Arthritis Research UK

Self-help and daily living

Sport and exercise injuries

Sport and exercise injuries

This booklet provides information and answers to your questions about sport and exercise injuries and arthritis.

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What should I know about sport and exercise injuries?

Exercise and sport should be good for your physical and mental health if you undertake it sensibly and take into account your current level of health and fitness. Although injuries sometimes occur during exercise, many of these can be avoided. In this booklet we'll explain how training, proper technique and preparation can help to prevent injuries, as well as give advice on what to do when injuries occur.

At the back of this booklet you'll find a brief glossary of medical words – we've underlined these when they're first used.

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What's inside?

At a glance
Sports and exercise injuries

There are many physical, psychological and social benefits to being fit and doing regular exercise. The risks of sport or exercise are low but people can occasionally get sports injuries.

Careful preparation can help you avoid sports and exercise injuries.

What type of sport and exercise injuries are there?

There are two types of sport and exercise injury:

- Overuse injuries, e.g. muscle strains and pain at the front of the knee (anterior) occur when we overstress the body's tissues and don't allow enough time for recovery.
- Traumatic injuries, e.g. bruising (contusions), cuts, sprains and strains, are often the result of a fall or contact during sport.

How can I help prevent injuries?

To help prevent injuries:

- Gradually build up how often, how long and how hard you exercise.
- Learn the correct body alignment and techniques.
- It's worth taking the time to warm up and cool down if it feels right for you.
- Fuel your body correctly and stay hydrated.
- Get the right equipment.
- Don't do too much too soon.

What do I need to remember if I get a sports injury?

Remember the following:

- Don't exercise in pain.
- Use the PRICE principles (Protection, Rest, Ice, Compression and Elevation).
- Get the right medical help.
- Don't rush back to full activity.

How do I get back to full fitness?

Remember the following tips:

- When in doubt about the treatment of an injury, seek the advice of your GP, a physiotherapist or a sport and exercise medicine specialist.
- Early diagnosis is important to ensure correct treatment and to avoid making the injury worse.
- Make sure your injury has healed completely before fully returning to activity, otherwise you risk a repeat injury.
- Plan your recovery and exercise programme with the help of a sports physician or an experienced physiotherapist.

Introduction

Everyone can gain from regular exercise and the many physical, psychological and social benefits it brings, including losing weight, keeping your heart, joints and muscles healthy and improving your mood and mental health. Being fit can also help reduce the impact of many long-term health conditions.

With any physical activity there is, to a greater or lesser extent, an inherent risk of injury, and the severity of that risk is dependent on the nature of the exercise you are doing. Sometimes injury from sport or exercise can occur through overuse, sometimes from a more direct trauma and sometimes through a lack of preparation. Sports injuries can sometimes lead to long-term damage so it's important to exercise safely and reduce the risk. The main aim of this booklet is to help you exercise safely and advise you what to do if you get injured.

How do I exercise safely and prevent injury?

Sports and exercise injuries can be relatively common if you exercise regularly, but they're usually minor and there are some things you can do to help prevent them. Applying this advice should make you less likely to get injured while working on your fitness. You should:

- build up gradually
- get fit for sport
- get the right equipment, including footwear
- learn the correct body alignment and techniques
- warm up and warm down
- fuel your body correctly
- 'listen' to your body and if you experience pain reduce the intensity of work-outs, change how you are exercising and seek medical advice if the pain doesn't go away.

Build up gradually

As well as helping you get fit for your chosen sport or activity, gradually increasing your activity can also help prevent injury. This is because your body has slowly become conditioned to exercising and so your muscles and joints are used to the extra activity.

To build up your exercise safely, try to gradually increase:

- frequency (number of times per week)
- duration (length of session)
- intensity (how hard you try).

Remember to:

- have a brisk five-minute warm-up walk and do some light stretches before every work-out and do something similar afterwards
- have rest days after strenuous work-outs. However, if you did not want to rest completely you could exercise a different muscle group from the previous day or focus on a different aspect of fitness, e.g. cardiovascular exercise.

