



Fitness Advice

Tips on training at home or with limited time outdoors



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Adequate training is part of your challenge. Social distancing doesn't have to mean your training efforts have to come to an end. We've come up with a few ideas to make sure you continue making fitness progress even if you can only go outside for an hour a day.



Safety First

This guide is intended for people who already have a reasonably good level of fitness and have experience with hill walking and exercising. If you are new to fitness training, this guide may be too advanced for you.

Before starting any kind of exercise routine, contact your GP or a fitness training professional for advice. It is important to ensure you exercise safely and correctly otherwise at worst, you could cause an injury or at best you could fail to achieve any benefit from your workout.

We recommend that you always carry a small first aid kit, water, energy snacks and a mobile phone with you when you train outdoors. For safety, ensure someone knows where you are going and when to expect you back.

10-minute warm-up

Before you start your workout, it is important to gently warm up to increase your heart rate and get blood flowing more readily to specific muscle groups to minimise the risk of injury and improve recovery rates. Here is some warm-up advice provided by the NHS¹:



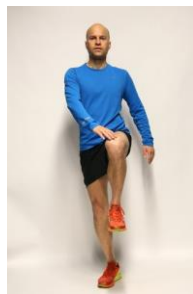
March on the spot: keep going for 3 minutes

Start off marching on the spot and then march forwards and backwards. Pump your arms up and down in rhythm with your steps, keeping the elbows bent and the fists soft.



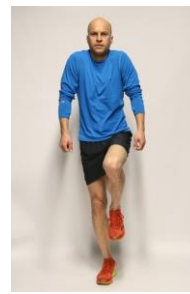
Heel digs: aim for 60 heel digs in 60 seconds. Repeat twice.

For heel digs, place alternate heels to the front, keeping the front foot pointing up, and punch out with each heel dig. Keep a slight bend in the supporting leg.



Knee lifts: aim for 60 knee lifts in 60 seconds

To do knee lifts, stand tall and bring up alternate knees to touch the opposite hand. Keep your abs tight and back straight. Keep a slight bend in the supporting leg.



Shoulder rolls: 4 sets of 10 repetitions

For shoulder rolls, keep marching on the spot. Roll your shoulders forwards 5 times and backwards 5 times. Let your arms hang loose by your sides.



Knee bends: 4 sets of 10 repetitions

To do knee bends, stand with your feet shoulder-width apart and your hands stretched out. Lower yourself no more than 10cm by bending your knees. Come up and repeat.

Making the most of the outdoors with limited time

If you are unable to go for a long walk, you need to consider other ways of increasing the intensity. Here are some suggestions:

- 1) **Benchmarking.**
Start by going on a short walk using your backpack filled as you normally would. Time the walk. Next seek out steep terrain* and do a short walk using your backpack filled as you normally would. Time the walk.
*See point 3 for tips on finding steep terrain in your local area.
- 2) **Gradually increase the weight of your backpack** from the usual 5-6kg up to 8kg, 10kg and so on. The heavier your pack the more challenging each walk will be. It is essential that you **do not attempt** to carry a very heavy weight straight away. You will be at high risk of injury. Increase the weight slightly each day until you reach a point where you feel adequately challenged. Continue with this weight until you are accustomed to it, then slowly increase it again.
- 3) **Select the steepest terrain you can find.**
The current advice is not to drive anywhere for your daily exercise, but to walk from your door and back. If you do not have any hills on your doorstep, think outside the box. Is there a bridge, an overpass with stairs, or a steep road nearby?
Tackle this steep terrain by doing multiple repetitions up and down for the time you have available. If you want to make it more challenging, consider sprinting to the top and walking down.
- 4) **Combine steep terrain and a heavy backpack.**
This should only be attempted once you're comfortable doing the above two exercises independently of each other as this takes your training up another notch. Once you're happy carrying a heavy backpack, scale back the weight and attempt your repetitions with a weighted pack. Once you get accustomed to that weight, try increasing the weight or increasing the speed of the repetitions. **Please note that sprints while using a weighted pack is risky and cause injury.**
- 5) Once you have completed all four steps, reduce your backpack weight to what you started off with, and repeat those initial two walks. Compare the times and see how you have progressed.



Increase the intensity with High Intensity Interval Training (HIIT)

Tabata

One of the most popular forms of HIIT is the Tabata Protocol. Pioneered by Irisawa Koichi, the head coach of the Japanese Speed Skating team, and popularised by Izumu Tabata following a peer reviewed journal published in 1996 in *Medicine and Science in Sports and Exercise*².

