

Increasing the Rate of Force Development in climbers of various levels

Data/Research

data sources

real world data collection, with various experience levels. Data can be found with both previously conducted studies (for comparison), and gathering new data from climbing gyms

Secondary sources: previous studies conducted on finger strength

comparing grip strength across grip strength-required sports (i.e. baseball, football)

how information is collected to determine the level of possible analysis? For example, is technique or forearm strength a measured statistic?

What type of data is being evaluated for finger strength (eg time of hang at x weight, etc)

reach out to climbing content creators? (eg youtube, Instagram, etc)

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Current research

"Despite her program's success, López is quick to point out that her work "is just a grain in the desert." She says that replicate studies need to be conducted using climbers of varying skill. (Her subjects are usually elite-level athletes.)" - Chrobak, Ula. "Climber Eva López Has a PhD in Finger Strength". US: Outside Online, 2018

Questions

primary

Can RFD/grip strength studies be adapted to non-elite/world-class climbing athletes?

Can the development of the forearms contribute to an increase in RFD?

can developing more pinch strength and forearm strength in addition to finger strength contribute to an increase in rate of force development in climbers of various levels?

how do split climbers into study groups of various levels of experience?

how many subjects would be necessary to be able to draw conclusions or compare research

could type of climber also be taken into consideration. eg: gym vs crag, boulder vs lead, etc (reference other studies for this)?

how effective are these techniques with non-elite climbers as compared to elite? in combination with forearm work?

can techniques (such as using resistance bands to lighten load on fingers) be used effectively to "lower the bar" for the development of finger strength/RFD

can a protocol be developed irrespective of specific boards (ie using what climbers have available to them)

What am I defining?

What is RFD?

define hand/body positions?

secondary

What if: the elite climbers are just better at athletics in general? Would there be a way to show/visualise the controlling factors between elite and non-elite?

can finger planks in addition to hangboarding contribute to an increase in rate of force development in climbers of various levels?

does finger size affect grip? (fat fingers vs skinny)

for coaches/commentators: are there quantitative indicators and categorizations (speed, techniques, change over time etc.) that would demonstrate an increase in finger strength?

is there a way to measure the force being applied to the training hold (ie using IoT force sensors)

can i develop a training board for the study? with basic holds and force sensors, to place at the gym

What other sports necessitate a high level of grip strength? *for which some of these techniques could apply

Objectives

To determine the possible gains in strength development provided by a more comprehensive approach to finger strength training

Assess the success of training protocols developed for elite climbers, adapted to various skill levels

Share and provide practical applications/elements for an ongoing discussion

create/modify training protocols for a 6? week period

ie 3 finger drag, 4 finger half crimp/open hand, pinch, forearm.

body position/arm angles on hang

time of hang/rest. weekly periodization, etc

type of hangboards to use

provide a visual(s) that provides a summary of the data

additional visuals as needed (eg the data collected from participants profiles)

Audiences

climbing athletes, climbing researchers, climbing coaches/trainers

Sports that require use/increase in grip strength?

gain a better understanding of the methods of building climbing strength.

Put into practice/test the findings and provide a critique

rock-climbing is gaining popularity. Similar to racing athletes trying to shave off seconds, methods have been developed to increase grip strength and technique

context

Determine levels of experience/gather climber profiles

- climbing goals/target?
- how long climbing? frequency?
- (sets experience levels)?
- max grade?
- target/goal grade? if applicable...
- types (boulder, lead, etc)?
- hangboarding yes/no? frequency?
- other training? (eg stretching, core, general strength work, cardio/type, etc)

should data be anonymous?

Primary source: raw data from study participants (gym members)

can an online survey be developed to send in results? aka gathering additional/open source information

should I have tiers of data? eg members in NY/gym vs other states/open source