



Dr. Tyler Nelson's New Active Finger Strength Training Protocols

Jędrzej March 23, 2023 3 Comments

"After 8 weeks of training, my finger strength increased by 17%! Thanks again for your wonderful site and your help selecting a plan! I can't wait to go crush!"

< **Carson (V8/7B)**
Boulderer (US)



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Dr. Tyler Nelson's New Active Finger Strength Training Protocols - Introduction

Dr. Tyler Nelson is among the most prolific coaches and climbing influencers today. He takes nothing for granted and constantly looks for new, most effective, and safest ways to improve our climbing skills.

He is the author of many popular climbing training protocols, the most well-known being the "Simplest" [Finger Training Program](#) and [Density Hangs](#), which I've covered in my earlier posts ¹². He is also a frequent guest on climbing training podcasts, including the [Training Beta Podcast](#), the [Nugget Climbing Podcast](#), and the [Power Company Climbing Podcast](#).

Dr. Nelson recently wrote two thought-provoking articles for Climbing.com ([Part 1](#) and [Part 2](#)), explaining his latest discoveries in finger strength training ³. So hold on tight because the world of some of you hangboarders and system board enthusiasts may soon be turned upside down!

The limits of heavy fingerboard training

Some of you might wonder why we were even having this discussion. The best way to get super strong fingers is to do weighted hangs, right? And yes, I know many climbers who've reached superhuman finger strength by adding 50+ kg to their harness and hanging from small edges. Paul is a great example, and you can read his story [in this article](#) ⁴.

Those who don't like lifting heavy might choose to do one-arm hangs, which gives slightly different adaptations, but it's about the same thing - putting a heavy load on your fingers and hanging statically for 3 - 12 seconds. Sports scientists call this mode of training yielding isometrics - your forearm muscles are trying to prevent your fingers from opening.

At first, this feels great - you're quickly increasing added weight every week, and progress is tangible for a month or two. For example, you may rapidly increase your MVC-7 to bodyweight ratio from 160% to 170%. But after a while, you'll inevitably see progress stalling, and it will become increasingly difficult for you to grind through those high-volume Bechtel's Ladders sessions.



rophy program, like the 7/3 Repeaters, for 8 - 12 weeks and then
tely, chances are that the results will not improve but will be

significantly lower than before you started doing Repeaters. How frustrating! Even worse, though you may see measurable gains on the hangboard regarding the loads you can hold, the transfer to climbing harder may be limited.

So what's the problem? Why aren't you getting noticeably stronger and better at climbing despite doing weighted hangs? The most straightforward answer is that weighted hangs do not necessarily trigger climbing-specific adaptations. Yes, you can add more load to your harness while hanging, but could you move off a hold with this load? No way, right?

The thing is that although your hangs become heavier, even 1.5 – 2.0 of your body weight, on the climbing wall, your fingers never see such supra-maximal eccentric loads. And it's not that eccentric loading is bad. For example, our fingers generate rapid eccentric forces when latching onto a hold when deadpointing. It's just that the response is dependent on the load. The strength response goes away as soon as you remove the excess weight. According to Dr. Nelson, that's the true limiter of heavy fingerboarding.

How to use fingerboards effectively

Contrary to common belief, hangboards are an excellent training tool for beginner climbers. When you're new to climbing, you'll typically do a lot of climbing on big holds, which doesn't stimulate your fingers to adapt to grabbing small holds like crimps and two-finger pockets. So that's a great time to embark on some introductory hangboard protocols to get your fingers used to high loads. Then, as you enter higher grades, you won't be surprised by a sudden finger tweak when you cut your feet while crimping. The routines worth considering include [Hangboard Moving Hangs](#), [Density Hangs](#), or [7/3 Repeaters](#) ⁵⁶⁷.

Just be mindful of your total training volume. It's best to keep it constant by replacing one of your weekly bouldering sessions with a hangboard session or carefully increasing volume in small steps. Otherwise, you could get injured. Remember that most injuries stem not from increased training loads but from sudden spikes in training volume when we add a new exercise into the mix.