Get fit for sport

It's important to improve your fitness in order to exercise safely, but it's also a good idea to work on important elements of your sport at the same time. This will almost certainly include aerobic exercise (exercise which gets you breathing heavily and your heart beating faster) and muscle strengthening and flexibility.

It may also be appropriate to work on things like balance and stability.

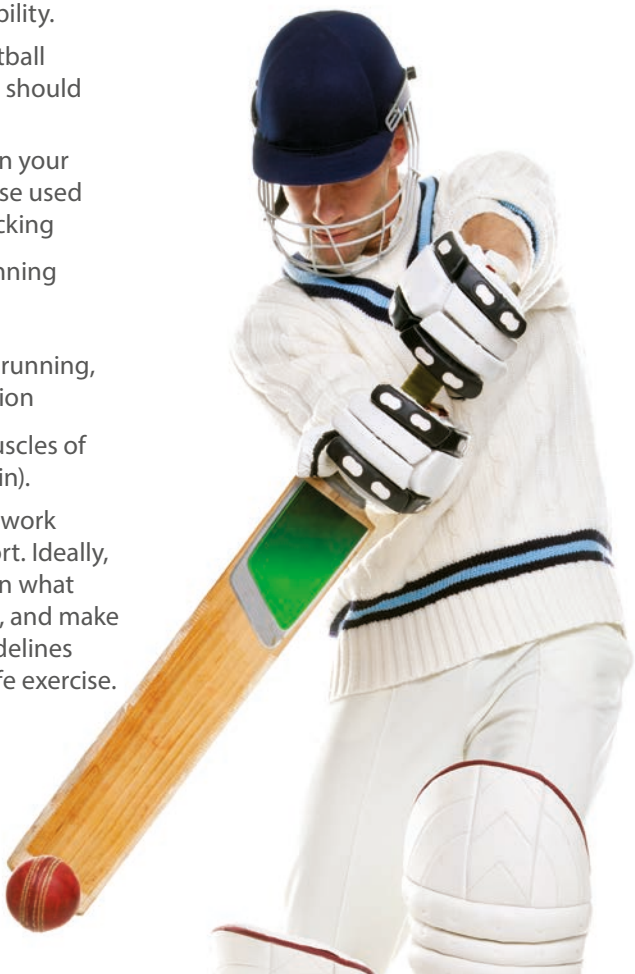
As an example, if you play football (or want to start doing so) you should work on:

- strengthening the muscles in your legs and hips, especially those used for running, jumping and kicking
- sprinting and endurance running
- balance and stability
- lower limb alignment when running, kicking and changing direction
- a strong, stable core (the muscles of your back, stomach and groin).

You may wish to use a gym to work on these elements of your sport. Ideally, you should get some advice on what to include in your programme, and make sure the advice meets the guidelines included in this booklet for safe exercise.

Get the right equipment

It's important that you use the correct clothing and equipment for your chosen sport or exercise to avoid injury. For some sports, such as cricket or hockey, it's essential that you wear the right protective gear such as shin pads, a mouth guard or padded gloves. Make sure your equipment is well maintained and the correct size and weight for you as this can reduce the risk of injuries.



Choosing the right shoes

One of the most important pieces of equipment for anybody doing regular physical activity is what you wear on your feet. Of course, no two people are the same, so you need to make sure your trainers suit you and your activity.

Whatever activity or sport you're doing, a key factor in which trainers to use will be your own biomechanics (the mechanics and structures involved with movement of the human body). Usually when you run you land on the outside of your heel. Your foot then rolls inwards to be flat on the ground. This rolling motion, called pronation, absorbs the impact caused by running and helps you balance.

