

- Bones

7 ways to keep your knees fit

From exercises and supplements to the latest treatments – experts tell Peta Bee what really works.

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Are your knees painful? Do they creak or click when you move? If so, you're not alone. Even if you're pain-free, there is almost certainly wear and tear to your joints as you age.

a knee injury could avoid surgery if they were prescribed a comprehensive exercise-rehabilitation programme.

"The most important thing you can do for your knees is to move them," Belavy says. "My rule of thumb – clinically and with friends and family – is to advise that they do anything they can, from running and cycling, to gym work and treadmill-walking to maintain the joints."

And there's plenty more we can do too. "Most of the research done into OA is conducted specifically on the knee joint, so there is a lot known about what we can do to protect them," Watt says. Here's where to start:

"Consciously think about working the glutes, hamstrings and lower-back muscles as you perform each deadlift move," Hobrough says. Try three sets of 15-20 three times a week.

2. Walk at least 6000 steps a day

Daily walking helps to keep your joints healthy and well oiled. Grace Hsiao-Wei Lo, assistant professor of immunology, allergy and rheumatology at Baylor College of Medicine in Houston, Texas, published a study last year showing not only that regular walkers had a 40% reduced risk of new, frequent knee pain compared with

any of these might work. "They are broken down by the gut, so we can't tell whether they have a direct effect on the joint."

Turmeric and its active ingredient curcumin might have anti-inflammatory properties, but not enough is yet known about its effect on joints. "There was some evidence in the past that glucosamine might help with knee health, but then came a large study that showed it did nothing over a placebo," she says.

5. Use painkillers sparingly

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the knee, which helps to reintroduce good functional movement."

7. Listen to your knees

If your knees are noisy, it could be a warning sign of pain to come. One study of almost 3500 participants showed that people who hear grating, clicking and popping sounds in their joints might be at increased risk of developing OA even if at present they experience no pain.

"Popping and snapping can arise from tendons, which is not problematic and can be down to biomechanics and the way people move," Watt says.



From our late-40s our balance deteriorates, making us more prone to falls, and the meniscus – the smooth, rubbery pads of cartilage that act as shock absorbers between the thigh and shin bones – becomes more dehydrated, leaving us prone to the kind of injury that can cause future problems.

"As joint surfaces roughen, there can be a Velcro-like feeling where the knees grate and click as you move," says Dr Fiona Watt, consultant rheumatologist and reader at Imperial College London. Previous injuries can be a risk factor for osteoarthritis (OA). "But OA is not an inevitable condition," she says, "and it is possible to modify it, particularly if you identify it early on."

So what can you do to prevent future pain? Avoiding excessive weight gain and staying active are certainly important. Quite how important was shown in a recent study by Daniel

Belavy, professor of physiology and a researcher at the Hochschule für Gesundheit, Bochum, Germany. He found that patients with a knee injury could avoid surgery if they were prescribed a comprehensive exercise-rehabilitation programme.

“The most important thing you can do for your knees is to move them,” Belavy says. “My rule of thumb – clinically and with friends and family – is to advise that they do anything they can, from running and cycling, to gym work and treadmill-walking to maintain the joints.”

And there’s plenty more we can do too. “Most of the research done into OA is conducted specifically on the knee joint, so there is a lot known about what we can do to protect them,” Watt says. Here's where to start:

1. Try squats, lunges and deadlifts to prevent pain

Paul Hobrough, a Northumberland physiotherapist and author of *Running Free of Injuries*, says: “Doing three sets of 20 each of squats, lunges and reverse lunges every day is excellent, so is cycling.”

Deadlifts – using weights if you have them – are also good for knees. Stand with feet hip-width apart, a dumbbell in each hand positioned in front of the thighs, palms facing the body. Keeping arms straight and core engaged, send your hips back and bend your knees slightly to lower both dumbbells in front of your legs. Continue lowering until the weights are as close to the floor as far as possible then push through your feet to return to a standing position, squeezing your glutes at the top of the move.

“Consciously think about working the glutes, hamstrings and lower-back muscles as you perform each deadlift move,” Hobrough says. Try three sets of 15-20 three times a week.

2. Walk at least 6000 steps a day

Daily walking helps to keep your joints healthy and well oiled. Grace Hsiao-Wei Lo, assistant professor of immunology, allergy and rheumatology at Baylor College of Medicine in Houston, Texas, published a study last year showing not only that regular walkers had a 40% reduced risk of new, frequent knee pain compared with non-walkers, but that walking daily can slow down the worsening of damage in older people with established knee OA. For those with early signs of knee pain, a daily total of at least 6000 steps should be the target for preventing further decline.

When researchers at Boston University measured the daily steps taken by 1788 people with knee OA for a paper in the *Arthritis Care & Research* journal, they found this number to be the threshold below which knee function deteriorated over two years.

“Walking as a general exercise is a good thing to do,” Watt says. “If you already have OA you need to be measured and build up gradually, but joints are designed to take load and the cartilage needs load to maintain itself, and we would encourage people to walk to help with that.”

3. Make sure you get enough vitamin D

“Vitamin D is vital for musculoskeletal and bone health,” Watt says. Studies have shown that supplements prescribed by a medical professional can improve knee OA pain in people with low vitamin D levels.

4 But don't bother with expensive knee-health supplements

An array of supplements – from glucosamine and chondroitin sulphate to collagen and turmeric – claim to help with knee and joint health, but Watt says there is generally not enough evidence to show any of these might work. “They are broken down by the gut, so we can't tell whether they have a direct effect on the joint.”

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5. Use painkillers sparingly

Researchers at the University of California in San Francisco recently warned that popping non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen could make OA of the knee worse by increasing inflammation and cartilage damage.

But Watt cautions that some people do find ibuprofen and NSAIDs helpful. “This new study was not randomised or peer-reviewed and does not provide solid evidence that NSAIDs cause deterioration in those joints. We do try to keep people on the lowest dose for the shortest amount of time or for flare-ups of pain.”

6. If you do one exercise – the straight-leg lift

“The quads work as a shock absorber for the knee and help to improve stability,” Watt says. “There's some good evidence that strengthening these muscles will improve knee pain and potentially slow progression of knee OA.”

Sitting on the sofa, back straight and supported, straighten fully and raise one of your legs, holding for a slow count to 10, then slowly lower your leg. Do this 5 to 10 times with each leg.

Hobrough suggests a variation for people with particularly bad OA pain. “Sit on the floor with one leg straight on a towel rolled up under your knee,” he says. “Push that knee down into the towel and as you push down, gradually lift the heel off the floor and curl toes upwards with leg as straight as you can hold it, holding for 3 seconds before lowering it down. It works the inner-range quadriceps and helps to develop the neuromuscular function of the knee, which helps to reintroduce good functional movement.”

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