If your [MVC-7](#) on a 20 mm edge is between 125 - 160% body weight, then you're likely an intermediate climber with a fair bit of climbing under your belt ⁸. That's the perfect time to incorporate weighted hangs into your climbing schedule. You'll reap the greatest benefit from your training efforts, and the transfer to actual climbing will likely be noticeable. However, as soon as you hit a plateau, you need to think about changing your strategy because constant shifting between [Hörst's 7/53](#), [Bechtel's Ladders](#), and [Eva López MaxHangs](#) isn't going to move things forward ⁹¹⁰¹¹.



that the hangboard can also be an excellent finger rehab tool. If you can use the hangboard to progressively load your fingers into the discomfort range while staying below the pain threshold. The fingerboard makes it easy to control the load and gradually increase it from session to session until you can climb at your max again.

Finger strength as a skill

According to Dr. Nelson, once you've reached a certain high level of finger strength, weighted hangs will not necessarily help you that much. In the best-case scenario, you'll see diminishing returns for your efforts. However, that doesn't necessarily mean that even at a high finger strength level, doing weighted hangs is pointless. I know climbers who could correlate progress on the rock with the increasing weighted hang load using my [Finger Strength Analyzer 2.0](#) tool ¹². Still, such training is risky, and the question stays whether it's the best time allocation for them.

I understand... you're a badass and that kind of loading is nothing for you and you always have trained with a 70 pound weight. By all means, keep after it...especially since you keep getting better year after year, right?

Steve Bechtel, *Climb Strong Hangboard Manual 2018*

In one of his [IG posts](#), Dr. Nelson explains that finger strength is a skill. In simple terms, what that means is that you need to learn how to grab difficult holds. Grabbing pinches, pockets, and crimps requires specific muscle coordination, which cannot be developed by hanging off flat hangboard edges.

Moreover, because of intermuscular coordination, heavy training on medium (15 - 20 mm) to large (20 - 40 mm edges) is unlikely to transfer to small (8 - 15 mm) or micros (smaller than 8 mm). Once your muscles are well coordinated, giving them an added strength boost may be worthwhile by engaging in a specific recruitment protocol., but keep the training cycle short, e.g., 3 - 8 weeks maximum.

Beyond weighted hangs - system boards

Now we know that to climb harder, we must practice grabbing small holds and treat it as a skill. But, wait, system boards have small holds! Yes, but it turns out that the way most of us use system boards doesn't necessarily make our fingers that much stronger.

According to Dr. Nelson, system boards, such as the Moonboard, Kilter Board, or the Tension Board, were designed to train, yes, you guessed it, tension - hence the name. However, very soon, boulderers



...s placed wide apart was super cool, and we all got carried away

Such training does improve finger strength and power, but the success on an app problem is often decided by our fingers' RFD (Rate of Force Development) and not pure force. That means that we're limited by how quickly we can generate a high percentage of our MVC and not by how high our MVC is.

On top of that, although powerful board climbing is fun, it also takes a long time to recover from. It taxes the fingers, shoulders, and nervous system heavily, so for most people, it can't be done on a regular basis unless you want to end up injured quickly. That's an issue because quick recovery and frequent low-volume training is what we need for effective coordination and recruitment training.

But there's also good news! System boards can be used for effective finger strength training. All you need to do is "turn off the lights." Instead of logging benchmark problems in your Moonboard app, you're better off using open feet and making short slow moves between closely spaced, challenging holds. It's like using the system board as a fingerboard but with a wide variety of more climbing-specific holds. Dr. Nelson calls this drill Finger Strength Training on the Wall. Here's a detailed description of the drill:

- Find a system board, such as a Moonboard, Kilterboard, Tensionboard, a spray wall, or even a campus board with feet support.
- Choose a wall angle that best suits your climbing preference, to optimize how the training transfers to outdoor performance.
- Each set involves climbing up and around the climbing wall on as hard/small handholds as possible for about 45 - 50 seconds.
- Make short controlled moves with your hands, holding each position for 4 - 7 seconds while searching for feet. It's not about power and making hard moves but about holding fast.
- Choose footholds in such a way as to make holding with your fingers challenging.
- Rest 3 - 4 minutes between sets and perform 5 - 10 sets per session.
- Adjust the difficulty as you progress through the session. As you're getting tired, choose slightly better holds to ensure you can complete the entire routine.
- End the session when you can't finish the exercise, even if that means completing less than 5 - 10 sets.
- Don't finish the session with low-intensity climbing. This would only extend the recovery time and increase injury risk. Instead, do a bit of prehab work and stretching.

