HIGHER HORIZONS
HIGH PROTEIN WRAPS

HOW TO INCREASE YOUR PULL-UPS BY 144% AND DIPS BY 201% IN 6 WEEKS OR LESS

Table of contents

Summary — 3

Introduction — 4

About Higher Horizons: — 5

Palm cooling show huge increases in performance in studies — 6

NFL player increase dips by 201% in 4 weeks — 8

Women can do up to 800 push-ups in under an hour with palm cooling — 11

How a 40-year-old with 15 years of experience increased lifts by up to 58% in 7 weeks — 12

How Palm Cooling works — 14

Glabrous skin — 16

You can optimise performance by keeping cool — 17

15 degrees is the optimal temperature — 18

Tools to cool the palms of your hands — 19

The Coolmitt — 20

The Prime Science power bar — 21

DYI – cold water — 22

DYI – with gym equipment — 23

Other ways to improve your performance by cooling down — 24

Conclusion — 26

Summary

Palm cooling has a huge impact on your performance, you can lift heavier for longer and do cardio for longer

Palm cooling means that you are cooling down your palms between working sets. This then cools down your muscles which has a very positive impact on performance.

Fantastic results in studies:

- 144% increase in the number of pull-ups performed in just 6 weeks in trained individuals
- 26% increase in the total amount of weight lifted in bench press in only 3 days for individuals with an average of 10 years of lifting experience
- 201% increase in dips performed in only 4 weeks by an NFL player
- 25% increase in cardio output

These results are achieved because one of the main reasons you cannot continue to lift and exercise is not the muscle failing. It's the muscles overheating. Therefore if you can cool down your muscles you can perform for longer and get results similar to the ones in above mentioned studies.

There are 3 areas of the body that are most effective at cooling down our body

1 Palms of your hands

2 Bottom of your feet

3 Face above your beard line

The palms are the most practical area to cool down.

There are both products and DYI options to cool down your palms.

Anything that cools down your body has a positive impact on performance.

Anything that heats up your body has a negative impact on performance.

In this booklet, you will learn the details of how this works and what you can do to get as much of the gains as possible. If you want to understand how you can increase your performance like in the studies read on!

Introduction

My name is Timmy and I'm the founder of Higher Horizons. I love working out and especially going to the gym. I'm very result oriented and always look for ways to improve. I have a personal trainer certification and a certificate in Optimum Nutrition for Health & Performance and I'm an affiliate member of the Chartered Institute for the Management of Sport and Physical Activity (CIPSA).

I can be a bit of a nerd when it comes to science and love reading research reports with new and interesting findings. I came across the concept of palm cooling by listening to the Huberman Lab podcast. I was instantly super intrigued when I heard about the studies.

I started digging deeper and read the studies and felt I had to try this myself. I've spent countless hours reading the studies performed in detail, emailing with Dr Craig Heller at Stanford University who came up with it and testing things out things and methods myself in the gym. The results I got were fantastic! In my 40s I was making gains I've not seen since I was a beginner!

I often talk to people about things related to training but most people are not interested. However, when I started mentioning palm cooling and the huge improvements I could tell that this was something people were really interested in. Based on this, I decided to write this guide to share this knowledge with as many people as possible. I hope you enjoy this guide and put it into practice as soon as possible so you can improve your results like I have!

About Higher Horizons:

Finding tasty AND healthy food to stay fit is really hard. Higher Horizons' high protein, high fibre and lower carb wraps create a large range of new healthy AND tasty options to keep you fit and healthy

Your benefits with Higher Horizons wraps:

