

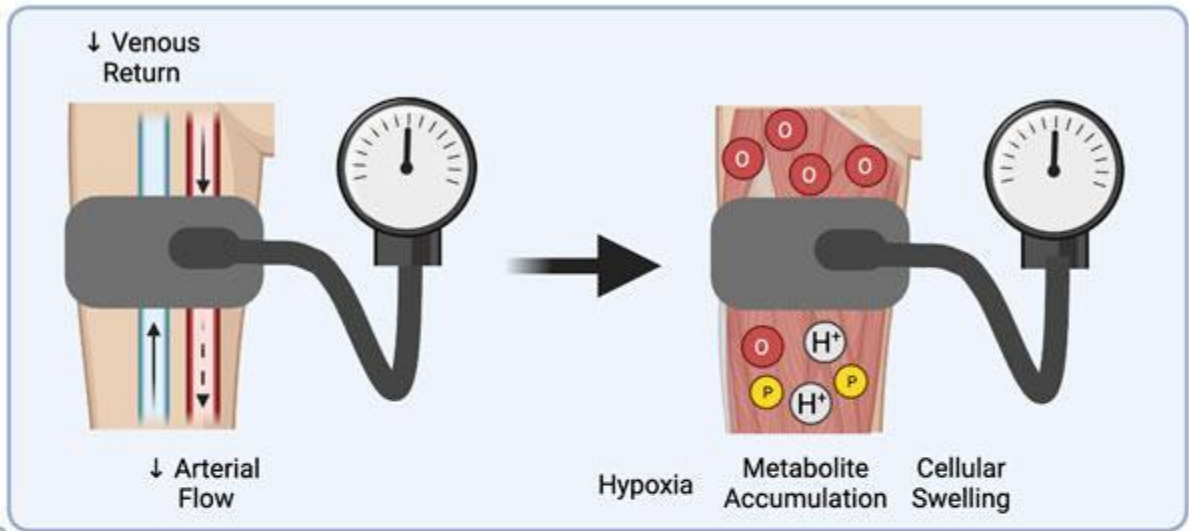
# **Effetti dell'esercizio con Blood Flow Restriction nel paziente affetto da protesi dolorosa**

**Dott**

**Paolo Meli**



# Blood Flow Restriction (BFR)



## Passive Applications



Passive (BFR-P)



Neuromuscular Electrical Stimulation (BFR-NMES)

