



Hill Training

From [Brain Mac Sports couch](#)

Hill running has a strengthening effect as well as boosting your athlete's [power](#) and is ideal for those athletes who depend on high running speeds - football, rugby, basketball, cricket players and even runners. To reduce the possibility of [injury](#) hill training should be conducted once the athlete has a good solid base of [strength](#) and [endurance](#) .

What it does for you

In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. The technique to aim for is a "bouncy" style where the athlete has a good knee lift and maximum range of movement in the ankle. They should aim to drive hard, pushing upwards with their toes, flexing their ankle as much as possible, landing on the front part of the foot and then letting the heel come down below the level of the toes as the weight is taken. This stretches the calf muscles upwards and downwards as much as possible and applies resistance which overtime will improve their power and elasticity. The athlete should look straight ahead, as they run (not at their feet) and ensure their neck, shoulders and arms are free of tension. Many experts believe that the "bouncy" action is more important than the speed at which the athlete runs up the hills.

Hill work results in the calf muscles learning to contract more quickly and thereby generating work at a higher rate, they become more powerful. The calf muscle achieves this by recruiting more muscle fibres, around two or three times as many when compared to running on the flat.

The "bouncy" action also improves the power of the quads in the front of the thigh as they provide the high knee lift that is required. For the athlete, when competing in their sport/event, it can mean higher running speeds and shorter foot strike times.

Hill training offers the following benefits:

- helps develop power and muscle elasticity
 - improves stride frequency and length
- develops co-ordination, encouraging the proper use of arm action during the driving phase and feet in the support phase
 - develops control and stabilisation as well as improved speed (downhill running)
 - promotes strength endurance
- develops maximum speed and strength (short hills)
 - improves lactate tolerance (mixed hills)

The benefits of short, medium and long hills are quite different, and can be used at