However, it's very common for the foot to roll too far or not enough as you run. When the foot rolls too far it's called over-pronation. Not enough roll is called under-pronation (see Figure 1). Problems and weakness in the knees, hips or spine can also affect these movements. There are plenty of running shoes designed to help, which aim to keep you comfortable and injury-free, and the best shoe for you may not necessarily be the most expensive.

Specialist running shops will be able to assess your foot type and your running style and suggest appropriate trainers.

Learn the correct body alignment and technique

We know that moving in the correct way when exercising or playing sport can reduce the risk of injury. The general principle is that a joint is less vulnerable when it's used in a mid-range position. In other words, a joint is more likely to be injured when it's at the extremes of its possible movement. For example, if you're off-balance or when you make a particular movement this can put stresses on the wrong parts of your body and potentially cause injury. (see Figure 2).

Learning the correct body alignment and balance is part of learning the technique of a sport or exercise. For example, correct body alignment is very important when learning the correct kicking technique in rugby or football, as a lot of pressure gets put on your supporting leg. You may want to get some expert advice from a sports coach, personal trainer or physiotherapist as specific muscle strengthening exercises can often help with this process.

Warm up and warm down

While there is mixed evidence as to how necessary it is to warm up before exercising and to cool down afterwards, it's probably a good idea to perform some form of warm-up as it prepares you physically and mentally and may help prevent injuries. A good warm-up will include some general cardiovascular exercise (for example marching on the spot, fast walking building to a light jog, or gentle cycling) to gradually increase your body temperature and prepare your muscles for exercise. This exercise should be enough to get you out of breath and raise your heart rate. You should then do some light stretching of the major muscle groups you'll be using. See the stretching diagrams later in the booklet.

Figure 1
Under- and over-pronation

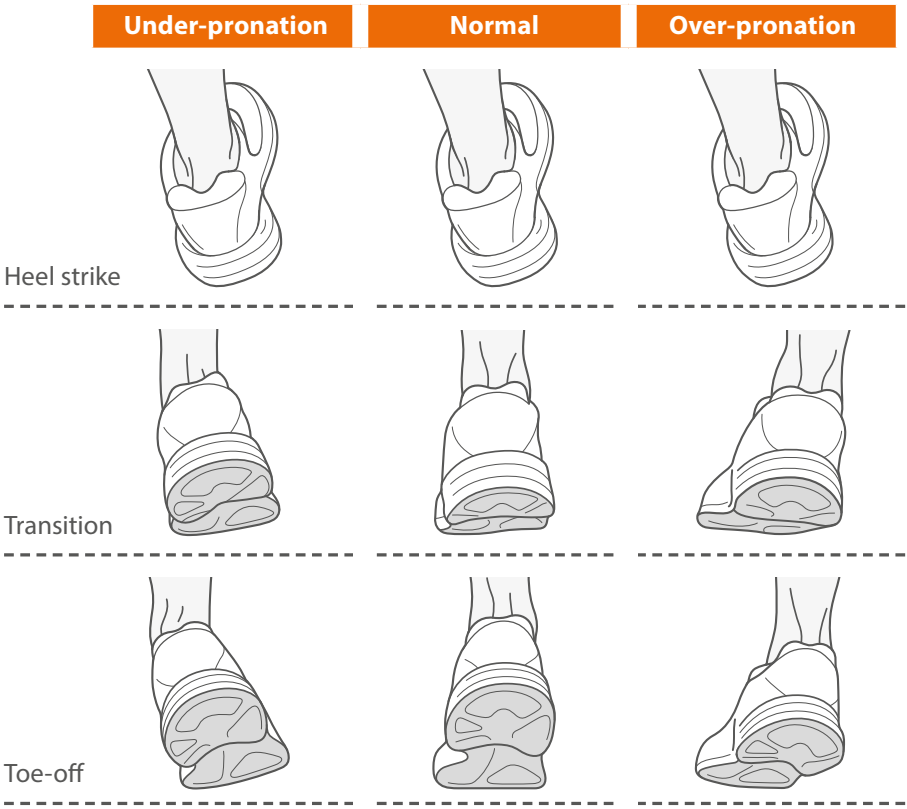


Figure 2
Correct lunging technique

RIGHT ✓

When lunging or changing direction, it's important that your hip, knee and foot are aligned. Common faults include the hip and knee rolling in or the foot flattening too much.

