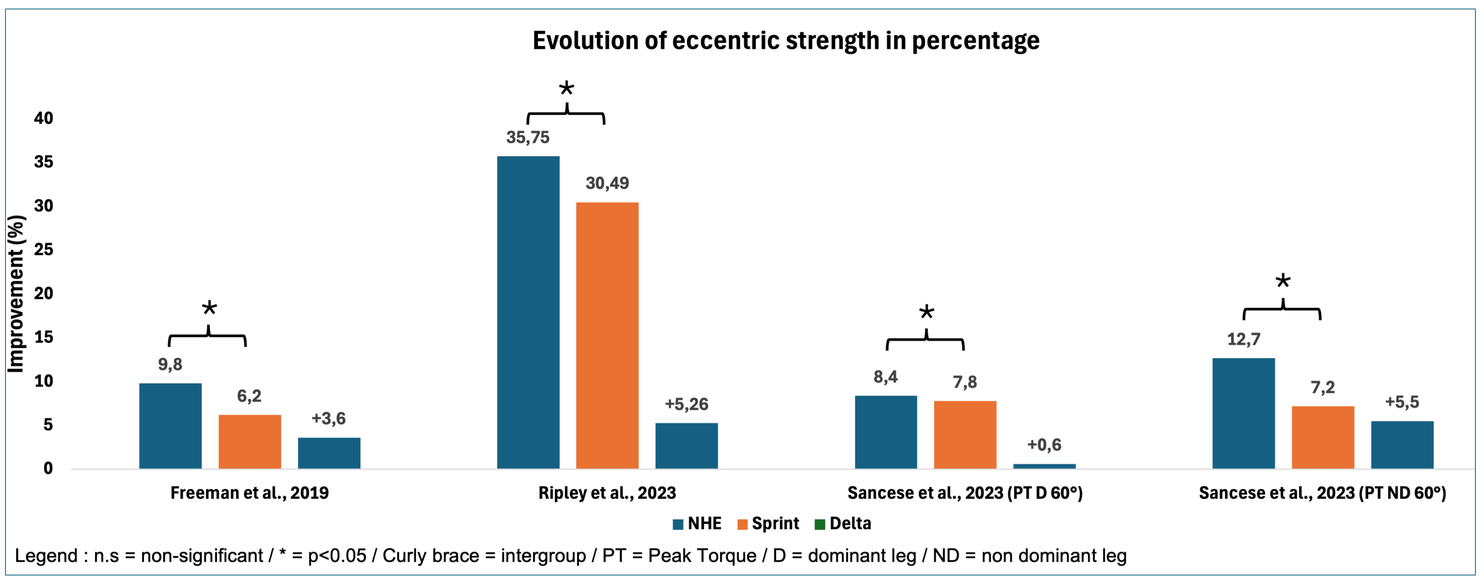
Articles included :
- Freeman et al. (2019)
- Mendiguchia et al. (2020)
- Ripley et al. (2023)
- Sancese et al. (2023)

## CLINICAL IMPLICATIONS



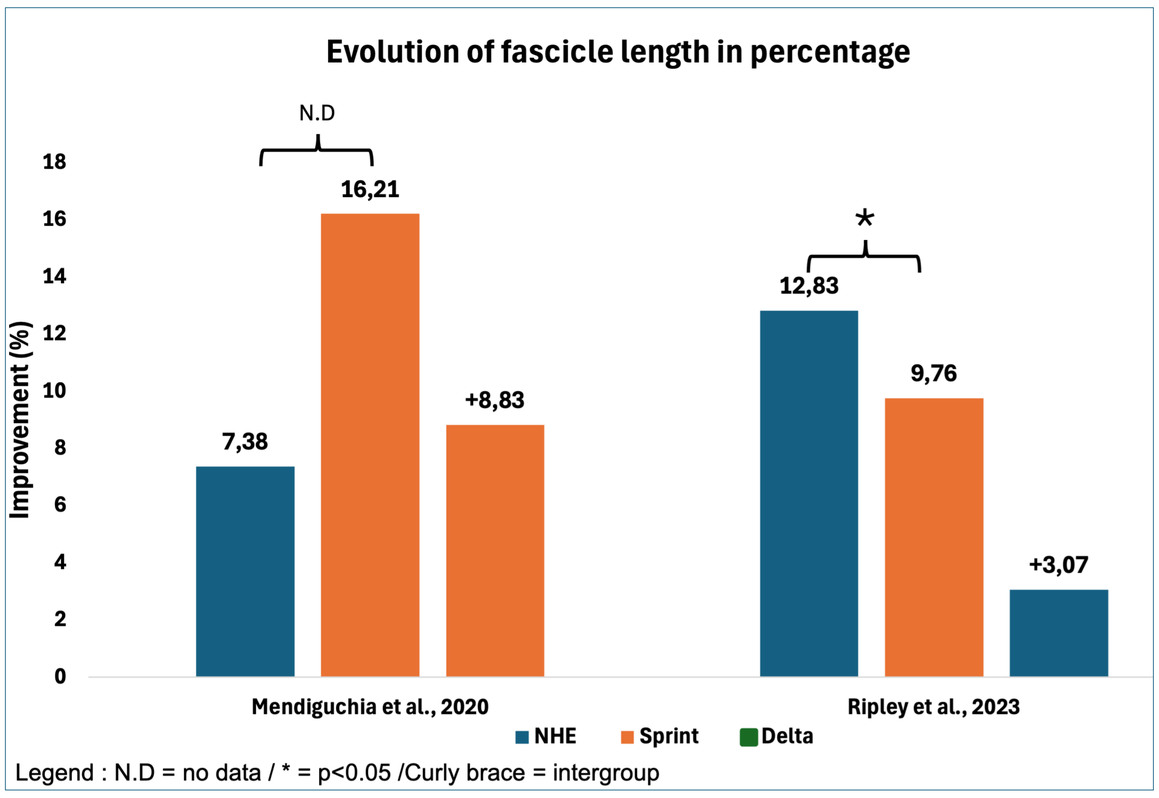

## RESULTS

### ECCENTRIC STRENGTH




- **Significant intragroup** improvements for **NHE and sprint** ($p < 0.05$)
- More marked **intergroup** improvements in favor of the **NHE** group

### FASCICLE LENGTH




- **Intragroup** improvements for **NHE and sprint**, with significance only present in Ripley et al. (2023) ($p < 0.05$)
- **Intergroup** results alternately favoring **NHE or sprint**

## CONCLUSION

- Both NHE and sprint show significant improvements in two key risk factors for hamstring injuries
- Despite its direct relationship with injury, don't forget sprinting
- Further rigorous research is required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