Eva López IntHangs Strength Endurance Fingerboard Protocol

Jędrzej April 24, 2019 4 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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Quick summary

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Eva López IntHangs strength endurance fingerboard protocol

The Intermittent Dead Hangs protocols (IntHangs) were developed by Eva López for strength endurance fingerboard training. The idea behind this method is to mimic the activity-to-rest ratio characteristic for gripping and releasing handholds during climbing, particularly during the hardest sections of a route. Such training is thought to promote faster phosphocreatine resynthesis and enhance oxygenation during short rest periods, allowing to sustain high levels of isometric force for a longer time, which is a critical factor in lead climbing.

> *A low volume version of the classic Repeaters, designed to promote faster PCr resynthesis, enhance muscle oxygenation and trigger hypertrophy.*

Eva López IntHangs strength endurance fingerboard protocols are quite similar to classic Hangboard Repeaters, but they are generally characterized by lower volume and longer hang and rest times. Repeaters are designed to replace a full climbing session and target multiple grip positions, which makes sense if you can't make it to the gym or crag. IntHangs hangboard drills typically concentrate on the half crimp grip, although application to any grip position is possible. IntHangs strength endurance routines should constitute only a part of a training session and be combined with other activities. The protocol can be executed in two versions, the minimum edge with no added weight (IntHangs MED) and fixed edge with added weight (IntHangs MAW). Both methods trigger muscle hypertrophy because of the relatively long time under tension (TUT) and medium loads (60 – 80% of MVC) [1][2].

IntHangs MED strength endurance fingerboard routine details

2. Hang for 7 – 10 seconds, rest for 3 – 30 seconds.
3. Perform 4 – 5 hangs per set.
4. Rest for 1 – 2 minutes between sets.
5. Perform 3 – 5 sets.

To follow this protocol you will need a hangboard with progressively small edges, like the Progression and Transgression hangboards, developed by Eva López, or the adjustable Fingerschinder portable wooden hangboard [3][4]. Still, it should be reasonably easy to make your own board with different size wooden edges. The way I do it is that I insert 2 mm thick cardboard strips into the edge slots of my Zlagboard, as you can see in Figure 1 below [5].

IntHangs MAW strength endurance fingerboard routine details

1. Choose an edge on which you want to train.
    - Typical edge depth: 10 – 18 mm.
2. For the chosen edge, determine the load allowing you to hang for roughly 30 seconds.
3. Hang for 7 – 10 seconds, rest for 3 – 30 seconds.
4. Perform 4 – 5 hangs per set.
5. Rest for 1 – 2 minutes between sets.
6. Perform 3 – 5 sets.

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Figure 1: Cardboard strips in the edge slots of the Zlagboard, to adjust edge depth.

Table 1: Eva López IntHangs strength endurance fingerboard drill summary.

IntHangs	
Hang test time [s]	30
MVC-7 load	60 - 80%
Sets	3 - 5
Hangs/set	4 - 5

Rest betw. hangs [s]	3 - 30
Rest betw. sets [min]	1 - 2
TUT [s]	84 - 250
Total time [min]	4 - 22

IntHangs strength endurance fingerboard drill remarks

- Always warm up properly before doing IntHangs strength endurance hangboard workouts.
  - Perform four to five 10-second sets, with a 5-second pause and decreasing edge depth or increasing load.
  - For the first warm-up set, the edge depth/load should allow you to hang for one minute.
    - In the case of the IntHangs MED protocol, this is roughly equivalent to an edge 5 – 10 mm deeper than the training edge from your previous session [6].
    - In the case of the IntHangs MAW protocol, this is roughly equivalent to 60% of your MVC.
- For the first training session, the edge depth/load should be chosen in such a way so that you can hang for roughly 30 seconds.
- 30-second tests are time-consuming and put a lot of strain on your fingers and shoulders.
  - For the MAW method, consider performing a 5 – 10-second MVC test and using 60 – 80% of the determined maximum load.
  - For the MED method, consider using Table 2, to determine the initial edge depth.
- You should aim to fail on the last repetition of the last set.
  - This may require adjusting the edge size/load after each set or even repetition, to control the intensity on the fly.
- The hang time can be varied between 7 – 10 seconds.
  - Typical hang time: 10 seconds
- The rest time between hangs can be varied between 3 – 30 seconds.
  - Typical rest time between hangs: 5 seconds.
- The rest time between sets can be varied between 1 – 2 minutes.
  - Typical rest time between sets: 1 minute.
- Each set corresponds to an average time required to climb through a crux section on a sport route.
- The 5-second rest between hangs is in line with the observed minimum time of 3 – 5 seconds for oxygenation between isometric, high-intensity intermittent contractions.
- The 1-minute rest between sets does not allow to fully recover maximum strength, which is targeted at working strength endurance.
- The IntHangs MAW method is only recommended for advanced climbers with a lot of training experi

An interesting result can be found in Eva's Ph.D. thesis. Having investigated a group of 36 climbers of 6b – 8c climbing level, she determined that the relationship between the edge depth and maximum hang time is linear and depends on the climbing grade, as it is shown in the plot in Figure 2.

Figure 2: Edge depth vs. maximum hang time for different climbing levels [7].