WRONG ✗

You can practise this optimal movement in your warm up, but you can also do it in your daily life, for example when going up or down the stairs or getting in and out of a chair.

Most importantly, a warm-up may include a run through of the movements you'll do in your particular sport. This rehearsal needs to focus on *how* movements are done.

For example, if you're preparing for playing squash you should do five minutes of forward lunges, short runs at increasing speeds and then add some direction changes. You should also do some racquet swings similar to those you use in a match.

It's also important to warm down after exercise, by repeating the stretching and gentle cardiovascular exercise you did in your warm up. This will stop you getting stiff muscles and joints and will help to prevent cramp. Give yourself plenty of time to recover and refuel your body with suitable food and drink.

Fuel your body correctly

Diet

It's important for everyone to have a healthy and balanced diet. This is especially the case if you are exercising regularly as it will ensure you have the energy you need and that your body has what it requires to rebuild muscle tissue and keep bones as healthy as possible.

You should aim to have a healthy proportion of the major food groups. A diet rich in the starchy forms of carbohydrates, such as potatoes, cereals, pasta, rice and wholemeal bread, will give you slow-releasing energy that will help you when exercising. Choose wholegrain options wherever you can.

Without a sufficient amount of starchy carbohydrates you may tire easily and suffer from fatigue. Tiredness and fatigue can lead to your muscles responding more slowly, altering the timing of your movements, which can increase your risk of injury.

A healthy amount of protein – sources include skinless chicken, fish, eggs, beans, peas, lentils and nuts – will give your body the building blocks it needs to repair and grow muscle.

Good sources of protein are shown in Figure 4. You should increase your protein intake if you're regularly lifting heavy weights or building up your muscle strength to prepare for sport.

Figure 3 Good dietary sources of carbohydrates

Good sources of carbohydrates include:

- potatoes
- bananas
- beans
- brown rice
- oats
- root vegetables.

Figure 4 Good dietary sources of protein

Good sources of protein include:

- meat
- fish
- eggs
- dairy products
- cereals
- nuts and legumes (e.g. peas and green beans).

A healthy diet with five portions of fruit and vegetables a day will provide you with the vitamins and minerals you need, and unless you're lacking in a specific nutrient, it's not necessary to take supplements. Taking supplements doesn't turn a poor diet into a good one.

Hydration

It's important to make sure you're properly hydrated. Not drinking enough will cause dehydration. Your body is about two-thirds water, but this level only has to drop by a small amount before the balance in your body is affected.

Dehydration and over-hydration can harm your performance, so you're at increased risk of injury.

You should drink about ¼ pint of fluid 15 minutes before exercise and then regularly pause during activity to drink more, drinking more often if the intensity of your exercise increases or if you begin to sweat more. This is especially important if you're exercising in a hot environment, either outside on a sunny day or in a gym. However, it's important that you don't drink too much water for the level of activity you're doing, as this can cause over-hydration with a low blood sodium (hyponatraemia), which can be dangerous and needs prompt medical attention.

What do I do if I'm in pain?

How do I tell the difference between an ache or pain and an injury?

If you get pain or stiffness that you start to feel earlier and earlier in your exercise sessions or lasts for a long time afterwards, you may have an injury. This could mean you have to change your activity or seek professional advice. These symptoms are different from the muscle ache you get the first time you do a new exercise, as they don't go away when you repeat the same activity.

General aches and muscle pain are signs of tired muscles and are nothing to be concerned about as long as they don't persist. You shouldn't feel this sort of pain for longer than a couple of hours after you finish exercising. Sudden pain may indicate muscle or tissue damage.