## Exercise Applications

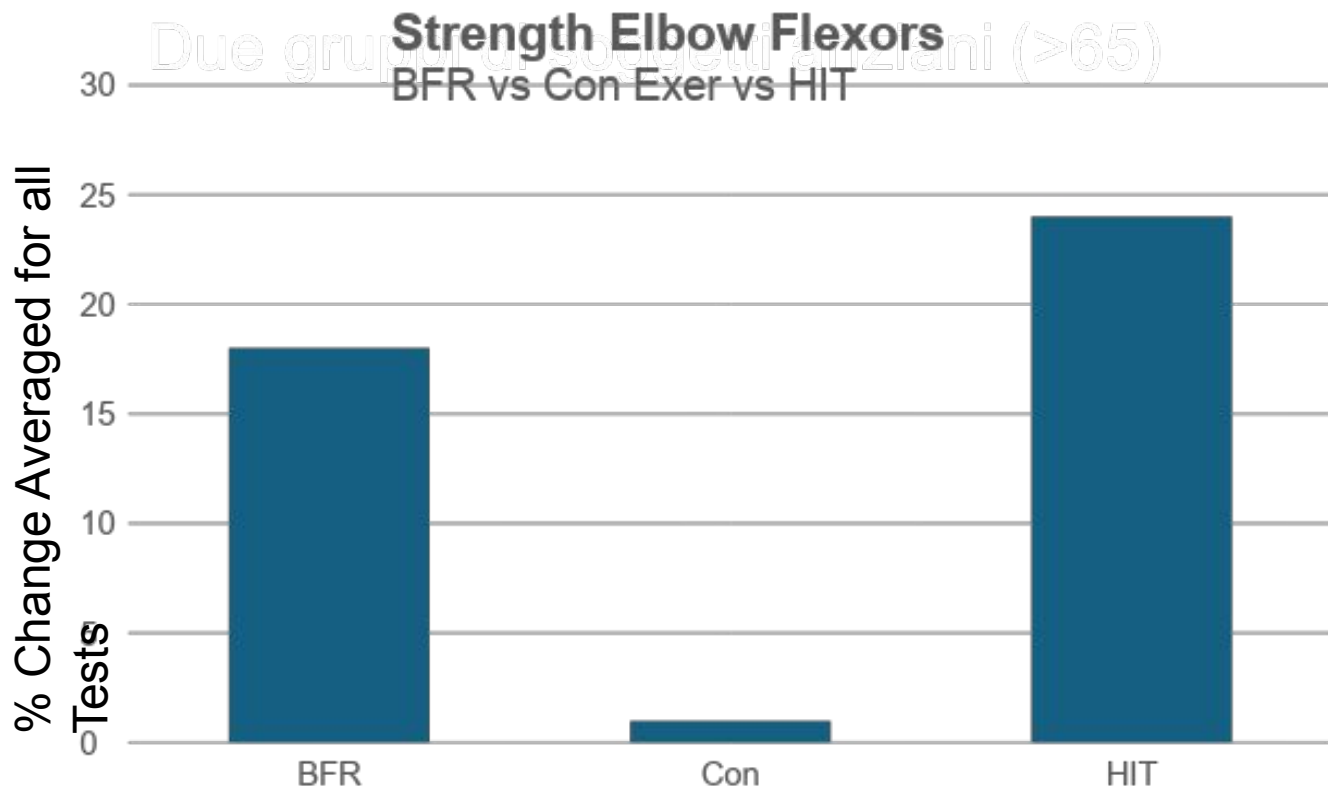


Aerobic Exercise (BFR-AE)



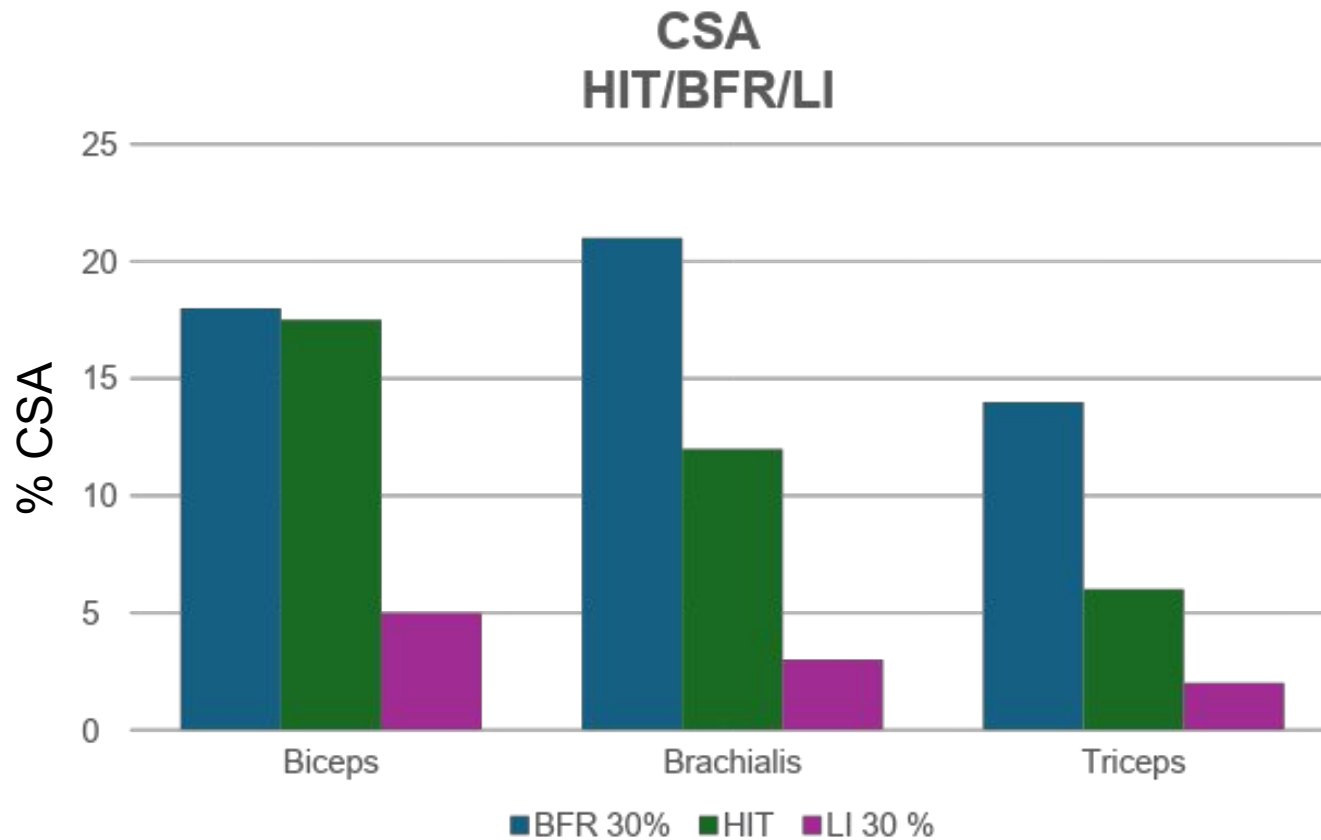
Resistance Exercise (BFR-RE)