Based on this result I constructed Table 2, which can help you determine the initial IntHangs MED edge depth, based on your level. If your hang time on the corresponding edge comes out different than 30 seconds, you can modify the edge depth based on the correction factor given by Eva, as shown in Table 2 [7].

Table 2: IntHangs MED starting edge depth by climbing grade [7].

Climbing grade	IntHangs MED edge [mm]	Corr. factor [mm/s]
6b	17	0.30
6b+	16	
6c	15	
6c+	14	
7a	13	
7a+	13	0.20
7b to 7b+	12	
7c to 7c+	11	
8a	11	0.16
8a+ to 8b	10	
8b+ to 8c	9	

Eva López IntHangs strength endurance fingerboard protocol results and discussion

Eva López IntHangs MED protocol was reported to have yielded an average strength endurance improvement as high as 45% after an 8-week program [8]. Interestingly enough, in the same study, Eva reports that an 8-week cycle of her MaxHangs program resulted in a 34% average strength endurance improvement, apart from the apparent finger strength gains. This result confirms that strength TOP e is directly related to strength. What is also worth noticing is that this result

this could be the lower average performance level of the participants in the later work (mean redpoint climbing ability of 7c+/8a, compared to 8a+/b in the previous study) [8].

The IntHangs hangboard protocol is reported to be excellent for improving both strength and strength endurance. However, in contrast to other strength endurance programs that are higher in volume and can be used as a replacement for an entire climbing session, the low-volume, high-load IntHangs protocols are designed to constitute only a part of it. In order to notice improvements, the routines should be performed from two to three times per week, depending on the amount of other training you do. To maintain a stable level of strength endurance, it should be enough to train IntHangs once a week. Execute the drills at the beginning of a climbing session, followed by a 15-minute rest before proceeding to the next exercise. There should be a rest of at least 48 hours between the IntHang workouts [10].

> *Execute an 8-week strength training cycle, before you engage in strength endurance training, to maximize gains.*

For optimum results, it is recommended to first execute a 4-week training cycle with the maximum strength MaxHangs MAW protocol on a relatively deep edge (18 mm), followed by four weeks of the MaxHangs MED protocol on small edges, to introduce initial neural adaptations. Such strength training preparation will make it possible to maximize the effects of the subsequent 8 – 12 weeks of strength endurance exercises [7].

If you have any questions, feel free to contact me. Please subscribe to the blog, to keep up to date with upcoming posts on cutting edge methods of climbing training!

References

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10. Eva López Blog – Fingerboard Training Guide (III). Program design and Periodization of MaxHangs, IntHangs, and SubHangs. Samples of MaxHangs training programs, Jul. 5, 2018. (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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4 thoughts on "Eva López IntHangs strength endurance fingerboard protocol"

AARON
MARCH 20, 2020 AT 12:36 AM

Question about the following –
"You should aim to fail on the last repetition of the last set."
Does failure mean 'dry firing' where my fingers slip off the hold or should I let go right before I feel like I am going to fall off?

TOP

JĘDRZEJ
MARCH 20, 2020 AT 12:33 PM

This is an important question and it needs to be addressed!
Generally, when you're executing IntHangs, Repeaters, or any other strength endurance protocol, the risk of "dry-firing" is much smaller than it is in the case of maximum strength protocols.
With MaxHangs, it can happen that your fingers suddenly slip off a hold, which is sometimes painful and may lead to injury. That's why it's recommended to use 2 – to 5-second safety margins. This means that if you are targetting 10-second hangs, you should use a load that permits you to hang for 12 – 15 seconds.
However, when doing IntHangs, your fingers are more likely to start opening slowly towards the end of the last hang, rather than suddenly slip off. At one point, you will simply have to let go, and you will feel that moment coming.

Jędrzej

Reply

SUZ
JANUARY 25, 2021 AT 3:21 PM

Hey,
thanks for the good overview. I am experimenting with IntHangs because hammering away hypertrophy sessions on my home wall seems pretty intense after several months break, so I thought I train one session on the wall and one on the fingerboard. I climb around 7c/8a (also managed a 7c after the long break, so maxpower is sort of there), and I'm confused by the edge depth you give in Table 2. Following that, I should do IntHangs on 11mm, that seems way too small… I do my maxhangs on 12mm.
Or did I misunderstand something here?
Thanks!

Reply

JĘDRZEJ
JANUARY 31, 2021 AT 1:47 PM

Hi Suz,
Table 2 gives approximate training edge depths for the IntHangs according to Eva Lopez, but it doesn't necessarily have to be accurate. As a rule of thumb, you should choose an edge on which you can hang for about 30 seconds – this typically corresponds to 80% of your MVC-7 on the said edge. If your hang time at bodyweight on the 11 mm edge is less than 30 seconds, let's say it's 25 secon TOP ou can use the correction factor in column 3 to recalculate. In this example, that

Still, one thing requires explaining here – your hang time on a particular edge is only very loosely related to your sport climbing level. It gives very little insight into your endurance and is practically solely related to strength. That's the reason why Table 2 isn't very accurate. To get a good idea of your current sport climbing level, you should take an intermittent hangs measurement with the Critical Force Calculator.

I hope this helps! Please let me know if you have more questions.

Reply

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