What are the different types of injury?

In general, we can say that sports and exercise injuries fall into two categories: overuse injuries and traumatic injuries.

Overuse injuries occur when we overstress the tissues and don't allow enough time for recovery. This can be due to doing too much exercise in a short period of time or doing exercise in the wrong way.

There are two main types of sports and exercise injury: overuse injuries and traumatic injuries.

There are many things you can do to prevent these injuries, but you must also 'listen' to your body and learn to recognise the signs that you've overdone it. Common overuse injuries include:

- muscle strains
- inflamed and painful tendons (tendinosis)
- pain at the front of the knee
- jumper's knee (tendinopathy)
- shin pains, sometimes referred to as shin splints
- tight calves/Achilles
- sore heels.

The most common symptom of an overuse injury is pain, but you may also experience tingling, numbness, swelling, stiffness or weakness in the affected area.

Traumatic injuries come on suddenly and will result in immediate pain and signs of tissue damage such as bruising, swelling and loss of function. Traumatic injuries are often the result of contact during sport and can happen whether or not you have a careful warm up.

Common traumatic injuries include:

- bruising (contusions) or cuts
- sprains and strains (e.g. ankle sprain, wrist sprain or knee ligament strain)
- fractures/ broken bones
- dislocations (when a joint 'pops out').

Common symptoms of acute injuries include sudden, severe pain, swelling, restricted movement and inability to bear weight. There may also be obvious signs of a dislocation or a broken bone.

When should I see a doctor?

Most overuse injures will get better with rest or a reduction of your activity levels, although it's important to keep gently stretching the affected muscle or joint. Pay attention to the factors that caused the problem. There are many ways you can help yourself if you have a traumatic injury, see the PRICE principles later on in the booklet. However, if you're in a lot of pain after 24 hours and the injury hasn't responded to simple measures such as ice and taking things gently, you should get medical help as soon as possible.

If you think there may be a fracture or dislocation then you should get medical attention as soon as you can.

How do I recover from an injury?

Your body is good at healing itself, provided it's allowed to do so. This means that you must not return to full activity until your injury is completely healed and your strength and fitness regained, as this is a common cause of repeat injuries. A good guide would be to begin gentle exercise again as soon as the pain will allow. During a break in training due to injury it's still important to remain active as this will help keep you fit and prevent further injuries. After a period of rest it's important not to rush back into full training but take a short time to get yourself back to full fitness. The amount of exercise should be gradually increased but should never cause significant pain. Seek the advice of a physiotherapist if this happens.

A sport and exercise medicines specialist or a physiotherapist would be able to advise you on specific exercises and strategies to help your injury. There are many exercises that can be easily performed at home.

For some injuries you can wear a brace or strapping to help recovery and to prevent the injury from happening again. While this isn't always necessary or effective, these devices can give you confidence when you start exercising again and help

If you're in a lot of pain after 24 hours and simple measures haven't worked, get medical help as soon as possible.

remind you to look after your injury. Be careful that you don't come to rely on them though – your muscles and joints should be able to support your body without extra help.

Overuse injury recovery

The first thing to do if you have an overuse injury is to stop doing the activity that's causing pain. This doesn't mean you have to stop all exercise, just try to avoid using the injured body part to give it time to recover – cross-train. Specific exercises or stretches may be needed to treat the injury.

It may help to change some of your equipment (e.g. using a lighter racquet) or make adjustments to your training or technique. Specific muscle-strengthening exercises may help prevent a recurring injury from happening again, but you should get professional advice about this from a specialist personal trainer or physiotherapist. You may also want to have another look at your technique or running style, as this may have caused the injury in the first place. It is often helpful to keep an exercise diary.

Traumatic injury recovery

Treatment for traumatic injuries should start straight away, unless it's very minor. Apply ice and compress the injured area to help prevent bleeding, bruising and swelling. If possible, try to raise the injured body part (see the PRICE principles).