Perform this routine 2 - 3 times per week during a 3 - 4-week strength block before a performance cycle. As you improve, increase the number of moves per set, use smaller edges, and do more sets. The great thing about the protocol is that it takes little time to recover from a strength training session like this.

Finger Strength Training on the Wall protocol summary.




Finger Strength Training on the Wall	
Sets	5 - 10
Moves/set	6 - 12
Hold time [s]	4 - 7
Rest betw. sets [min]	3 - 4
TUT [s]	4 - 10
Total time [min]	15 - 40

By turning the lights off and spending more time practicing grabbing smaller holds, you can gain both hypertrophy and coordination. Once you reach a certain finger strength level, then you need to progress into the more powerful climbing style in another training phase, which is typical for powerful board climbing.

video 7 45 degree wall

Video 1: Finger Strength Training on the Wall demo video.

Isolated Active Finger Recruitment Pulls



son's got you covered. There's a remarkably simple and effective
itine. It's characterized by high intensity and low volume, so you'll
recover quickly. You can even use it as a primer before bouldering or sport climbing.

All you need is a firmly fixed portable edge to pull on. You may use a platform or tie a sling around your foot while standing. The goal of the exercise is to pull as hard as you can for about 3 seconds by activating your finger flexors only. That's all that's needed to trigger active recruitment adaptations.

Don't pull with your back. Instead, find a position where your arm is extended, and your fingers are relaxed. Now flex your fingers as hard as you can. Don't pull rapidly but aim for a slow force buildup within that 3-second time frame. Next, rest for about 5 seconds, change hands, and repeat the procedure. Perform 3 – 4 pulls per hand. Then rest for 3 -4 minutes. Aim for 5 sets. Perform this drill 3 – 4 times per week.

Table 2: Isolated Active Recruitment Pulls protocol summary.

Isolated Active Recruitment Pulls	
Sets	5
Pulls/set/hand	3 - 4
Hold time [s]	3
Rest betw. sets [min]	3 - 4
TUT [s]	45
Total time [min]	15 - 20



Video 2: Isolated Active Finger Recruitment Pulls demo video.

This exercise is so simple that you may even use your office desk as the pulling edge! It's best if you can adjust the height. The exercise is self-regulatory, so you don't have to worry about pulling too hard and injuring yourself - a little finger warmup should be sufficient. If you want to gauge your strength training progress, you may buy a [Tindeq Progressor](#).

Dr. Tyler Nelson's New Active Finger Strength Training Protocols - Summary

Whatever your sport discipline is, training needs to be specific to trigger the required adaptations to be effective. For example, adding more load to your harness while hanging off your fingertips does not necessarily improve your climbing. Moreover, reducing the passive tension component (yielding isometrics) and focusing on active recruitment (overcoming isometrics) makes it possible to reap more benefits without running unnecessary injury risks.

Finger strength is a skill, so MaxHangs on large edges poorly transfer to pulling on pinches at body weight. Instead, try using system boards creatively, like an improved fingerboard to raise your levels of intermuscular coordination and hypertrophy. For example, rather than ticking off benchmark boulder problems, go for 3 – 4 weeks of Finger Strength Training on the Wall and see if you start progressing again.



you may focus more on dynamic system board climbing, or go for maximize gains but make sure to stop once your progress begins to stall. To avoid adding heavy loads, consider going for one-arm hangs.

The climbing community can be pretty conservative, so it remains to be seen whether Dr. Nelson's new approach to finger strength training will become mainstream, just as the 7/3 Repeaters and Eva Lopez MaxHangs did. However, if you've been stuck on a finger strength plateau for a while, you're not risking much by trying a different method to revamp your climbing!