# Forza / Ipertrofia



- Assenza di deficit cognitivo in anamnesi
- MMSE > 27/30

# Forza / Ipertrofia



# Forza / Ipertrofia

Jørgensen *et al.*  
*BMC Sports Science, Medicine and Rehabilitation* (2023) 15:141  
<https://doi.org/10.1186/s13102-023-00750-z>

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Medicine and Rehabilitation

RESEARCH

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**Results** Seven RCTs comprising 303 participants (BFR-RT:  $n = 151$ ; HL-RT:  $n = 152$ ) were identified. HL-RT and BFR-RT showed similar gains in dynamic (1-10RM) knee extensor strength and leg press strength, quadriceps cross sectional area, sit-to-stand performance, and patient reported pain and function. There was a moderate effect favoring BFR-RT for increasing maximal isometric knee extensor strength. The grading of certainty in evidence was low-to-very low for all outcome variables.

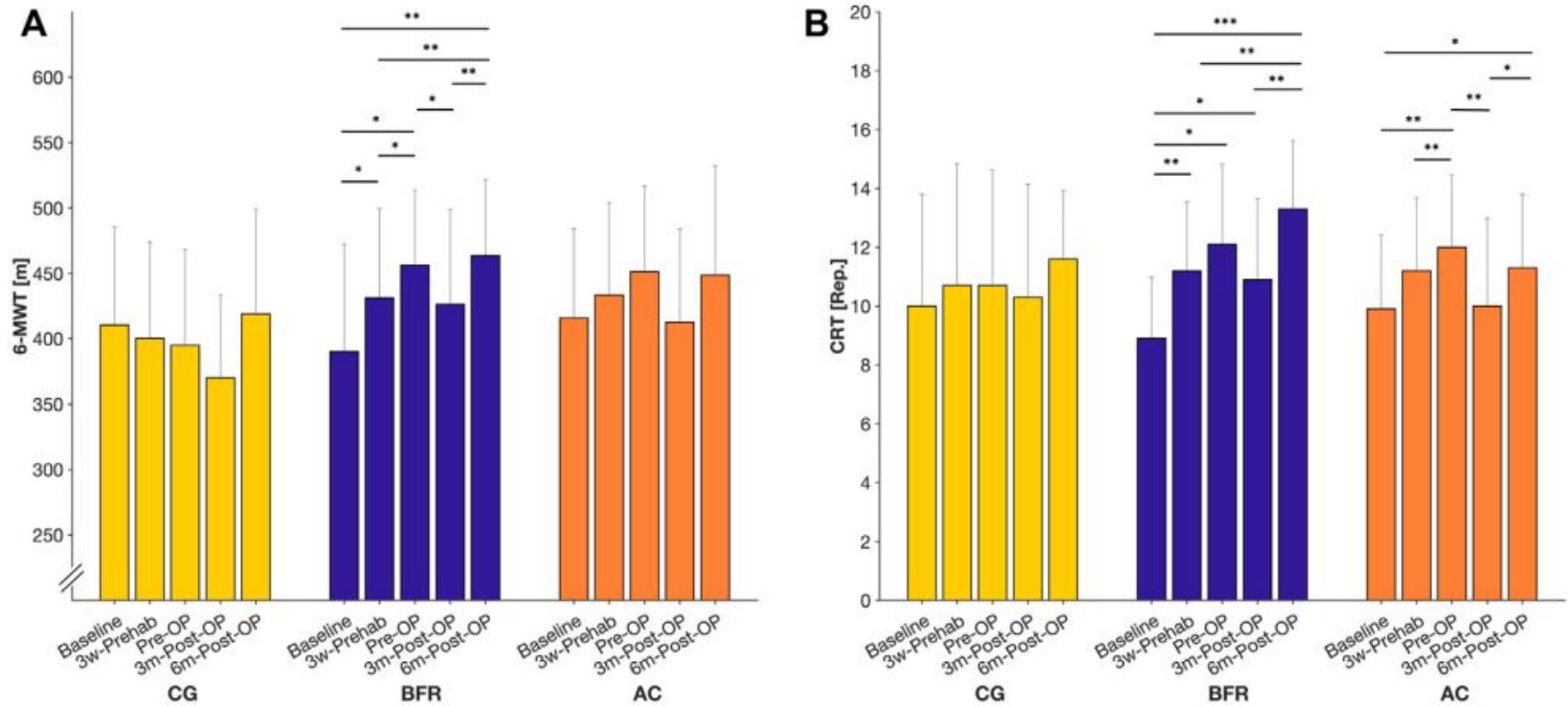
**Conclusion** This systematic review and meta-analysis extends our current knowledge about BFR-RT and HL-RT as equally effective exercise methods for inducing gains in maximal muscle strength in healthy populations, by now also comprising patients suffering from various clinical musculoskeletal conditions. The certainty in the estimates was low-to-very low, prompting the inclusion of future higher-quality trials.