The study showed that when repeated four times a week for six weeks, trained athletes saw a 28% increase in anaerobic capacity and a 15% increase in their VO2 max (a measure of cardiovascular fitness) compared to the control group who performed steady state cardio for an hour, five times a week.

IMPORTANT

The Tabata protocol research was performed on **professional athletes** and overseen by a sports scientist. If you have **any** concerns about exercising at maximum intensity, or if you have any medical issues, particularly any **history of heart disease**, you **must** contact your doctor and/or a qualified fitness professional. This type of exercise regime should be tolerable to most healthy people who already have a good level of fitness.

How do you do it?

The principle is simple. Take part in 20 second bursts of all-out-effort exercise followed by 10 seconds of rest. Each exercise is repeated 8 times, taking 4 minutes total. For example:

Example 1	Example 2
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
Example 3	Example 4
20 seconds of burpees / 10 seconds rest	20 seconds of high knees / 10 seconds rest
20 seconds of mountain climbers / 10 seconds rest	20 seconds of mountain climbers / 10 seconds rest
20 second sprint / 10 seconds rest	20 seconds of squat jumps / 10 seconds rest
20 seconds of star jumps / 10 seconds rest	20 seconds of burpees / 10 seconds rest
20 seconds of burpees / 10 seconds rest	20 second sprint / 10 seconds rest
20 seconds of mountain climbers / 10 seconds rest	20 seconds of press ups / 10 seconds rest
20 second sprint / 10 seconds rest	20 seconds of star jumps / 10 seconds rest
20 seconds of star jumps / 10 seconds rest	20 seconds of box jump / 10 seconds rest

Until you are used to the timings it's better to stick to one exercise, so you don't waste any time figuring out which exercise comes next.

How should you feel after completing the Tabata protocol?

You should be left feeling out of breath and unable to talk (due to oxygen debt)

Increased body temperature

Significant increase in sweating

Increased muscle burn (lactic acid build-up).

If you do not feel challenged by this, you were not putting 100% into the workout.

Tip: As you progress through the repetitions you will naturally become more fatigued. This is normal. However, you must still give 100% effort (even if this equates to just a fifth of the intensity of your first rep) in order to fulfil the protocol effectively.

Other variations of High Intensity Interval Training (HIIT)

There are many other variations of HIIT which loosely follow the Tabata principles of performing an exercise at maximum effort and then taking a short rest before repeating the exercise. Here are some examples:

- Sprint to the top of a hill (or stairs) for 30 seconds then walk down for 1 minute. Repeat 8-10 times.
- 1 minute of star jumps, followed by 30 seconds of rest, then 1 minute of either squats, press-ups or burpees. Repeat 8-10 times.
- AMRAP (as many reps as possible). One set is 10 press ups, 10 sit ups and 10 bodyweight squats. Do as many sets as possible in 10 minutes. Rest for 3 minutes. Repeat 2-3 times.

There are thousands of workout examples available online and on YouTube so do some research and find your favourite HIIT workout!

General exercises

While there is no like-for-like alternative to walking outdoors here are some ideas on how to replicate your training walks, and to enhance your training:

1. Box steps using a weighted backpack.
2. Walk up and down stairs with a weighted backpack.
3. Walk outside with a weighted backpack.
4. Squats (5 sets of 15-20 reps). Add a weighted backpack, incrementally heavier as you progress.
5. Lunges (5 sets of 15-20 reps). Add a weighted backpack, incrementally heavier as you progress.
6. Calf raises (5 sets of 10-15). Stand facing the stairs with the ball of your foot on a step, heel off the step. Slowly raise your calf to a tiptoe position and return to the starting position. Repeat on both legs.
7. Plank. Start at 15 seconds, build up to 2 minutes. When you can hold a plank for two minutes, get into the plank position but raise one leg off the floor and start at 15 seconds. Build up to 2 minutes.
8. Pilates and yoga are great ways to strengthen your core and build up stamina. There are thousands of YouTube tutorials available for free.
9. Search the garage or attic for fitness equipment and accessories you may have forgotten about. Resistance bands, skipping ropes, static bikes and even treadmills can be dusted off.
10. If you don't have weights at home, use tin cans, bottles of water, sacks of potatoes or even unopened bags of cat litter to add resistance to your workouts. To calculate how much weight you're holding or carrying, stand on your bathroom scales with the weight(s) and take a note of the figure. Place the weights down, stand back on the scales and subtract that weight from this figure. Make a note of the weight you're using in your exercises so you can watch how you progress.