References

1. T. Nelson, The "Simplest" Finger Training Program, www.camp4humanperformance.com/blog, Oct. 16, 2019. [\(link\)](#)[\[↗\]](#)
2. J. Banaszczyk, StrengthClimbing – Dr. Tyler Nelson's Density Hangs Finger Training For Rock Climbing, Feb. 28, 2022. [\(link\)](#)[\[↗\]](#)
3. T. Nelson, Climbing.com – Are Most Climbers Getting Fingerboard Training Wrong? (Part II), Mar. 10, 2023. [\(link\)](#)[\[↗\]](#)
4. J. Banaszczyk, StrengthClimbing – How To Boulder Hard – Conversation With Paul Gennaro!, Jan. 18, 2023. [\(link\)](#)[\[↗\]](#)
5. J. Banaszczyk, StrengthClimbing – Eric Hörst Hangboard Moving Hangs Climbing Training Endurance Protocol, Jan. 30, 2020. [\(link\)](#)[\[↗\]](#)
6. J. Banaszczyk, StrengthClimbing – Dr. Tyler Nelson's Density Hangs Finger Training For Rock Climbing, Feb. 28, 2022. [\(link\)](#)[\[↗\]](#)
7. J. Banaszczyk, StrengthClimbing – Hangboard Repeaters strength endurance protocol, Apr. 8, 2019. [\(link\)](#)[\[↗\]](#)
8. J. Banaszczyk, StrengthClimbing – Finger Strength Measurements For Rock Climbers Made Easy!, Feb. 17, 2023. [\(link\)](#)[\[↗\]](#)
9. J. Banaszczyk, StrengthClimbing – Eric Hörst's "7-53" finger strength hangboard routine, Jan. 21, 2019. [\(link\)](#)[\[↗\]](#)
10. J. Banaszczyk, StrengthClimbing - Steve Bechtel's 3-6-9 Ladders hangboard finger strength training, May 18, 2019. [\(link\)](#)[\[↗\]](#)
11. J. Banaszczyk, StrengthClimbing – Eva López MaxHangs Hangboard Routine For Finger Strength, Apr. 29, 2019. [\(link\)](#)[\[↗\]](#)
12. J. Banaszczyk, StrengthClimbing – Climbing Finger Strength Analyzer 2.0, Jun. 25, 2020. [\(link\)](#)[\[↗\]](#)

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About the author



Jędrzej

A veteran hangboarder and a Moonboard fan, Jędrzej is crazy about training for climbing. There's nothing he likes more than trying out different protocols and applying the newly acquired skills on the wall. Jędrzej also enjoys playing the electric guitar, baduk, and reading articles on the science of sports training. He holds a Ph.D. in electrical engineering.

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3 thoughts on “Dr. Tyler Nelson’s new active finger strength training protocols”

TOM

APRIL 25, 2023 AT 9:10 AM

This idea of heavy hangs being limiting by the body not needing to transfer the same force is an interesting concept.

I have been able to hang ~180%bw as mvc-7

(I weigh 60kg and add 55kg on a 20mm edge)

However, i found it didnt translate well to climbing, and for some reason could not even begin to hang 1arm, possibly due to shoulder strength. After watching a video of an american climber, i tried 1arm hangs, 3 sets of 10s, and would then reduce the edge size 1-2mm.

I had to start on about a 35mm edge, and so i also added 3 sets of 10s on micros (8-6mm) with two



nd 6mm with an added 5kg, as reducing the edge further was

too painful and condition dependent.

It seems to transfer over to climbing better rather than just doing max hangs on a 20mm edge.

[Reply](#)

JĘDRZEJ

APRIL 25, 2023 AT 9:27 AM

Hi Tom!

As always, thanks for the great input! I use a similar protocol, but I need to use a few kg of assistance on the BM2k middle edge. Maybe I need to use bigger edges. Have you tried the Finger Recruitment on the Wall protocol? I have a hunch that it could be a game-changer for many climbers.

[Reply](#)

TOM

APRIL 25, 2023 AT 6:31 PM

I havent tried that exercise specifically, but have done similar by just hard bouldering or doing the pause and hover before grabbing the hold, but not with sets and reps prescribed. It would be interesting to try.

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