- **High Protein** - It has more protein than a chicken breast/100g so you can make your hard earned gains which means **you will feel fantastic**
- **High Fibre** - It has 4 times the fibre of a banana/100g supporting your gut health improving your immune system which means you will be ill less often, reducing sick days and missed workouts **making you feel stronger**
- **Low Calories** - Makes you stay in a calorie deficit making you lean
- The 12g of fibre/100g also improves your gut-brain axis which can influence **brain development and increase motivation**
- **Low Carbs** - It only has 5g of carbs/wrap limiting your insulin spikes which means you store less fat leading to a leaner body **making you feel more confident**
- **Save money** - You get 20 recipes that don't require cooking and chopping so you can make healthy lunches in the office so you don't need to buy expensive lunches which means you **save a lot of money in the long run!**
- **Save Time** - You can make a meal in as little as 5 minutes saving you time which means you get **precious time back in your life**

Palm cooling show huge increases in performance in studies

The discovery of the potential of palm cooling was originally made by a group of researchers at Standford University. After understanding the impact this could have, they started to conduct studies on how much it can impact performance. In this section you will read about a few published studies on multiple individuals and anecdotal stories about NFL players.

144% increase in pullups in only 6 weeks from palm cooling

The first strength-based study they did was on pull-ups. In this study, they showed that by cooling the palms, you can improve the amount of pull-ups you can do by 144% in trained men in only 6 weeks. Anyone who has done strength training knows this is an insanely high gain for trained individuals.

They also had these men do 2 weeks of training without palm cooling as a control and they only made very moderate increases in line with normal expectations.

	Reps	Reps increase	% Increase
No cooling	**122**	**0**	**0%**
With cooling (after 6 weeks)	**298**	**176**	**144%**

Here is a link to the study: PubMed

26% increase in bench press between sessions from palm cooling

This study was conducted on 16 men who had an average of 10 years of lifting experience. They did four sets on 85% of one rep max. They first did a control session to determine their baseline of total lifted volume e.g. how many kg x reps x sets they lifted. They then came back 3 days later and did it with palm cooling.

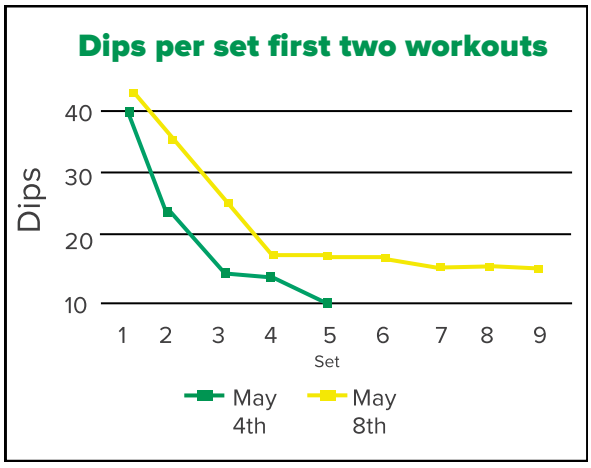
The results showed an increase from 1,972kg to 2,480 kg an increase of 26% when palm cooling was applied in only 3 days!

	Total lifted volume	Total lifted volume change	% Increase
No cooling	**1,972 kg**	**0 kg**	**0%**
With cooling	**2,480 kg**	**508 kg**	**26%**

Here is a link to the study: PubMed

NFL player increase dips by 201% in 4 weeks

The researchers also have unpublished anecdotal stories about how the NFL player Greg Clark who played tight end for San Fransisco 49ers at the time had heard about these experiments and wanted to test it. As an NFL player he is obviously in peak physical condition which makes it hard to make any significant gains! Well at least normally, but palm cooling changed this! When he came over, they asked him what is your favourite exercise? What are you really good at? “He said dips, I can do a lot of dips”. He could do 40 in the first set and then it was decreasing each set until he was too tired after 5 sets.



Graph: The difference in output between the two first workouts. Green without cooling and yellow with cooling

He increased 31% in 4 days with palm cooling

Then he came back four days later. Then there were more people watching which made him push out 42 reps in the first set. After doing more reps in the first set you would expect him to do less than 25 in the 2nd set as he has pushed himself further in the first set. However, now they applied palm cooling between the sets and he could do 33 reps which is 8 more reps than 3 days earlier. He continued to cool his palms between sets and could do more reps each set. After 5 sets he had done 135 reps an increase of 31% in 4 days with palm cooling!