Per Aagaard<sup>4</sup> and Inger Mechlenburg<sup>3,5,6</sup>

Jørgensen  
2003



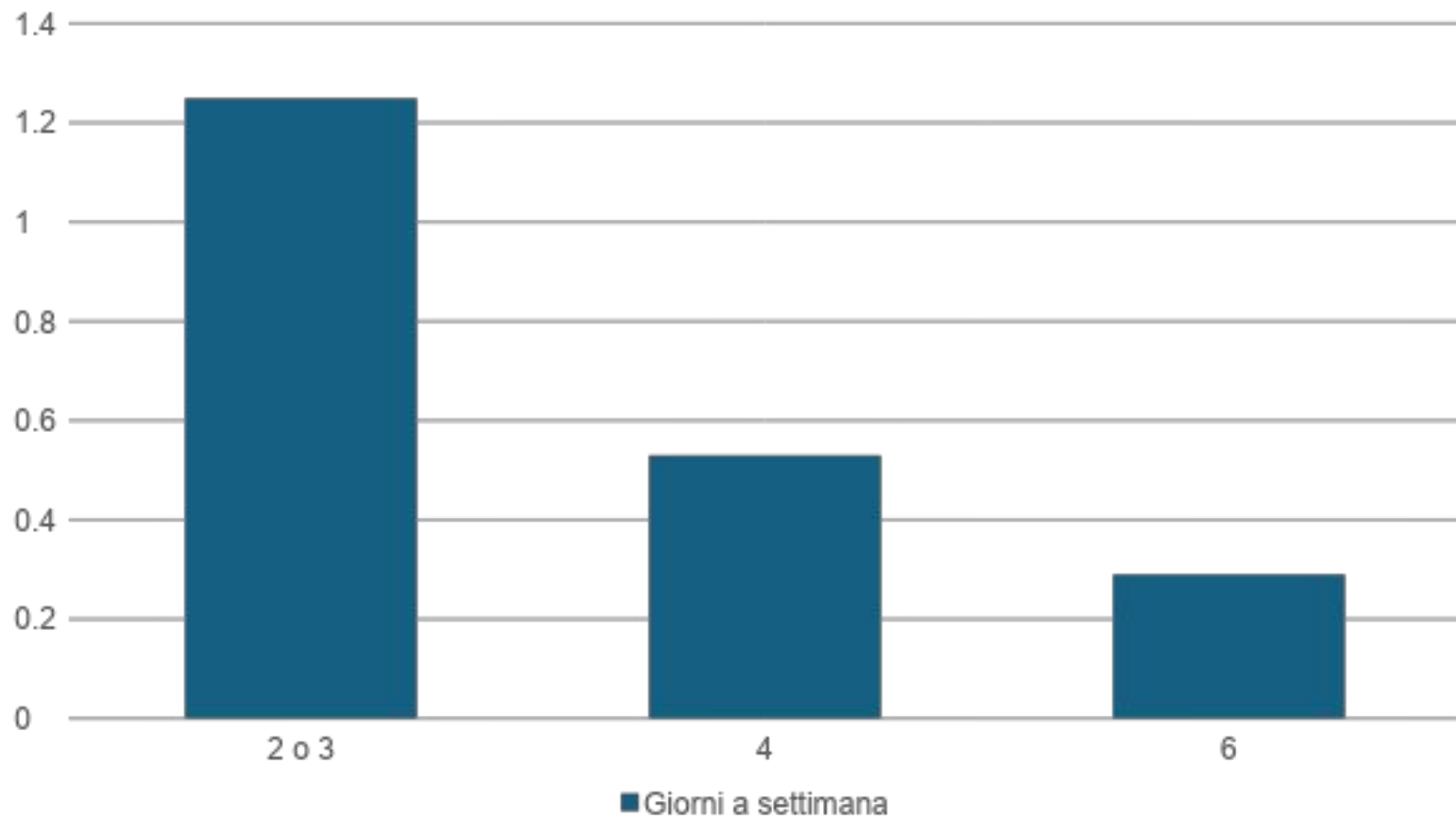
# Recupero Funzionale



**FIGURE 2** | Measures related to the 6-min walking test (6-MWT; **(A)** and chair-rising test (CRT; **(B)**) during prehabilitation- and post-operative period. Data are provided as mean (standard deviation). CON = control group; BFR = BFR-training group; AC = active control group. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ , significant difference within the respective group.