You should keep applying ice for the first 48 hours after injury. Do this for 10-15 minutes at a time and always wrap the ice in a damp towel to protect your skin. You can do this often throughout the day. You should try to gently move the injured part of your body as soon as possible – ideally the same day but certainly after the first few days once the swelling is under control. For example, you should if possible continue to walk on a sprained ankle, perhaps with a support for a while if that helps – if you can't walk on it then you should seek medical attention.

If you think you may have a fracture or dislocation it's important to get medical help as soon as you can.

Following a traumatic injury you should try to get back to walking as soon as you can. You should also think about doing some muscle strengthening exercises to help strengthen the injured body part and prevent further damage.

The PRICE principles

For many injuries, particularly traumatic injuries, you need to apply the PRICE principles:

Protection – Stop the activity that caused the injury and try to prevent further injury by using padding, taping, supports, splints or crutches.

Rest – Give an injury time to heal.

Ice – Use ice to reduce pain and swelling. Wrap in a damp towel and use in 10-minute intervals.

Compression – Pressure on the injury site will help reduce swelling and bleeding in some cases.

Elevation – Lifting the injured part to above the heart reduces blood flow and swelling.

Some physiotherapists are now also promoting the POLICE principles (Protection, Optimal Loading, Compression and Elevation).
The emphasis here is on 'active rest' and getting things moving again early on. The principle is that within the first 72 hours after getting a sports injury, for example of the knee or ankle, that you try moving it and if pain allows walking on the injured leg. You might need to protect the joint at first, either using a support, a crutch or a walking aid. If it's painful then stop and seek medical advice.

If you've had a break from exercise because of a minor injury, it's important to restart your routine gradually. If you've had a major injury then seek advice from a physiotherapist or sports physician.

Physiotherapy is available privately or on the NHS.

Who can help with sports injuries?

Sports and exercise medicine is now a specialty within the NHS and your GP may be able to refer you to a specialist in your area. This may be a consultant in a hospital or a sports medicine specialist working in a community service.
A doctor will be able to diagnose your condition and check whether your injury requires any further medical or surgical investigation and treatment. The doctor can also arrange x-rays and scans if needed or give injections which are sometimes used to help recovery of injuries. The doctor may advise painkillers or, if there's any inflammation, a short period on an anti-inflammatory tablet such as ibuprofen.

Other health professionals (including physiotherapists, podiatrists, osteopaths and chiropractors) have important roles in dealing with sport and exercise injuries. Their specific roles will depend upon the type and location of the injury. Treatment by osteopaths and chiropractors isn't typically available on the NHS. Physiotherapy and podiatry services are available both on the NHS and privately. For some injuries you can wear a brace or strapping to help with recovery. These are available from sports shops, or you could ask for advice from a physiotherapist, podiatrist, osteopath, orthotist or chiropractor. Make sure they are registered with their relevant professional body.

See Arthritis Research UK drug leaflets *Non-steroidal anti-inflammatory drugs; Painkillers.*

Why is it important for me to keep exercising?

If you've had to have a break from exercise due to an injury you may be tempted to stop altogether, or you may be worried about a repeat injury. However, it's important for you to keep getting regular exercise, so you should try to get back into your routine as soon as you can. You might like to consider alternative non-weight bearing exercises such as swimming or cycling.

What if I've had significant injuries?

Most of us will have had minor injuries in the past, but it shouldn't stop you from exercising if you have made a full and unproblematic recovery. However, if you've had a previous major injury such as a complicated bone fracture, major ligament tear or cartilage injury then you should get advice from a physiotherapist, a sports and exercise medicine specialist, personal trainer or sports coach. Ask them to assess your previous problem and go over some of the injury prevention tips in this booklet. They will be able to advise you on applying these tips to your specific exercise plans and the type of injury you have.