92% increase in reps in 4 days

After doing 32 more reps in the same amount of sets you would expect him to be exhausted and basically crawling out of the lab. However, when he had done the fifth set, he said “You know what. I’m not tired. I can do another set and another set and then another”. He could do another 4 sets before he was too tired to continue. In total, with the higher amount of reps each set and the additional sets he could he reached 198 reps which is an increase of 92% in 4 days.

Total increase of 201%

He kept coming back twice a week for four weeks and at the end of that month, he was doing 315 dips in a session! In total over the 4 week period he tripled the number of dips he could do by adding more reps and sets. This is an INCREDIBLE performance enhancement in a few weeks for someone who is at their absolute peak condition!

Reduction of delayed onset muscle soreness

Through a lot of testing like this, they have also discovered that normally when you add this much extra work you get sore. Most of the test subjects they have had in for tests have after the increases in repetitions said “I’m going to be sore tomorrow”. However, they are not. Palm cooling also decreases the delayed onset muscle soreness (DOMS) as well as making you recover faster.

25% increase in cardio output with palm cooling

In 2005 a study was conducted that see how palm cooling impacts cardiovascular capacity. The study was made on 8 subjects who walked on a treadmill at 5.5 km/h in a room with a temperature of 40°C.

They measured their body temperature and the test was terminated when the subjects reached 90% of the predicted maximum output. They measured their body temperature and heart rate. The heart rate rose in direct correlation to body temperature.

Individuals who received palm cooling could perform on the treadmill 25% longer than the ones who didn't get palm cooling. This is a very large improvement!

Here is a link to the study: PubMed

Results are maintained even without palm cooling

It's clear that palm cooling increases performance immensely. However, do you lose all the gains when you stop using palm cooling? This has been tested on another NFL player from the Oakland Raiders. He started doing 6 sets of bench presses with 225lbs and managed to do 51 reps.

3 weeks with cooling – 18% increase

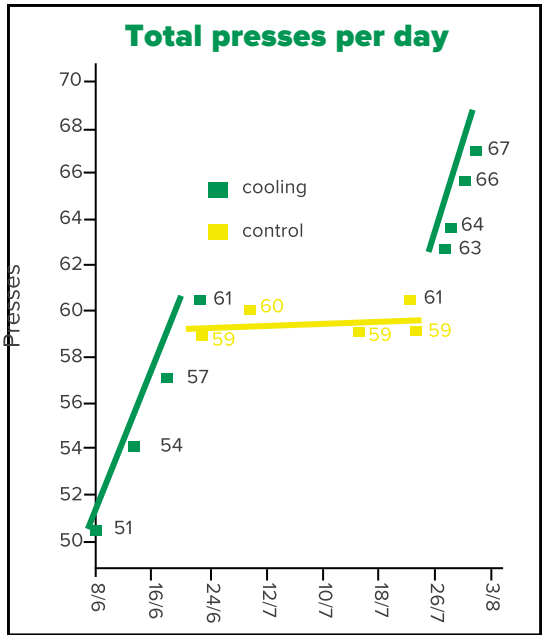
During 3 weeks with cooling between sets, he increased from 51 to 60 reps, an increase by 18%.

4 weeks without cooling – no increase

The 3 weeks with cooling was followed by 4 weeks without cooling. He managed to maintain the gains he had gotten from the cooling. However, he didn't increase any further during this period.

2 weeks with cooling –further 12% increase

The 4 weeks without cooling was followed by 2 weeks with cooling again. During these 2 weeks increased from 60 to 67 reps, an increase of another 12%. This is a total increase of 31% over this period for someone in absolutely peak condition!



Women can do up to 800 push-ups in under an hour with palm cooling

People have questioned if the results mentioned also work on women as men have much more testosterone and therefore adapt faster and build more muscle. The researchers have done a comparison study on female students.

