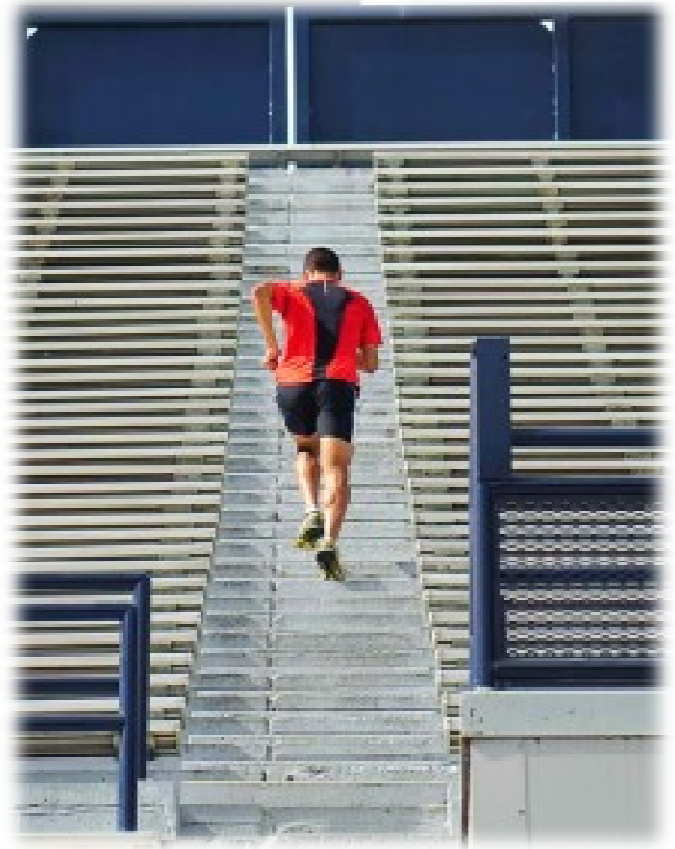

HILL REPEATS



HILL REPEATS



Running hills are good for you and they're good for your running. Training on hills improves leg-muscle strength, quickens your stride, expands stride length (when running fast), develops your cardiovascular system, enhances your running economy and protects your leg muscles against soreness.

In short, hill running will make you a stronger, faster and healthier runner.

What's more, the benefits are relatively quick to take effect. In as little as six weeks of regular hill training you can expect a significant improvement in your muscle power and speed.

I usually prescribe hill running repeats during your initial base building phase.

All repeats are performed in your aerobic zone (AZ), with a strong focus on your technique

BENEFITS OF HILL REPEATS



Why hill running works

Hill repeats strengthen your tendons and ligaments, which reduces the risk of injury and improves your overall running form. Hill sessions, force the muscles in your hips, legs, ankles and feet to contract in a coordinated fashion while supporting your full body weight, just as they have to during normal running. In addition, on uphill sections your muscles contract more powerfully than usual because they are forced to overcome gravity to move you up the hill. The result is more power, which in turn leads to longer, faster running strides.

Much of the science supporting hill training was carried out in Sweden, initially at the Karolinska Institute. One major study carried out on marathon runners discovered that after 12 weeks of twice-weekly hill sessions, the athletes' running economy had improved by three per cent. Although the subjects were trained runners, that improvement would still have helped them clip as much as two minutes off a 10-mile time or six minutes off a marathon.

MORE BENEFITS



Other research, carried out by Dr Bengt Saltin, discovered that runners who trained on hills have much higher concentrations of aerobic enzymes – the chemicals which allow your muscles to function at high intensity for long periods without fatigue – in their quadriceps muscles than those who did all their running on flat terrain. Heightened aerobic power in your quads gives you improved knee lift while running and also accelerates each leg forward more quickly as you run, which improves your speed.

Those who run on hills have also been shown to be less likely to lose fitness when they take time off from training. And many scientists believe that hill training can improve the elasticity of muscles, tendons and ligaments, allowing these tissues to carry out more work with less effort and fatigue.

