Save your knees without giving up your workouts

Stopping at the first sign of knee pain may be counterproductive. Instead, try this

It's a popular notion that running is hard on your knees. But a recent systematic review of 43 previous MRI studies found no evidence that running causes either short-term or long-term damage to knee cartilage.

So, if abstaining won't magically protect your knees, what will?

Feeding the cartilage

Cyclic weight-bearing activities like walking and running squeeze the cartilage in the knee joint like a sponge, expelling waste and then drawing in a fresh supply of nutrient- and oxygen-rich fluid with each step. Instead of an inert shock-absorber doomed to get brittle and eventually fail with age, cartilage is a living tissue that adapts and thrives with regular use.

That explains why non-runners who followed a 10-week running program in a small study from 2010 saw a 1.9 per cent improvement in a marker of cartilage strength and quality. It also helps explain why swapping one form of exercise for another at the first sign of knee pain may be counterproductive.

Go short and frequent

Still, there's a limit to how quickly the joint can adapt to unfamiliar stresses. Jean-François Esculier, head of research for The Running Clinic in Canada, suggested that knee pain that persists for more than an hour after exercise, or the next day, is a sign that the joint was overloaded. This doesn't mean you need to stop exercising but instead you should consider shorter, more frequent workouts.

According to Keith Baar, a physiologist at the University of California, Davis, who studies the molecular properties of cartilage and other connective tissues, the cells in cartilage respond positively to exercise for about 10 minutes. After that, you're just accumulating more stress and damage in the tissue with no further adaptive benefits. So, if a weekly two-hour tennis marathon leaves you with aching knees, swap it out for one-hour sessions twice a week.

Pay attention to old injuries

According to one study, the higher risk of knee osteoarthritis observed among former elite athletes in sports such as soccer is largely explained by a history of traumatic knee injury rather than by accumulated wear and tear.

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Fortunately, the risk of acute knee injuries can be cut in half by implementing a so-called "neuromuscular" training program, said Ewa Roos, an osteoarthritis researcher at the University of Southern Denmark. Specific exercises tailored to each sport promote good movement patterns that keep your joints stable, and they can be performed on their own for 15 minutes, three times a week.

Optimise your movement patterns

To keep your knees healthy, focus on high-quality movement patterns during everyday activities like getting up from a chair, climbing stairs or sitting down on the toilet. Use both feet (no hands) and keep your knee and hip aligned over the foot. If you can't keep the joints aligned, that's a sign you need to strengthen your leg and hip muscles. A simple, generic program of squats and lunges can strengthen the muscles that keep the knee stable and stiffen the tendons and ligaments around the joint.

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Don't quit

Debunk the notion that you should stop being active as soon as you notice knee pain. Staying active, strengthening the muscles around the joint and developing good movement patterns can alter, and in some cases reverse, the trajectory. Canada-based physical therapist Jackie Whittaker said, "A lot of people think that osteoarthritis is just a normal consequence of aging. (But) It's not inevitable. There's a lot you can control."•

– The New York Times