They had a group of female students who did 10 sets of push-ups to failure with the same protocol as the other studies with 3-minutes of rest between each set. Some of these young women ended up doing 800 push-ups in under an hour in the 10 sets after several weeks.

After this, the women participating in this study came in and complained that this had cost them a lot of money because there was a formal dance and they all needed to buy new sleeveless dresses! A very good problem to have!

Cooling mechanism and tool

So I'm sure you wonder how they cool the palm in these studies? They have used a large specially built glove that has water at 15°C circulating, cooling down a metal plate on which the athletes put their hands on. The metal plate is kept at 15°C from the water and cool down the palm.

Comparing to steroids

There are controlled studies done on steroid users, and they show around a 1% increase in performance each week. Palm cooling sees an up to 201% increase in 4 weeks. This means palm cooling has the capacity to hugely outperform steroids! This is done completely naturally without any of the huge risks that come with taking steroids.

How a 40-year-old with 15 years of experience increase lifts by up to 58% in 7 weeks

After hearing about this on the Huberman Lab podcast and reading about these studies I felt I had to try this out. But how can I test it? I needed to come up with a DIY method. I figured out that if I can keep water at the right temperature I can at least to one extent mimic what they have done in the lab.

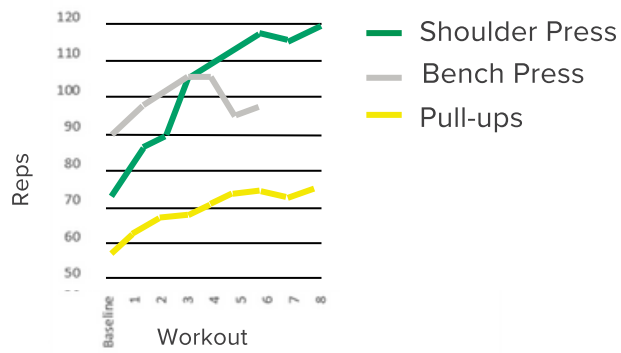
The London tap water is just under 20°C so my biggest challenge was to get the water to the right temperature (15°C) and then keep it there in a 20°C room as this would heat it up. I decided that continuously cooling the water with ice like you cool a drink was the best option.

The protocol I used was 7 sets until or very close to failure with a set weight for each exercise. Between each set I rested for 3 minutes. I first did a test week where I didn't use palm cooling to set my baseline (marked as baseline). I then followed this with 7 weeks of training with palm cooling).

58% increase in shoulder press in 7 weeks

My increase was 58% in Shoulder Press, 29% in Pull-Ups and 10% in Bench Press (shoulder injury limited my progress). As a 40-year-old with 15 years of heavy workouts in the gym, I have never seen improvements like this in this short time since I started! I was truly shocked that it worked so well for me!

Total reps per workout per exercise



The equipment I used:

1. Bucket large enough to cover both your hands with water
2. Water thermometer to control the temperature
3. Ice to manage the water temperature

What I did:

1. I filled the bucket with water so it could cover both my hands
2. If the water was above 15°C put ice in it until it reached 15°C
3. Put my hands in the water between each set
4. Monitor the temperature to ensure it's 15°C
5. If the temperature increased I dropped ice in it until it reached 15°C again
6. Wiped my hands dry to start your set

Why my improvements are not as large as the studies

You can clearly see from my results that the exercise I improved the most is shoulder press where I also had the highest amount of total reps. This is because a longer set increases your temperature more, so the effect is greater on longer sets than on shorter sets. If I had been able to do higher reps in the other exercises I would have likely reached higher increases in the amount of reps. However, the results are still significant for pull-ups. I kept the number of sets constant and didn't increase the amount of sets I did even though I could have done it, this limits my potential increase compared to the discussed options. I also only did a workout each week which means my volume was smaller than in the previously discussed tests. If I had done two sessions each week my improvements would have likely been much better.

One further reason for the slightly smaller gains is that I had my hands in water. Water transfers heat slower than metal so I had a smaller heat extraction than I would if the palms of my hands were touching metal.

