Reliability of a standardized protocol of the single leg heel rise (SLHR) test

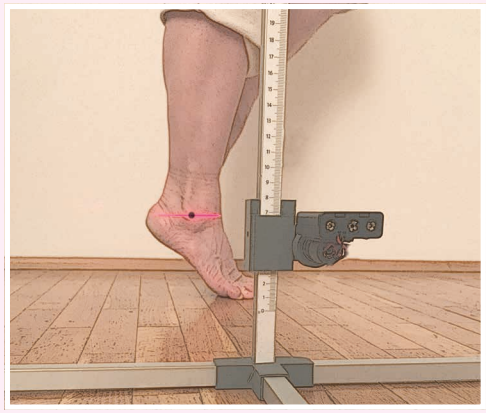
AIMS

- To examine the reliability of a standardized SLHR test protocol.
- To investigate the relationship between SLHR repetitions, SLHR total work, and both maximal voluntary isometric contraction (MVIC) and reactive strength outcomes of the calf muscles.

METHODS

21 students (8 females, 13 males) were assessed in two data collection sessions for:

- SLHR outcomes: number of repetitions, height of heel rises, total positive work performed
- Unilateral MVIC of the calf muscles on a force plate
- Reactive strength using the drop jump test



RESULTS

- Intraclass correlation coefficient (ICC) / Coefficient of variability (CV) for:
  - SLHR Repetitions: ICC = 0.91, 95% CI: 0.75 to 0.97; CV= 8.1-8.7%
  - Total positive work performed: ICC= 0.96, 95% CI: 0.86 to 0.99; CV: 6.2 – 10.2%
- No significant correlation between SLHR repetitions, MVIC, and reactive strength.
- A moderate correlation between the total positive work performed in the SLHR and reactive strength outcomes.

CONCLUSION

- The SLHR test provides reliable measures for lower leg muscular endurance but does not predict plantar flexor maximal strength or reactive strength.
- We recommend using this standardized protocol in the screening of athletes and dancers.

Reference: Schrefl, A., Kolokythas, N., Stamm, M., Erlacher, D., & Schärli, A. (2024). Reliability of a standardized protocol of the Single Leg Heel Rise Test. Current Issues in Sport Science, 9, Article 009. https://doi.org/10.36950/2024.9ciss009