# BFR

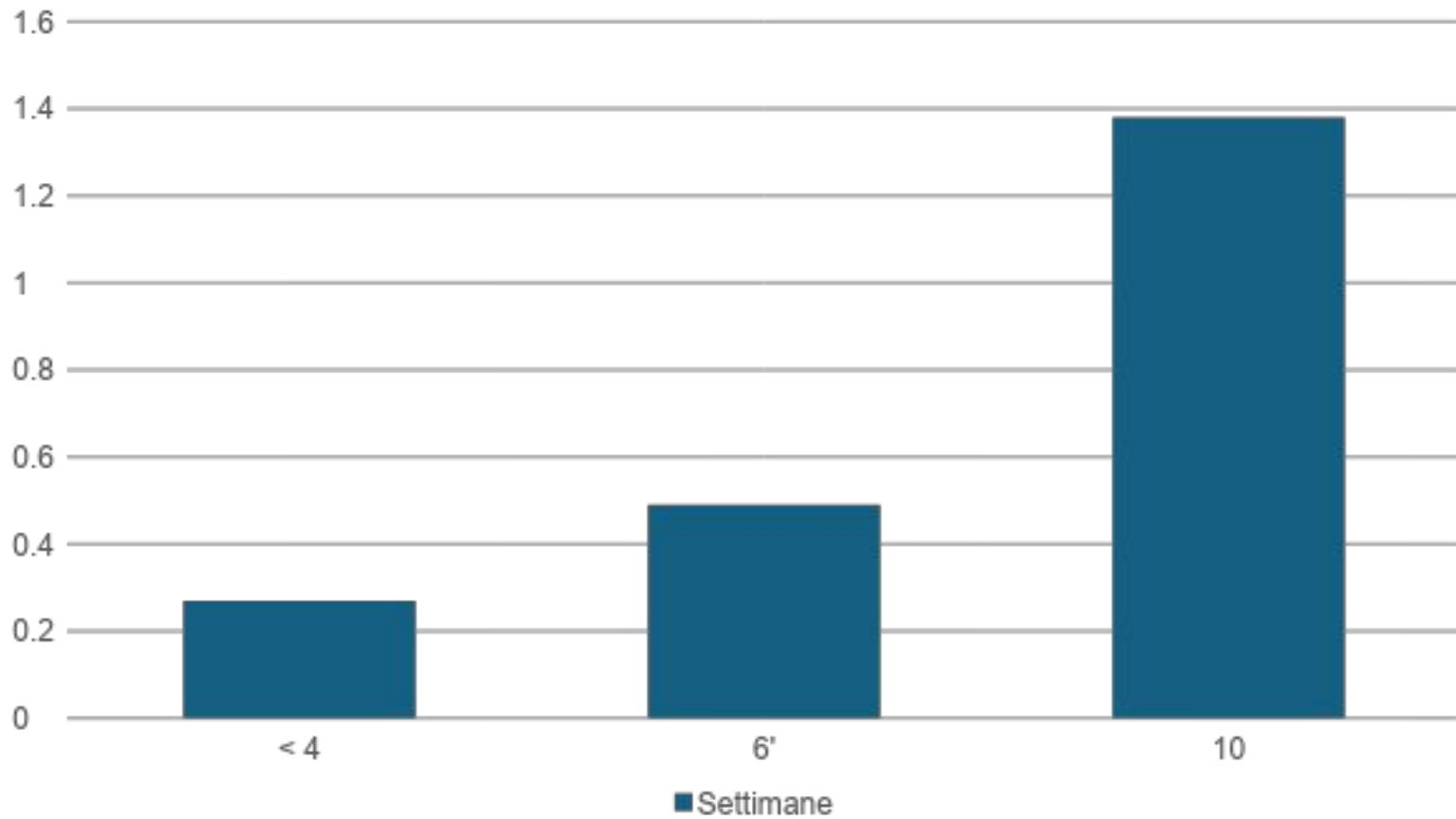
## Frequenza





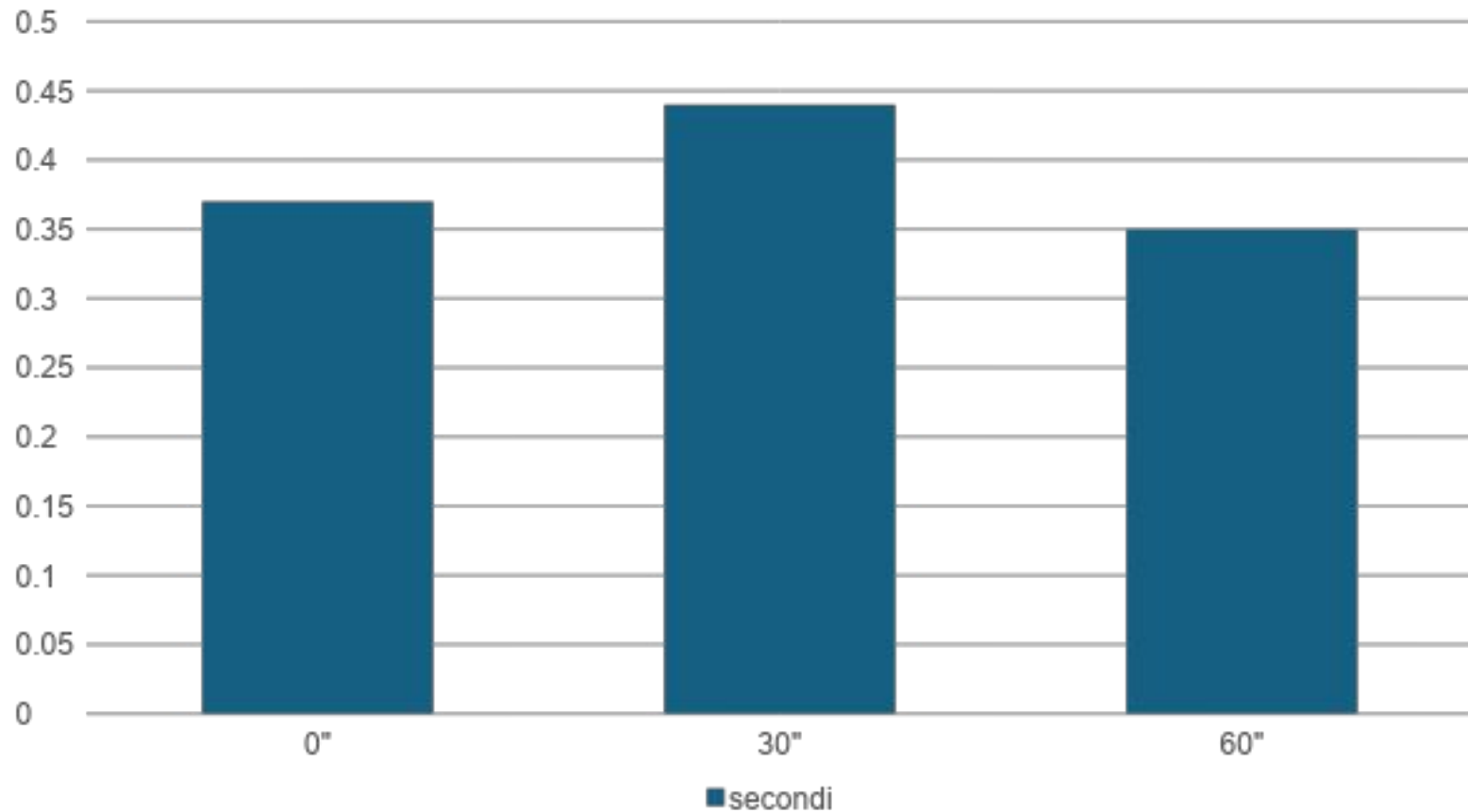
# BFR

Durata



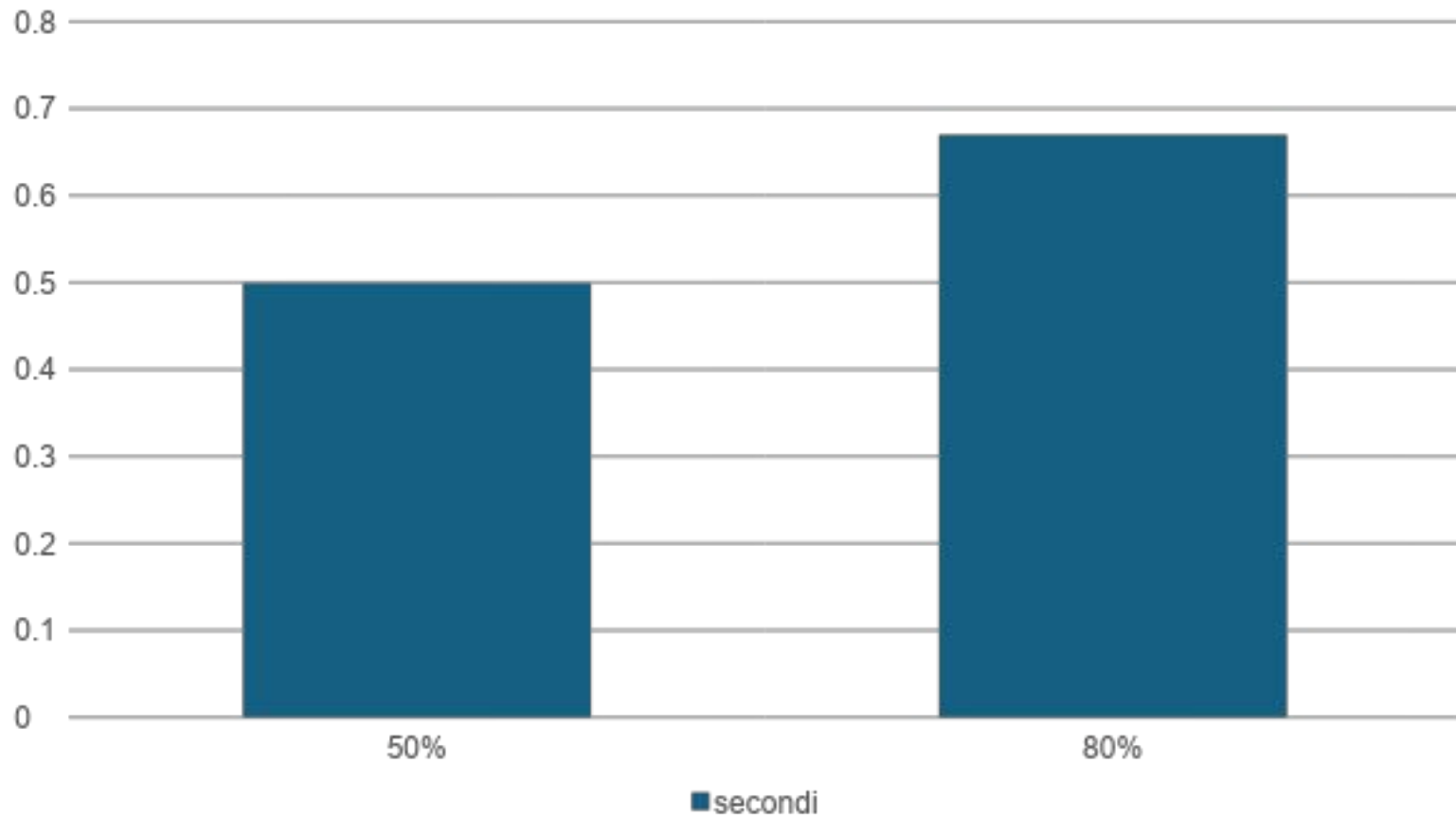