ASCENTS



It is the moment all runners dread. You turn the corner and right in front of you is a big, imposing hill. But don't wince, focus. Shift gears both mentally and physically and prepare to attack the hill; don't let it attack you. Running hills well is all about rhythm; if you let the hill break up your rhythm you will slow dramatically. But if you make the proper adjustments and maintain your cadence you'll make molehills out of the mountains.

Here's how:

As you start uphill, shorten your stride. Don't try to maintain the pace you were running on the flat. You are aiming for equal effort going up as well as down, not equal pace. Trying to maintain the pace you were running on the flat will leave you exhausted later in the race or session.

Take 'baby steps' if necessary and try to keep the same turnover rhythm that you had on the flat ground. Your posture should be upright – don't lean forward or back – your head, shoulders and back should form a straight line over the feet. Keep your feet low to the ground. We've been through this with your initial technique training.

If your breathing begins to quicken it means that you're either going too fast, over-striding or bounding too far off the ground as you run.

Use a light step, not an explosive motion, which will waste energy. If the hill is long or the gradient increases, keep shortening your stride to maintain a smooth and efficient breathing pattern. If the gradient decreases, extend your stride again. Try to maintain the same steady effort and breathing throughout.

In a race, or when you're training on a undulating course, run through the top of the hill. Don't crest the hill and immediately slow down or pull back on your effort.

Your heart rate should always be held within your aerobic zone.

DESCENTS



Most runners make one or two obvious mistakes when running downhill. They either sprint, which causes severe muscle soreness later on, or they're so hesitant to surrender to gravity that they're constantly braking, which fatigues the quadriceps muscles. The optimum pace is somewhere in between. Try not to let your feet slap on the ground when you are running downhill. Step lightly and don't reach out with your feet. Slapping can be a sign of weak muscles in the shin area, in which case you need to strengthen them. To help your downhill technique, follow these simple tips:

- Try to visualise gravity pulling you down the hill.
- Try to maintain an upright body posture, keeping your torso perpendicular to the horizontal.
- Keep your feet close to the ground for maximum control, and land lightly.
- As you increase your pace, emphasise quicker turnover rather than longer strides, though your strides can be slightly longer than normal.
- The key to efficient downhill running is to stay in control. When you start, keep your stride slightly shortened and let your turnover increase. When you feel in control, gradually lengthen your stride.
- If you start to run out of control when descending, shorten your stride until you feel you are back in control again.

TROUBLE SHOOTING



Uphill:

Problem

Breathing too rapidly

Tight leg muscles

Tight or sore lower back

Tired or sore shoulders and arms

Cause

Over-striding or bounding too high

Over-striding

Leaning too far forward

Too much arm swing, or arms extended too far forward

Downhill:

Problem

Tight hamstrings or sore shins

Loss of rhythm

Sore lower back

Sore quadriceps muscles

Cause

Over-striding

Going too fast

Leaning too far forward

Probably over-striding, thus forcing your quads to work too hard; or too much braking

TRAINING SESSION

- Warm up for about 10 mins – easy slow running > on flats if possible
Find a hill > the gradient doesn't really matter, although over 10% (the gradient most Tour de France mountains) it can be a little aggressive on your achilles and plantar fascia (arch of your foot) if just starting your hill repeat program. Your HR can also jump higher very quickly and make staying in your AZ difficult and annoying slow. So about 4-6 % is best (Hunter St is 5%)
- Simply run up till the hill flattens out (however long that may be – while staying in your zone), then, turn around and return – easily (Note – short strides on the return – your HR will most probably drop below your zone – that's fine)
Keep this going – UP/Down, UP/Down for the prescribed time (eg 30 mins) – you may of course mix it up and perform a total of 30 mins on a number of hills – I usually do this.

RECOMMENDED HILLS

- Domain playing fields
- St Mary's Rd
- Art Gallery Lane
- Top Fields Domain path
- Under the Harbour Bridge
- Bridge steps – Hickson Rd
- Rushcutters bay