How palm cooling works

The reason palm cooling works is an evolutionary function in our body to prevent us from overheating. As mammals, we keep our body temperature significantly above our environment. However, if we increase our body temperature a few degrees we can quickly get into trouble. Normally our body temperature is 37°C. If we get over 41°C we can get really ill and die.

Moving and lifting increase heat output in muscles by up to 60 times

When we move our body is about 20% effective. This means that 20% of the energy is used to create movement and 80% is lost as heat. Anaerobic exercise can increase the energy consumption in the muscles up to 50-60 times. However, the blood flow in the muscle can't increase to the same extent which means that the heat produced isn't removed from the muscle. This is the reason why we heat up when we work out, the more effort the more heat production. You literally have the ability to cook your muscles.

Evolution stop us from overheating

Evolution however is very smart! So to avoid overheating it has made an enzyme in our muscles called pyruvate kinase heat sensitive. This enzyme helps the cells turn glucose into energy which creates contraction in our muscles. As the enzyme is heat sensitive when the muscle heats up the enzyme stops producing energy for the muscle to contract.

You could see it like a little person, let's call him Mike, standing and putting fuel on the fire but when the room starts to become too hot Mike stops putting more fuel on the fire to avoid overheating in the room. The hotter the room gets the more will Mike limit the amount of fuel he puts on the fire. Mike will only put more fuel on the fire if the temperature of the room goes down. In our body, if the muscle temperature goes above 39°C the energy production is shut off.

Heating up our muscles leads to muscle failure

For our muscles, the decrease in energy means we cannot continue running and/or lifting or whatever activity we are doing. It is actually not the muscle that fails, it's the energy supply to the muscle that is being shut off to prevent overheating.

Cooling down our body means we can perform for longer

This means if we can systematically cool the muscles the muscles continue to get the required energy to do work. This is where palm cooling comes in. It's like someone coming into the room where Mike is and opening a door to let the heat out. This means Mike can continue to put fuel on the fire without the room overheating. In the case of your muscles, they can continue to get the energy to perform without failing and you can do much more work as has been shown in the studies discussed.

When you are warm you feel more fatigued

What is even more interesting is that the risk of overheating also impacts how we feel mentally. The body feels more tired when we get warmer to ensure we don't continue to push ourselves to overheat.

Why you have no energy on a very warm summer day

You have felt this on warm summer days. If it's really warm outside we get tired very easily and just feel lazy. This is because we are warmer without any exercise and this system kicks in to ensure we don't add exercise which can push us to hyperthermia (overheating). This is also why jumping in cool water when you are hot makes you less tired. The cooler water reduces your body temperature and you feel less fatigued.

Another great example of this is if you go out running in the middle of the summer. You will feel that you have no energy and no stamina compared to when it's cooler outside. It's simply a mechanism for us to avoid overheating.

So the more heat you can remove from your body the less fatigued you feel.

There are specific areas that are more effective to cool down your body

In the experiments we've spoken about they have cooled down the palms of the hands, simply because this is the most practical way to do it. You might however wonder why cooling down the palms impacts things like push-ups and pull-ups. Would it not be better to put ice on the specific areas you work out? The reason this becomes ineffective is that our body is pretty well insulated with skin and muscle tissue. You would in the best case only be able to cool down the surface area of the muscle.

Glabrous skin

The reason why the palms of our hands are so effective is that it has what is called glabrous skin. This is skin that doesn't have any hair follicles. This type of skin has a special vascular structure that facilitates heat loss much more effectively. This leads to a cooling of the blood, the cooler blood will then be pumped into the muscle and cool it down from the inside. You could compare it to trying to cool down an object from the outside or having loads of cooling elements inside it. Having a lot of cooling elements inside it would naturally cool it down much much faster.

Humans have 3 areas where we have glabrous skin

1 Palms of our hands

2 Bottom of our feet

3 Face above the beard line

The bottom of feet and face can also be cooled

In addition to hands, we also have glabrous skin at the bottom of our feet and in our faces above the beard line. Even though women do not have beards they do have hair follicles in the lower parts of the face.

