

By **CLAIRE COLEMAN**

How the secret to healthier life is

WE WORRY about our waistlines, get our eyes tested and make dreaded dentist appointments. But what about your feet? Chances are you don't spare them much thought.

But, increasingly, research suggests we should be paying them more attention — with experts pointing out that our feet really are the foundation of our health. Keeping them in tip-top shape, they argue, could improve posture, prevent injuries and ward off aches and pains.

Perhaps most important, looking after our feet could prevent life-threatening falls. One in three adults over 65 will have at least one fall a year — and they are the most common cause of injury-related deaths in people over 75, according to the NHS. This is because they can lead to fatal hip fractures and head injuries.

'The feet are a neglected part of the body,' says Dr Ralph Rogers, a consultant in sports and orthopaedic medicine at The London Sports Injury Clinic. 'Nobody thinks about them until something goes wrong.'

'But with just a little bit of regular maintenance and consideration, millions of people could be saved

from future problems,' he says. Here, we bring you the expert guide to training your feet — just as you'd train any other muscle in your body — and explain why it's so vital.

WHY YOUR FEET NEED A WORKOUT

'GREAT posture starts with your feet,' explains Dr Rogers. 'The foundation of a building provides a base of stability that supports the entire structure, therefore a weak foundation leads to collapse. The same happens with your feet.'

Each foot should function almost as a tripod, with the big toe, the little toe and the heel forming the three points that hold the ankles, knees and hips in perfect alignment above the foot when it is flat on the floor with the outside edge of the foot in contact with the ground. (The inside

edge will not usually be flat on the floor because of the natural arch.)

But, as Dr Rogers points out, when that tripod is not perfectly balanced — because the foot's arch is naturally too high or too low or through ill-fitting footwear, injury or muscular weakness — it affects the ankles, knees, hips, back and shoulders.

'It creates dysfunctional movement and can lead to hip, back, and neck pain and can even be the cause of headaches,' he says. 'For instance, if you've hurt your big toe, you'll change the way you walk. This can mean the calf muscles take extra pressure, which can have a knock-on effect on the ligaments that join your knees to your hips, causing pain in these joints.'

'Similarly, changes to the way your hips are moving will affect your back, and the back muscles which connect to the muscles around your head. If they are tight, that can cause headaches.'

YOUR FEET HAVE 'CORE' MUSCLES, TOO

IT'S not just pain — a 2009 study in the *Journal of Clinical Biomechanics* which measured foot strength found the weaker certain foot muscles were, the more likely people were to have a fall.

Physiotherapists and fitness experts often talk about 'core' muscles, meaning the muscles in the pelvis and abdomen that keep you upright and help protect your back from injury.

However, the foot has 'core' muscles too. And they perform a similar function.

The term 'foot core' only came into medical parlance recently, thanks in part to a 2015 paper published in the *British Journal of Sports Medicine* in which a group of U.S. academics argued that the core muscles of the foot — the muscles in the sole of the foot where both ends are joined to bones within the foot — are 'largely ignored by clinicians'.

Treatments, they said, for complaints such as plantar fasciitis (inflammation of the ligament that runs along the sole causing heel pain) and other foot injuries are 'more often directed at externally supporting the foot rather than training these muscles'.

However, they believe 'a stronger foot is a healthier foot' and suggest strengthening these muscles could help improve ankle stability and balance and potentially reduce injuries.

SO JUST HOW FIT ARE YOUR FEET?

LIKE any muscles, your foot muscles need exercising.

This becomes even more important as we age because we naturally lose muscle strength and muscle mass.

This muscle loss can start as young as 30 but tends to accelerate after 50 and, while lean muscle mass generally contributes up to about 50 per cent of your body weight as a young adult, it's closer to 25 per cent by the time you get to 75 to 80.

This means the muscles in our

... because, say experts, exercising them properly could prevent fractures, knee pain and even deadly falls

feet also weaken with age, so ensuring that they are in fighting form is essential if we're to prevent falls (and other problems).

But foot 'core' strength is just one aspect of foot 'fitness'.

Although good foot core strength ensures the bones of your feet are held in the correct place and your body is aligned properly, foot health is also about making sure that supporting structures, such as the ligaments, are functioning as they should, that you have the correct amount of flexion and mobility in your ankle to make sure your foot is functioning normally.

