

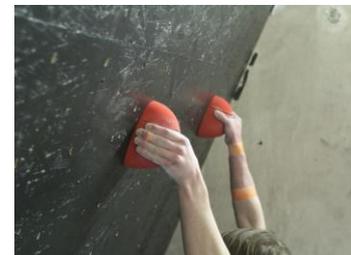
EFFECT OF MOONBOARD TRAINING ON GRIP STRENGTH IN BOULDERING. Medernach, J., Kleinöder, H., Lötzerich, H. German Sport University Cologne.

INTRODUCTION

Indoor Bouldering (IB) consists of low height climbing routes completed on artificial walls with landing mats for protection. Although IB is increasingly popular and competitive, scientific research remains sparse and information on ideal training regimens is limited. The Moonboard (MB) is a 3.15 m high and 2.44 m wide climbing wall with online database for standardized training routes. The study aims to investigate the effect of MB training on grip strength which is a key factor in IB.

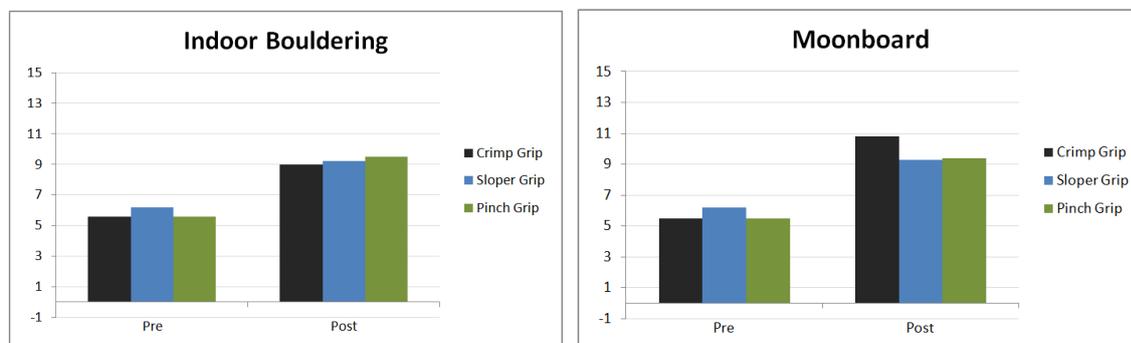
METHODS

23 male Boulders (25.5±4.6 yrs; 1.79±0.06 m; 69.8±5.8 kg; 7±3 yrs climbing; 7b+ Fb mean climbing ability) were randomly allocated to a 4-week IB ($n=12$) and MB ($n=11$) training regimen (3 sessions of 150 min per week). Previous studies describe dead hanging as valid and reliable to assess grip strength in climbing. PRE and POST-tests (48 hrs rest prior testing) consist of dead hanging on the common grip positions (a) Crimp (19 mm, METOLIUS, USA), (b) Sloper (Nr.02 SKYROOF, GER), and (c) Pinch (Nr.01 SKYROOF, GER) fixed at 20°. The highest score of 3 attempts with an accuracy of 0.1 s was recorded for each grip. Indoor facilities provided standard framework conditions (temp 15-17 °C; hum 62-69 %). All subjects gave written informed consent and the study had ethical approval from the University.



RESULTS

Paired t-tests found significant mean increases for IB and MB on Crimp (3.3±2.8 s, $p=.002$; 5.3±4.7 s, $p=.004$), Sloper (3.1±2.4 s, $p=.001$; 3.1±2.3 s, $p=.001$), and Pinch grip (3.8±2.4 s, $p<.000$; 3.9±2.8 s, $p=.001$). Mean gains ranged from 3.1 - 5.3 s with no significant differences between IB and MB.



DISCUSSION

To the best of our knowledge, this is the first study to investigate grip strength in IB and MB. Our findings suggest that both IB and MB are adequate methods to improve grip strength. It is likely that main advantages are functional strength implementations in combination with technical and mental skills as well as the complexity of commonly used grip positions. We declare no conflict of interest and no sources of funding.

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