It's effective to cool all areas – the more areas you cool the higher the impact

In studies of general cooling down, they have found that the palms of our hands, and the bottom of our feet had the same impact. The face had a slightly smaller impact. Cooling both hands increases the heat reduction by about 36%. Doing both palms, both feet and face at the same time increased the heat transfer by 78% compared to one hand and 23% compared to two hands. This means that by doing both hands you get 77% of the effects of all three surfaces.

If you think of how hard it would be to cool the bottom of your feet in the gym for an increase that is not that large doing both hands is the most practical and gives you the most bang for your buck in terms of effort.

You can optimise performance by keeping cool

Now that you understand the huge impact temperature has on our performance, and where you should cool your body for the largest impact, let's discuss how you can put this into practice to get better gains from your exercise.

How to keep cool to optimise performance

Based on all this new knowledge, how do you ensure you optimise your performance? The simple answer is to try and keep as cool as possible while exercising.

1. Cool the palms of your hands, bottom of your feet and forehead
2. Drink as cold water as possible
3. Wear as light clothing as possible
4. Don't do several exercises for the same muscle group consecutively
5. Do compound exercises before isolation exercises

How to cool the glabrous skin in the best way

By now the benefits of cooling the glabrous skin should be obvious. However, how do you actually do this in the best way?

To optimise the heat extraction from the glabrous skin:

- The temperature should be around 15 degrees
- Use a material that transfers heat fast – metals are best
- Apply the right level of pressure on the skin

15 degrees is the optimal temperature

It could be easy to think that you should cool your glabrous skin as much as possible to extract as much heat from the hand as possible. An example would be to put your hands in ice water. However, this would cause vasoconstriction which means the blood vessels in your hand would tighten up and restrict the blood flow. This would then reduce the heat extraction from the hand which is counterproductive and is the opposite of what you want to achieve.

Therefore the optimal temperature is a temperature that is cold enough but not too cold. Research has shown that this is around 15 degrees. However, my own testing shows that later in your workout you are more heated up so you could have lower temperatures without reaching vasoconstriction.

The temperature should feel cool but not super cold. You can test if the palm has reached vasoconstriction in two ways:

- If you open your hand and it looks whiter and paler than normal then blood flow has been restricted
- If you hold the palm against other parts of your body, if it feels very cold the blood flow has been restricted

Using material that transfers heat fast

The faster heat is transferred from your hand the more you cool your body. Hence, materials that transfer heat well will be well suited for palm cooling.

Good materials for heat transfer

- Metals
- Water

Bad materials for heat transfer

- Fabrics like clothing
- Wood or similar

Tools to cool the palms of your hands

In the trials they used a glove that had water circulating in it and how can we replicate this as much as possible? In the below table you can see the options we are aware of and some of the benefits and shortcomings. A more detailed review of them all follows on the following pages

	The Coolmitt	Prime Science Peak Performance Bar	DYI – Cold water	DYI – Gym Equipment
Price (both hands)	$2,998	£179	£15 approx	Free
Gym use	✓	✓	✓	✓
Stationary cardio use	✓	✓	✗	✗
Moving cardio use	✗	✓	✗	✗
Shipping UK and EU	✗	✓	✓	✓

The Coolmitt

This product was developed by the lab which came up with the concept. It's a glove similar to the ones they have used in the lab testing. It has a cooler that pumps water under a plate in the glove you put your hand in. From our knowledge shipping outside the US is not currently possible.

Price: $2.998 for 2 gloves

Link: https://www.coolmitt.com/

How to use it:

- It's unclear how it's "charged" from the website
- Bring to the gym
- Put your hand in the glove between sets

Pros:

- Done by the researchers so would mimic it pretty well
- You can bring it to the gym
- Maintain the right temperature throughout your session

Cons:

- Very expensive
- Don't ship outside of the US
- Cannot be carried with you for a run or on a bike

Prime Science Peak Performance Bar

This product has been developed to cool the palms as efficiently as possible while also being much more cost effective than other options. It is simple to use, easy to bring with you and practical. The product cools down the palms of your hands through a metal cylinder which is cooled down by plastic ice sticks from the freezer. The technology is protected by a pending patent.