Then there is proprioception. This is your awareness of where the different parts of your body are in time and space, even when you can't see them. Good proprioception in your feet improves balance, and reduces the chance of falls.

Your brain receives messages from special sensors called proprioceptors in every one of your muscles and tendons, these communicate information about what your body is in contact

with and how balanced you are, but they need training. Luckily, there are simple exercises you can do at home to improve all of these elements (see below).

WHAT ABOUT FLAT FEET?

THE foot arch is generally maintained by the muscles of your foot's core. Flat feet or fallen arches mean the instep that is usually raised when your foot is on a flat surface remains in contact with the ground.

As the instep normally provides the correct spacing between two points of the 'tripod', this can mean the foot is unstable and the knees roll inwards.

In young children, you normally can't see an arch due to 'puppy fat', but by the age of around six, the arch should have developed. However, around one in 20 people never develop an arch and this may simply be genetic.

In many cases this won't cause a problem, but if it does — typically pain in the knees or hips — orthotics or insoles which

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THE ULTIM

PODIATRIST Rebeca Gomez suggests trying these exercises on a daily basis to improve your all-round foot health...

EXERCISE 1: Stand behind the sofa and place a tennis ball between your ankle bones. Rest your hands on the back of the sofa and rise up onto your tiptoes rapidly without dropping the tennis ball.

With the ball between your ankles, return heels gently to the ground. This works an important ligament on the inside of the ankle which helps maintain the arch of the foot.

It also strengthens the calves and ankle stability, reducing the risk of sprains and falls.

If you can't do this without pain or dropping the ball, this is an indicator that your tendon is weak and your arches may be at risk of falling.

Start with five repetitions per day and work up until you can easily carry out 20 a day.

EXERCISE 2: Try balancing on one leg (near a wall for safety). This forces special sensors in

a longer and at your **FEET**



Picture: GETTY IMAGES

create an artificial arch can be worn in shoes to correct the problem, although this is unlikely to force the arch to form so most people who need orthotics will have to wear them for life.

You can also 'lose' your arches as an adult — and it's not 'one of those things' that happens with age. You can, and should, protect against it, as losing your arch can put you at greater risk of a fall.

'One of the most common causes of adult-acquired flat feet is posterior tibial tendon dysfunction (PTTD),' explains Rebeca Gomez, a podiatrist

and clinical podiatry lead at the Royal Marsden Hospital in London. 'This is where one of the ligaments on the inside of the ankle that helps support the arch loses function.'

This can lead to instability, deformity of the foot and degenerative changes in the surrounding joints in the form of osteoarthritis.

PTTD can be the result of overuse, or a sprained ankle which didn't heal properly, but risk factors also include diabetes (as high blood sugar levels can damage tendons) hypertension (which reduces blood flow to the ligaments that keep

TRENDY FITNESS CLASS MIGHT BE BAD FOR FEET

HIGH-INTENSITY interval training (HIIT) — short, sharp bursts of intensive exercise that can involve sprinting or impact exercises such as squat jumps — is now very popular.

However, Dr Ralph Rogers, a consultant in sports and orthopaedic medicine at The London Sports Injury Clinic, says that he has noticed a rise in patients with plantar fasciitis (inflammation of the liga-

ment that runs along the sole of the foot) and is convinced the exercise trend is partly to blame.

'HIIT is not for everyone,' he says. 'If you're new to exercise, you need to build up slowly.'

'Gradually increase the load by around 10 per cent each time, which will avoid suddenly putting excessive pressure on your joints and soft tissues, including the soft tissues in the feet.'

the arch in place) and obesity (as the load the feet are supporting is increased).

To protect your arch, Patrick McKeon, an associate professor in exercise and sports science at New York's Ithaca College and co-author of the 2015 'foot core' paper, recommends a simple exercise to contract the muscles that pull the arch of the foot upwards.

Sit down with your foot flat on the floor and attempt to shorten your foot by lifting the arch, without scrunching up your toes or moving your leg.

It's a very small motion — like pelvic floor exercises but for your foot — if you're doing it right, you can see your arch lift and your foot get slightly shorter. Aim to do this 20 times in a row, two or three times a day, before progressing to the same exercise standing up.

