



MP COACHES CORNER

RUN HILLS BETTER

The Moore Performance guide to stronger, smarter uphill running

"Hills are not punishment. They are a precise training tool - when the load, gradient and recovery match the athlete."



Hills are a skill, not a test of toughness

Most runners attack a hill, watch their pace collapse and assume they are simply bad at climbing. The better approach is to understand what the gradient changes, then train that demand deliberately.

Running uphill raises the energy cost of each metre. Research has shown that as gradient increases, runners naturally shorten their stride, increase step frequency and produce more force. In one laboratory study, moving from level running to a 7% incline increased metabolic cost substantially while step length shortened and cadence rose. That is why flat-ground pace is a poor target on a climb: the correct metric is effort.

Hill training can improve qualities that matter on every course - force production, running economy, cardiovascular capacity and the ability to hold form under fatigue. A six-week study in well-trained runners found an average 2% improvement in 5 km time-trial performance across several uphill interval approaches. The takeaway is not that there is one magical hill session. It is that different hills develop different qualities.



FORM IN FOCUS | Compact arms, tall hips and rhythm before pace.

THE MP PRINCIPLE

Do not try to preserve your flat pace uphill. Preserve the intended effort, posture and rhythm. A strong hill runner is controlled early, efficient through the steepest section and able to run over the crest without a dramatic fade.

Five technique cues that matter

- Shorten the stride. Let the foot land underneath you rather than reaching up the hill.
- Keep the feet quick and quiet. Cadence usually rises as the gradient increases; do not force a long, grinding step.
- Lean from the ankles. A small whole-body lean is useful. Folding at the waist closes the hips and makes breathing harder.
- Drive the elbows back. Compact, purposeful arm action helps organise the rhythm of the legs.
- Run through the crest. Hold form for another five to ten seconds, then smoothly regain normal stride length.

On the descent, stay relaxed, keep the steps light and avoid braking aggressively. Downhill running creates a different muscular load, so it should be progressed gradually rather than treated as free recovery at full speed.

Four MP hill sessions - start with the athlete, not the ego

Choose the session that matches the current training phase. One quality hill stimulus is usually enough in a week; more is not automatically better.

01

SHORT HILL STRIDES - POWER AND POSTURE

BEST FOR • BASE PHASE • TECHNIQUE • RUNNERS NEW TO HILLS

After 20-30 minutes of easy running, use a smooth 4-7% hill. Complete 6-8 x 8-10 seconds at fast but controlled effort. Walk back and allow about two minutes of full recovery. Stop if speed or posture drops.

- Think tall hips, quick feet and strong arms.
- This is not a conditioning set; every repetition should look sharp.
- Begin around 90% effort before progressing towards maximal sprinting.

02

AEROBIC HILL REPEATS - STRENGTH WITH CONTROL

BEST FOR • 5 KM TO MARATHON • TRIATHLON • GENERAL RUN STRENGTH

Warm up for 15-20 minutes, then complete 6-8 x 60-75 seconds uphill at RPE 7/10 - hard enough to work, controlled enough to repeat evenly. Jog or walk easily downhill. Finish with 10-15 minutes easy.

- Keep the first repetition conservative and the final one technically sound.
- Use effort, not pace, to judge the set.
- Progress repetitions before increasing the gradient or intensity.

COACH'S CHECK

If the session becomes a race to the top, the training target has been lost. Even splits, repeatable mechanics and a calm first repetition are better signs than one spectacular effort followed by a collapse.

How steep should the hill be?

A moderate slope is usually the best starting point. It should be steep enough to change the force demand, but not so steep that the athlete shuffles, overstrides or loses posture. Short strides can use a steeper hill than sustained repetitions. For treadmill work, begin conservatively and use the same principle: the gradient must serve the session, not dominate it.

Build the climb - then make it race-specific

03

LONG HILL REPEATS - SUSTAINED CLIMBING

BEST FOR • THRESHOLD DEVELOPMENT • LONGER RACES • HILLY COURSES

After a complete warm-up, run 4-5 x 3 minutes on a steady 3-6% incline at approximately threshold effort or RPE 8/10. Recover for two minutes very easily. The breathing should be strong, but the effort should remain stable across the set.

- Hold form when the legs begin to load.
- Do not surge in the final 30 seconds just to win the rep.
- On a treadmill, step off only after the belt has slowed safely.

04

ROLLING RACE-EFFORT RUN - EXECUTION UNDER FATIGUE

BEST FOR • SPECIFIC PHASE • MARATHON / 70.3 RUN PREP • TRAIL EVENTS

Within a 50-75 minute rolling run, complete 3 x 8 minutes at goal-race effort with three minutes easy between. Keep effort steady uphill, run smoothly over each crest and use the descent to regain rhythm rather than chase time.

- Select terrain that resembles the important climbs in the goal race.
- Compare effort, cadence and form - not just pace.
- This session belongs later in the build, once the base is reliable.

TRAIL AND VERY STEEP CLIMBS

Power hiking is a performance skill, not a failure. When the gradient becomes so steep that running drives effort far above the target with little speed benefit, a purposeful hike may be faster overall. Practise the transition: tall posture, hands free or lightly on the thighs, strong arm rhythm and an immediate return to running when the slope eases.

Where this sits in the week

- Place an easy or rest day before the main hill session when possible.
- Follow it with easy aerobic training; avoid stacking another hard run immediately after it.
- Keep heavy calf work or demanding lower-body strength away from the session if recovery is limited.
- Triathletes should account for bike fatigue: a hard bike plus hills is two loads, not one.

A simple four-week MP hill progression

This is a framework, not a universal prescription. Adjust the volume, gradient and recovery to the athlete's training history, race demands and current health.

WEEK	SESSION	PURPOSE	KEY CONTROL
1	6 x 8 sec hill strides	Technique and force	Full recovery; stop before form fades
2	7 x 60 sec at RPE 7	Aerobic strength	Even reps; easy descent
3	5 x 3 min at RPE 8	Sustained climbing	No late surging
4	60 min rolling with 3 x 8 min	Race-specific execution	Hold effort and run over crests



THE MP FEEL | Shared work, individual purpose and a long-game approach.

THE LONG-GAME RULE

Hills load the calves, Achilles tendons, feet and hips differently from flat running. Increase one variable at a time. If you are returning from injury, experiencing persistent pain or unsure about readiness, speak with your coach and an appropriate health professional before adding fast or steep hill work.

The Moore Performance takeaway

The best uphill runners are not the athletes who attack every rise. They understand the purpose, manage effort early and keep useful mechanics as fatigue builds. Start with technique, earn the longer repetitions and finish with terrain that resembles the race.

Base first. Quality second. Specificity last.

Sources and further reading

TrainingPeaks: [4 Hill Workouts That Build Strength and Speed](#) - the source article that inspired this original MP guide.

Barnes KR, Hopkins WG, McGuigan MR, Kilding AE (2013): [Effects of different uphill interval-training programs on running economy and performance.](#)

Padulo J et al. (2013): [A Paradigm of Uphill Running.](#)

General training information only. Individual programming should reflect training history, current health, race demands and recovery capacity.