Price: £169

The product is not yet fully released. If you click the link below you can sign up to be among the first ones to be informed when it's released.

If you sign up to the waiting list on the below link you will get a £30 discount if you purchase.

Link: **Sign up link**

How to use it

- Fill the metal tube with water to make it cool. Insert ice sticks from the freezer sticks brought in a thermos to reach optimal temperature. This is crucial because normal tap water is not cool enough
- Hold the metal tube in your hands between sets
- When the metal tube feels less cold recharge it by inserting a new ice stick

Pros:

- Very cost-effective compared to the Coolmit
- 1 device can be used for both hands – reducing the total cost
- Shipping available to the UK and EU
- Portable to the gym
- Can be used on a run or on a bike

Cons:

- £169 is too expensive for some
- Might not be suitable for very long cardio sessions

Disclosure: I'm also the founder of Prime Science and own 100% of the shares in Prime Science

DYI – cold water

This is the DYI method I used to test it out. It involves putting your hands in a bucket of water which you keep at a temperature of 15°C by continuously putting ice in the water.

Price: £15 approx

What you need:

- Bucket large enough to cover both your hands with water
- Ice to control the temperature
- Water thermometer to control the temperature

How to use:

- Fill the bucket with water so it can cover both your hands
- If the water is above 15°C put ice in it until it reaches 15°C
- Put your hands in the water between each set
- Monitor the temperature to ensure it's 15°C
- If the temperature increases drop ice in it until it reaches 15°C again
- Wipe your hands dry to start your set

Pros:

- Low start-up cost

Cons:

- Having your hands in water between every set is tedious
- You can't move around between sets
- Spilling of water easily gets messy
- Moving from one machine or area of the gym becomes a struggle
- If you don't manage to dry your hands enough it impacts your grip
- People will surely stare at you at the gym! – I know from experience

DYI – with gym equipment

This DIY method is simply holding metal things such as bars in the gym between sets. The cooler it feels the better option it is. Use metal objects without any paint as this transfers heat the best. I'm not aware of any test of this method but it should work in theory as the metal feels cool when you hold it.

Price: Free

What you need:

- The end of a barbell or any other unpainted metal object

How to do it:

- Simply grab the end of a barbell
- Don't squeeze it too much this creates vasoconstriction and is counterproductive as it stops the blood flow. If the palm of your hand loses colour you are holding it too tightly

Pros:

- It's completely free

Cons:

- No testing has been done on how much this improves performance
- The metal is not cold enough to optimise it unless the gym is 15°C
- The static nature means heat is not transferred effectively

Other ways to improve your performance by cooling down

Based on what you know now it's clear that keeping cool will help improve your performance. Here are some other methods that will help your overall performance

Drink as cold water as possible

Drinking very cold water will cool your body down from the inside. It will not have the same huge impact as cooling glabrous skin areas, but it will impact a bit. The more water and the cooler the water the better. Don't overdo the amount meaning going over several litres in a session as this can have negative effects.

Wear as light clothing as possible

Wearing light clothing will ensure your body doesn't heat up unnecessarily. You don't need something fancy just a pair of shorts and a T-shirt.

Don't do several exercises for the same muscle group consecutively

Most people would first do all the sets for one muscle group and then move on to the other. However, this will give the muscle trained less time to cool down between the different exercises. If you instead do one exercise for one muscle group followed by an exercise for another muscle group the first muscle group would get more time to cool down and be able to do more work.