Injury prevention

If you push yourself too hard you are likely to injure and exhaust yourself unnecessarily. Use your energy wisely and to listen to your body. Adequate rest is a critical part of building strength and stamina.



Virtual mountain trekking

Why not set yourself a goal to match the equivalent steps that would be required to summit your chosen peaks. Outdoor education tutor David Sharp³ posted on Facebook the following tips:

“Utilizing my failed intermediate 2 maths, combined with my cabin fever boredom, I have created some calculations. I have calculated that (using my own stairs) it takes 6 stair/steps to achieve a height of 1 meter. Using this lazy excuse for math, I have added a random selection of mountains and hills in the UK, along with the steps/stairs to complete your quarantined summit. You can add more authenticity by putting on your mountain wear and splashing a bottle of water in your face for weather simulation.

Scotland

Ben Nevis. 1344 meters. 8736 steps to the top (double to come down)
Ben Lawers. 1214 meters. 7891 steps to the top (double to come down)
Schiehallion. 1083 meters. 7039 steps to the top (double to come down)
Ben Lomond. 974 meters. 6331 steps to the top (double to come down)
Conic Hill. 361 meters. 2345 steps to the top (double to come down)
An Teallach. 1062 meters. 6903 steps to the top (double to come down)

England

Scafell Pike. 978 meters. 6357 steps to the top (double to come down)
Helvellyn. 949 meters. 6168 steps to the top (double to come down)
Cross Fell. 893 meters. 5904 steps to the top (double to come down)

Wales

Snowdon. 1085 meters. 7052 steps to the top (double to come down)
Carnedd Llewelyn. 1064 meters. 6916 steps to the top (double to come down)
Glyder Fawr. 1001 meters. 6506 meters to the top (double to come down)

Ireland

Carrauntoohil. 1039 meters. 6753 steps to the top (double to come down)
Lugnaquilla. 952 meters. 6188 steps to the top (double to come down)
Cnoc na Péiste. 988 meters. 6422 steps to the top (double to come down)”

Don't forget to stop at the summit to admire the view!



To keep you motivated why not do your steps standing in place, marching on the spot, while watching one of the many 'virtual climbs' of famous mountains, such as Everest Virtual Reality www.everestvirtualreality.com or watch inspiring mountain movies. Use a pedometer app to keep track of your progress.

Warm down stretches

Tight muscles hurt, recover less efficiently and are more prone to injury. In order to help improve flexibility within muscles and joints a warm down is recommended. It is important to make warm down stretching a habit throughout your training as this will really help when it comes to your trek.



The guiding principles for stretching are outlined in the NHS advice⁴ below:

Hold each stretch for 10-15 seconds repeating once or twice on each leg.

Ease into each stretch, don't bounce or force it.

Stretch within your limits. If you feel any discomfort, stop.

Breathe slowly and with a normal rhythm.



Glutes

Lie on your back and bring your knees up to your chest. Cross your right leg over your left thigh. Grasp the back of your left thigh with both hands. Pull your left leg towards your chest. Repeat with opposite leg.



Hamstrings.

Lie on your back and raise your right leg. Hold your right leg with both hands, below your knee. Keeping your left leg bent with your foot on the floor, pull your right leg towards you keeping it straight. Repeat with opposite leg.



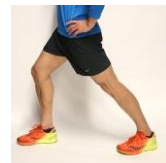
Inner thighs

Sit down with your back straight and your legs bent. Put the soles of your feet together. Holding on to your feet, try to lower your knees towards the floor.



Thighs

Lie on your right side. Grab the top of your left foot and gently pull your heel towards your left buttock to stretch the front of the thigh. Keep your knees touching. Repeat on the other side.



Calves

Step your right leg forward, keeping it bent, and lean forwards slightly. Keep your left leg straight and try to lower the left heel to the ground. Repeat with the opposite leg.

References and Acknowledgements

1. <https://www.nhs.uk/live-well/exercise/how-to-warm-up-before-exercising>
2. Med Sci Sports Exerc. 1996 Oct;28(10):1327-30. Effects of moderate-intensity endurance and high-intensity intermittent training on anaerobic capacity and VO2max. Tabata I, Nishimura K, Kouzaki M, Hirai Y, Ogita F, Miyachi M, Yamamoto K. Department of Physiology and Biomechanics, National Institute of Fitness and Sports, Kagoshima Prefecture, Japan.
3. <https://www.facebook.com/david.sharp.92372>. 24 March at 17:30.
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