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SELF-MANAGEMENT: PATIENT SECTION

Training for speed[☆]

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Summary Speed is typically considered an inherited trait. While runners are born not made, everyone can improve their speed. There are some basic tips and training exercises that can improve any athlete or “weekend warrior’s” speed.

To optimize a person’s running ability a specific stimulus is needed. This entails re-programming the muscle firing patterns by creating a new movement engram on a subcortical basis. In the young athlete, the nervous system is most plastic, so if good habits are programmed early enough in the developmental training of a young athlete, they will provide a solid foundation for the future (Balyi et al., 2005; Bompas, 1995; Bouchard et al., 1997; Higgs et al., 2008).

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Acceleration development

Acceleration development should be the primary focus of speed development for any athlete. Being able to accelerate quickly and powerfully is probably the most important skill that needs to be improved in all athletes. From changing directions quickly in basketball, tennis or soccer, to exploding out of the blocks in track, to accelerating quickly when stealing a base in baseball; each of these sports requires efficient biomechanical technique to be able to generate speed in as short a period of time as possible. Clearly, acceleration development is crucial as most sports rarely require athletes to sprint over 30 m.

Some key points to remember when it comes to acceleration development:

- Start low and drive with your arms while inclining forward
- Heels should never touch the ground – STAY ON YOUR TOES
- Make sure that your feet land beneath the hips. Not in front of body. Don’t let your body get behind your feet!
- Elbows flexed 90° / move arms straight ahead – “hips to lips” – not crossing the mid-line of body
- Hands relaxed – like holding a potato-crisp without breaking or dropping it
- Stay relaxed when running

Wall marching drill

This is the ideal body position that an athlete would be in at the outset of acceleration during running.

Start Position:

- Stand with your hands against a wall with the arms nearly parallel to the ground

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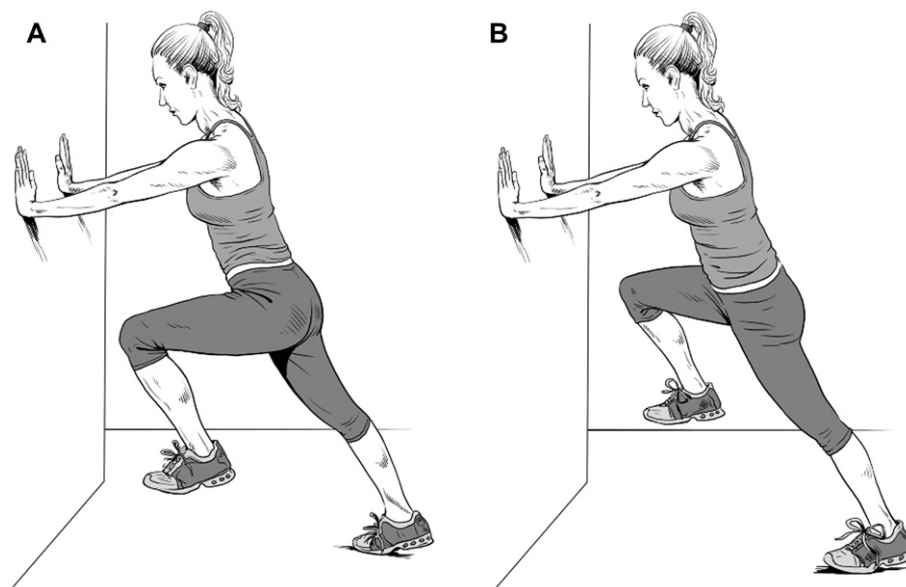


Figure 1 Wall marching drill.

- Feet should be behind the hips and lean forward – nearly at a *45 degree angle* to the ground
- Heels slightly off ground
- Torso should be erect, hips forward, abdominal and low back muscles firm

Movement:

- Perform a marching action
- Raise one leg while keeping the ankle between the knee & hip (Figure 1)

Repetitions:

- Alternate slowly 10–12 times

Progressions:

- Progress to a very quick 1, 2 step marching movement
- Add a quick 3 step marching movement
- Finally, add a quick 5 step marching movement

Watch for the following movement control errors:

- Bending at the waist with the buttocks sticking out
- CORRECTION: keep your torso erect and in a forward lean (i.e. like a plank)
- Heels moving too far forward
- CORRECTION: Keep heel behind knee (between knee and hip)

Short hill runs

Another excellent training method is to run sprints on a hill. Like wall marching the key is creating a forward lean with whole body while driving with the legs. With a hill, we can bring the angle to the athlete, putting them in an ideal position.

Exercise:

- 10–15 m
- A fairly steep hill
- Begin with accelerations up the hill
- With short hills it is important to drive your legs down and back, applying force to the ground
 - If not, you will immediately feel your center of mass is behind you and you will not be able to generate significant power or speed.

Repetitions:

- 8–10 short hill runs

Watch for the following movement control errors:

- Bounding up the hill, with your front (swing leg) landing too far in front
- CORRECTION: drive down with your gluteal muscles. If your foot gets out in front of your hips at foot strike, you will lose speed. Stay tall and in a forward lean while driving hard with your arms and legs to avoid this tendency.

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