Organise your exercise in this order:

- Exercise 1 muscle group 1
- Exercise 2 muscle group 2
- Exercise 2 muscle group 1
- Exercise 2 muscle group 2
- And onwards

Do compound exercises first

By doing the compound exercises first you ensure that you have the most stamina when you do the most taxing exercises. If you would do the isolation exercises first you would heat up your body before you do the compound exercises. This would lead you to reach fatigue faster on the major compound exercises.

Anything that warm you up negatively impact your performance

In the same way as anything that cools you down positively impacts your performance, anything that warms you up has a negative impact on your performance.

Do not cover any area of glabrous skin

The first thing that comes pretty naturally is that you should avoid covering the glabrous skin areas. Covering these areas will decrease the heat transfer from them. It's like going around Mike's house and closing all doors and windows, which will make his house overheat much faster and he will stop putting fuel on the fire which will hinder your performance.

Avoid wearing this on your glabrous skin:

- Gloves
- Beanies, baseball caps, headbands
- Large and warm footwear

For your feet it's hard and often not hygienic to not wear footwear. However, the footwear you use should be as light as possible. Don't wear big boots or very warm shoes. As light as possible. I've changed my gym shoes to a pair of simple Toms and my feet feel much cooler.

If the sport you perform means you have a helmet you should obviously continue to wear this helmet. However, try to get one that doesn't have continuous pressure on your forehead to give this part as much possibility to transfer heat as possible.

Do not wear any clothing or additions that heat you up

It should also come pretty naturally that wearing overall warm clothing will have a negative impact on your performance and stamina.

Do not wear any of these:

- Waist trainers
- Sauna suits
- Warm clothing – hoodies, pump covers etc
- Weight lifting belt between sets

Waist trainers and sauna suits are some of the worst things you can wear. Their purpose is to heat you up and make you sweat which will have a hugely negative impact on your performance.

Large and warm clothing will not heat you up as much but if you use it you know how much warmer you feel when you do and you now understand how it negatively impacts your performance.

Weight lifting belts are a great tool for increasing stability and decreasing the risk of injury at heavier lifts. However, there is no need to wear them between sets and they will warm you up a bit which you want to avoid.

How you shouldn't structure your gym and weight lifting training

How you structure your training also impacts how much you heat up and therefore your performance. Don't do these things if your target is to increase the amount of weight you can lift.

- Don't do cardio before lifting
- Don't do intense warm-ups
- Don't do activities between sets
- Don't superset e.g. one exercise after the other

Cardio and intense warm-ups will increase your overall body temperature, speeding up the time until you reach the muscle temperature where the enzyme stops the energy production. The same goes for activities between sets.

Supersets can be a good way to get in more exercise in a shorter amount of time. However, keep in mind that it will negatively impact your lifting performance.

Conclusion

Now that you know the huge impact of cooling your body and especially the palms of your hands it's time to put this new knowledge into action. Here is a summary of the impact and what you should do to hugely improve your performance.

How to improve your workouts

To fully reap the rewards of palm cooling and sky rocket your performance like the studies, sign up to get your Prime Science Peak Performance bar as soon as it's released!

If you sign up now you also get a £30 discount on this patent-pending innovation

Sign up on this link: Sign up link

To summarise the key takeaways from this

- Anything you can do to cool yourself down during exercise has a positive impact on your performance
- Anything you do to heat yourself up unnecessarily has a negative impact on your performance

Palm cooling has proven to hugely improve performance for both lifting and cardio

- 144% increase in pull-ups in 6 weeks
- 26% increase in bench press over 3 days
- 201% increase in dips over 4 weeks for an NFL player
- 25% increase in cardio output
- Results from palm cooling are maintained as the body adapts to the higher load
- Palm cooling works for both men and women

We have 3 areas of glabrous skin that are the most effective places to cool down our body

- Palms of our hands
- Bottom of our feet
- The face above the beard line

The best way to stay cool and improve your performance is

- Palm cooling devices or DYI options
- Drink cold water
- Wear light clothing
- Don't wear a lot and heavy clothing – absolutely avoid these
    - Waist trainers
    - Sauna suits
- How you structure your workout impacts your performance