Running injuries

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Avoiding sudden jumps in how far you run is the best-supported way to avoid running injuries. Strength training helps too, if you stick with it.

Why it matters: Injuries are a common reason race plans fall apart. Most running injuries come from doing too much too soon, and that part is in your control.

The big picture: About one in four new and recreational runners got hurt during an 8-week race-training program. Stretching and special shoes for "overpronation" have weak or no support.

What to do with this

- **Avoid sudden jumps:** keep each run within about 10% of your longest run in the past month [1].
- **Strength train at least twice a week,** including legs and hips, and keep it up. In runners, prevention programs worked when they were supervised and people kept doing them [7]. See "The strength training dose."
- **Choose shoes that feel comfortable.** You don't need a "stability" shoe because your foot rolls inward a little [2].
- **Don't count on stretching** to prevent injuries [3]. Do it if you enjoy it or need the range of motion.
- **Rest or cut back** when pain changes how you run, and see a professional if it lasts. See "Soreness or injury?"

Go deeper

The terms:

- **Running-related injury:** pain or damage from running that makes you cut back or stop.
- **Overuse injury:** an injury from repeated stress over time rather than a single accident, such as shin splints or runner's knee.
- **Pronation:** the natural inward roll of the foot as it lands.
- **Stability shoe:** a shoe designed to limit pronation.

What people believe: Injuries come from bad shoes or "flat feet," stretching before a run prevents them, and following the 10% rule keeps you safe. The research points elsewhere.

How common are they?

- In 629 novice and recreational runners training 8 weeks for a 4-mile race, about 26% reported an injury. Having no running experience was the strongest risk factor [4].
- A review of injury rates found novice runners got hurt more often per hour of running than recreational runners [5].

Doing too much too soon:

- In 5,205 runners followed for 18 months, one run more than 10% longer than the longest in the past 30 days raised the injury rate. A jump of 10 to 30% raised it by about 64%, and a run more than double the recent longest raised it about 2.3 times [1].
- The popular "10% rule" says never raise weekly mileage by more than 10%. In a 2008 trial of 532 new runners, a 13-week program built on that rule had the same injury rate as a standard 8-week program: about 21% vs. 20% [6].
- Watch big jumps in single runs, and build gradually, but there's nothing magic about 10% a week.
- See "Endurance training basics" for more on building distance.

Strength training vs. stretching:

- A meta-analysis of 25 trials with 26,610 people across many sports found that strength training cut sports injuries to under a third of the rate in comparison groups [3].
- Balance training roughly halved injuries. Stretching had no clear effect [3].
- Exercise programs cut overuse injuries roughly in half overall [3].
- In runners alone, the picture is weaker. A 2024 meta-analysis of 9 trials with 1,904 endurance runners found that exercise-based prevention programs, such as strength and balance work, didn't lower injury risk overall. Supervised programs did lower it [7].
- The authors suggest supervision helped because people stuck with the program [7]. Seven of the nine trials were rated low quality.

Shoes and foot type:

- In 927 novice runners who all wore the same neutral shoe for a year, those whose feet rolled inward (pronated) weren't injured more often than those with neutral feet. In fact, their injury rate per 620 miles (1,000 km) of running was slightly lower [2].
- The authors noted the very small number of runners with highly pronated feet means that group needs more study [2].

Between the lines: The fixable causes of running injuries are mostly about load: how much, how fast you add it, and how strong your body is to handle it.

Reality check: The strongest strength training results come from trials across many sports; the running-only trials are few and mostly low quality. The injury and shoe studies are observational, and most came from research groups in Denmark and the Netherlands.

How sure are we: Strong that strength training lowers injury risk across sports. Early that it lowers running injuries without supervision. Moderate that sudden jumps in run length raise injury risk. Moderate that moderate pronation doesn't raise injury risk in a neutral shoe. Moderate that stretching doesn't prevent injuries.

Lower your risk

1. **Follow a plan** that builds gradually. See "Endurance training basics."
2. **Strength train:** squats or leg presses, lunges, hip bridges, calf raises and core work, twice a week. Put the sessions in your plan like runs, so they happen.
3. **Rotate easy days** between harder or longer runs.
4. **Pick shoes by comfort,** and replace them when they feel worn out.
5. **Treat early pain seriously.** Pain that worsens during a run, causes limping, or lasts more than a few days needs rest and possibly a professional's opinion.

Sources

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