What if I have a longer-term medical problem?

If you have an ongoing medical problem, you should seek advice from your GP or the specialist who's looking after you before increasing or altering your level of physical activity. But remember also that illness or disability is no barrier to getting regular exercise.

What can happen if I don't exercise?

Being physically inactive is a risk factor for many chronic diseases. One particular risk if you stop exercising completely is becoming overweight. As well as potentially damaging your heart, being overweight can put extra strain on your joints and research has shown that there's a direct link between obesity and osteoarthritis.

Osteoarthritis is a painful and disabling condition that affects the joints in the body. The cartilage that cushions the joint gradually roughens and becomes thin, while at the same time the bone underneath the cartilage thickens. There's evidence to suggest that joint damage caused by some sports injuries, both

Low-impact exercises can be beneficial if you have a long-term medical condition or if you're overweight.

traumatic and overuse injuries, can lead to developing osteoarthritis in later life. It's therefore very important to exercise safely and learn the right techniques to help prevent injury and potential long-term damage. If you are overweight, it would be useful to think about which particular exercises to take up so as not to cause damage to your joints. Jogging for example might put too much strain on your joints, so walking, swimming, cycling or gym sessions may be a safer route into regular exercise.

See Arthritis Research UK booklets
Osteoarthritis; What is arthritis?

What if I already have arthritis?

It depends on what type of arthritis you have. Low-impact exercise is recommended for people with all types of arthritis. It's often used by physiotherapists as a treatment to strengthen muscles around the joints as this helps to protect the joints themselves. If you have inflammatory arthritis (such as rheumatoid arthritis) that is under control, recent research has shown that you can continue to strengthen your muscles and improve your aerobic fitness without damaging your joints or causing a flare-up of symptoms. If you have osteoarthritis low-impact exercise is suitable, but you might need to try different activities to find the one that suits you.

Whatever your condition, you should try to 'listen' to your body and take action if you experience an increase in joint pain, swelling or stiffness. You may wish to seek advice about specific programmes tailored to your needs, or you may be able to join a group or club and exercise with people with similar conditions or fitness levels.

Low-impact exercises such as swimming or cycling put less stress on your joints than high-impact activities like running. Some sports may be suitable, depending on your arthritis. Good exercises if you have arthritis include:

- water-based fitness classes or exercises
- exercise bike
- supervised resistance work in a gym
- walking
- tai chi
- body pump and body combat (a non-impact martial art)
- home-based exercises using DVDs or computer games.

See Arthritis Research UK booklets
Keep moving; Physiotherapy and arthritis; Rheumatoid arthritis.

The following warm-up is based on the FIFA 11+ model. It's designed for footballers but is also useful for runners and for other multi-directional sports.

Part one: Running exercises (three minutes)

1

Running straight ahead
Two sets of light jogging for 50-60 metres, building up the pace as you warm up.

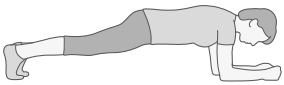
2

Running hip out
Walk or light jog and lift your knee up and rotate your hip outwards every 5 metres. Two sets.

3

Running hip in
Same as diagram 2 but rotate your hip inwards. Two sets.

Part two: Strength, plyometrics, balance (four minutes)



4

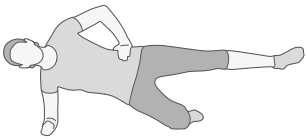
Static bench
Lie on your front, supporting yourself with your forearms and feet. Lift up and hold position for 20-30 seconds. Three sets.

Taking the time to warm up properly can help prepare you mentally and physically for exercise and prevent injury.

A warm-up, stretch and cool-down is a simple routine that could become part of your normal cycling activity. For a training session 1–2 hours long, try the following warm-up:

- Warm up cycling in a low gear at a fast pace on flat ground (15 minutes).
- Slowly increase the gears while maintaining a fast speed (5 minutes).
- Increase the gears even more to increase your heart rate, aiming for about 70% of your maximum capacity (5 minutes). You should be breathing hard but still able to talk.
- Reduce the resistance again so that you can pedal easily while still being in control of the pedals.