# BFR

## Periodo di riposo



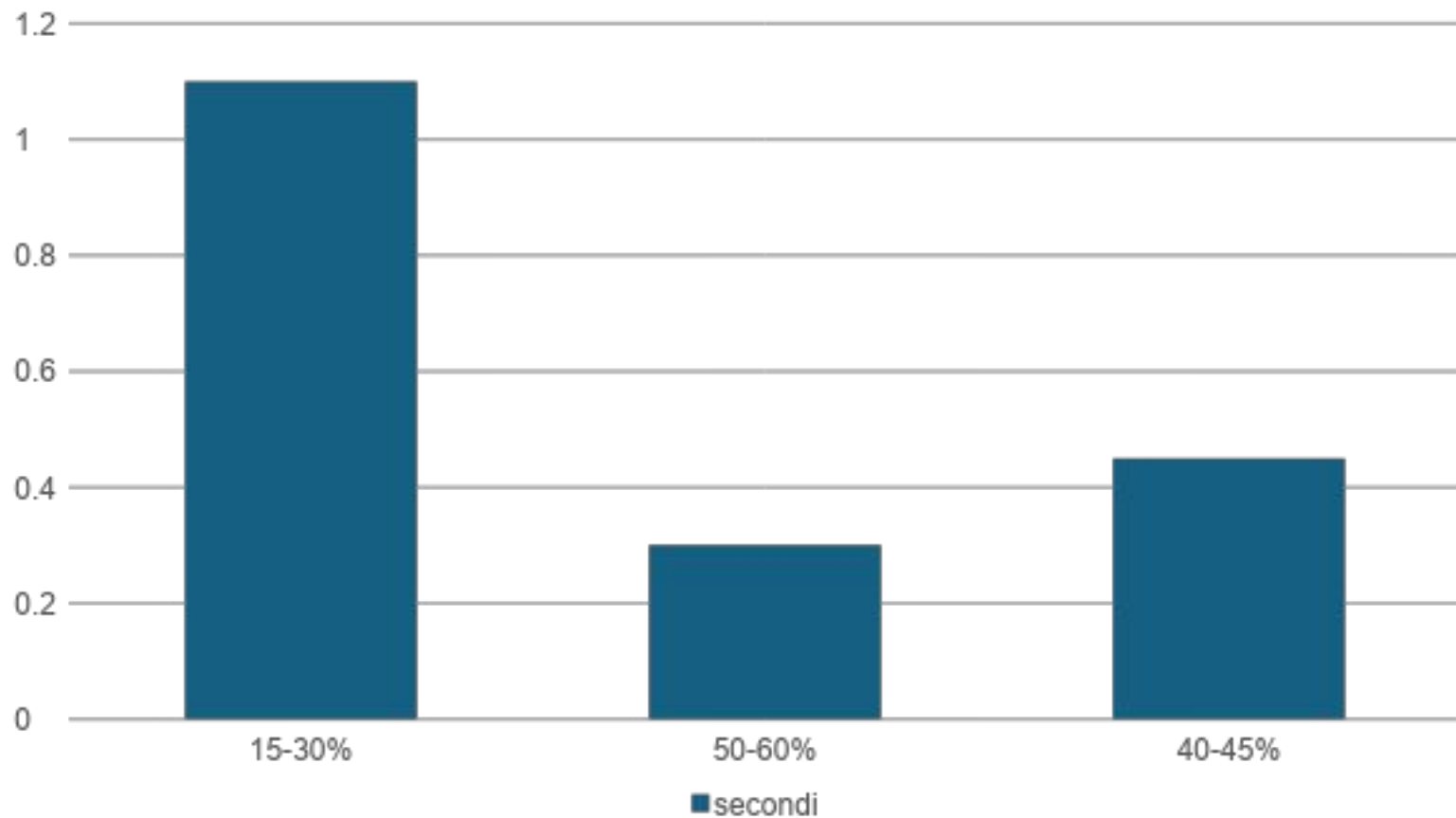
# BFR

## Pressione



# BFR

## Intensità esercizio



# Controindicazioni

- Le evidenze sulla sicurezza relative al BFR sono contrastanti.
- Tumori distali al manicotto
- Anemia falciforme
- Edema severo
- Severa ipertensione
- Le preoccupazioni per la sicurezza riguardano principalmente la formazione di tromboembolia venosa e danni muscolari.
- Attenzione alla presenza di accessi venosi/eventuali ferite
- Obesità grave