To see a detailed demonstration, go to youtube.com and search 'developing the strength of the foot core'.

WHY HAIRY TOES ARE A GOOD SIGN

REBECA Gomez suggests doing a quick assessment of your own foot health.

'Is the skin dry? Are there any calluses or corns that may indicate any areas of excess pressure or abnormal foot

mechanics?' she asks. 'Is the skin intact? How about in between the toes? Hard skin build-up on the toes and soles are a warning that the foot's mechanics are not quite correct. Footwear may be a component, but either way it warrants professional assessment.'

'Hard skin on the tips of the toes or calluses on the sole at the base of the toes can suggest you're shoes are too big as it indicates your toes are clawing to keep your shoes in place,' she says.

'Similarly, hard skin on the heels can suggest your calves are very tight, possibly as the result of wearing high heels.'

Other, more quirky factors can be good indicators of foot health. 'Do you have hairy toes? This is good as it suggests the circulation is good, as to grow hair on your toes you need a big supply of oxygen and nutrients.'

Check your circulation by pinching the fleshy bit of your big toe until it goes white. When you let go, time how long it takes to go pink again.

You're basically temporarily cutting off blood flow and timing how long it takes for blood to flow back. 'It should take less than five seconds,' says Rebeca Gomez.

Poor circulation could be an early warning of diabetes, blood pressure issues or blocked arteries so booking in to see a podiatrist, who may refer you to your GP, is a good idea. This is even more important past the age of 50.

The feet can act as an early warning system, so Rebeca Gomez recommends a yearly check-up, or more frequently if issues are identified.

This is likely to be a private consultation as unless you have a diagnosed foot condition, you are unlikely to see a podiatrist (the modern name for a chiropodist) on the NHS.

To choose a podiatrist, visit scpod.org/find-a-podiatrist/ or call 020 7234 8620.

Better Hearing



ASK THE HEARING EXPERT CHRIS CHILDE

Audiologist and Training Manager from Amplifon, the Global Hearing Specialist, has the answers to your questions.

Q: Why do some people still think that there is a stigma attached to using hearing aids?

A: Some people do not realise the advances in hearing aids made in recent decades. Hearing aids are used by people of all ages and are so discreet that you often cannot tell they are being worn.



Q: Can hearing aids be invisible?

A: They are designed to fit more discreetly, therefore hearing aids can usually only be seen if looking directly into the ear canal.

Q: When hearing aids are virtually invisible, are they difficult to use?

A: As they are tailored individually to the size and shape of the ear canal, most people find smaller hearing aids easier to insert and remove. Smaller technology has the ability to adjust automatically or can even be controlled through your mobile phone.

Q: Why should people have their hearing checked as often as their eyesight and teeth?

A: Postponing hearing tests or ignoring a diagnosis can risk accelerated cognitive decline. It could also directly affect our enjoyment of activities that help us to keep active and healthy.

Q: Are there any side effects to wearing a hearing aid?

A: You'll be able to hear a lot more! Most people have no side effects to wearing a hearing aid. At first it can feel funny in the ear, but after a while, you don't even notice it. Most people report only positive side effects of being able to participate in conversations and hear all the amazing sounds in the world.

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ATE FOOT WORKOUT

the muscles and ligaments of your feet which send signals to your brain — known as proprioceptors — to work harder as your body calculates where your limbs are and how to balance.

Try it for a slow count of 30 without wobbling, then on the other leg. Now try it with your eyes closed — this will test what your feet can feel even further. Repeat the exercises two to four times

a day. The goal is to stand on each leg with eyes closed for at least 30 seconds, without wobbling or needing to touch the wall for support.

EXERCISE 3: Place a thick book on the floor. Put the front of your feet on the edge of it, keeping your heels on the ground and tilt your feet slightly outwards towards the little toe.

Tuck your bottom in. You should still be able to stand

up straight, and feel a stretch through your calf.

Aim to hold this stretch for two minutes twice a day. This helps ensure your calf can stretch enough so when you're walking, your heel can strike the ground first and propel you forward.

It also ensures the leg can be brought forward directly underneath the body rather than swinging it around the outside of the body. The body can try to take these 'lazy' shortcuts, but they can lead to knee and hip problems.