Running warm-up exercises



5

Sideways bench static
Lie on your side with your supporting knee at 90 degrees. Support your upper body by resting on your forearm. Lift up so that you're in a straight line for 20-30 seconds. Three sets.

6

Squats with toe raised
Stand with your feet apart and your hand on your hips. Imagine you're going to sit down on a chair so your hips and knees are at 90 degrees. Slowly stand back up and repeat while standing on your toes. Two sets.

Part three: Running exercises
(One minute)

7

Running bounding
Run with high bounding steps with a high knee lift and an exaggerated arm swing. Do this for 100 metres then jog back to the start to recover. Two sets.

Cycle warm-up exercises

1

Hamstring
Stretch each leg in turn by putting one leg forward and your weight on the back leg. Lean forward to feel the weight on the back leg. Lean forward to feel the stretch in your hamstrings on the outstretched leg.

2

Calf muscle
Repeat the same position as for the hamstrings but lift your foot up on the outstretched leg.

Make sure your injury has healed completely before fully returning to activity, otherwise you risk a repeat injury.

Q & A

Query 1

I'm a retired 52-year-old ex-footballer. I'm trying to lose and control my weight by exercising more, but I'm finding that my right knee is increasingly painful. During my playing days I suffered a cartilage (meniscal) tear, which was treated by surgery. I continued playing at a fairly high level until I was 34, and since then I've worked at a desk job.

I find that running on hard surfaces increases the pain, but occasionally I also get sudden intense pain and swelling which stops me running for over a week. On one occasion I couldn't run for four weeks. I've been told by my GP that I have osteoarthritis (OA) of the knee, but the knee doesn't lock or give way, which I've been told can indicate a 'mechanical' problem in the joint. Is there any way of keeping myself active by reducing my knee pain?

What the doctor says:

Simple analgesics such as paracetamol are effective for treatment of pain. Non-steroidal anti-inflammatory drugs (NSAIDs) shouldn't be used long term.

However, your flares of swelling and pain should be treated with short courses of anti-inflammatories such as diclofenac or ibuprofen.

Sudden episodes of swelling may just reflect flares of OA and require rest until the swelling settles. If you have persistent or severe swelling and pain you should have this assessed by your GP. Aspiration of the joint may be considered. This is where some fluid is taken from the joint, through a needle, for analysis. This may show signs of calcium crystals in the joint. Crystal shedding within the joint can cause inflammation in the joint lining tissue (synovium), leading to sudden severe episodes of pain. Calcium deposits in the remaining cartilage can often be seen if you've previously had extensive cartilage surgery. More recently, meniscal surgery has been less extensive, which appears to reduce the risk of osteoarthritis and calcium deposition later in life.

Your problems with road running illustrate one of the risks of high-impact exercise for people with osteoarthritis in the lower limbs. Running may be too high impact for people with an established form of the condition. Exercise is still encouraged, but lower-impact exercise is recommended. Try exercising using a cross-trainer or exercise bike, run on softer ground and follow the general safe exercise principles described in this booklet.

Query 2

I'm a middle-aged woman, working in a stressful job running an NHS human

resources department. I've always tried to maintain some physical activity, but what with the demands of work and home life this has reduced over time. Because of this my weight has increased, and although I'm not obese, I do want to get slimmer. What I really want to do is get fit to lose the weight, and so I've set myself the goal of running a 10 kilometre event for charity in four months' time. Do you have any tips?

What the expert says:

So you want to start running – great! The first thing to do is walk more during your day and use the stairs. Then go along to a running club or specialist exercise shoe shop and find out which trainers would be suitable for your feet. Once your footwear is sorted, try running twice a week for two weeks, alternating between running and walking every four minutes. You should try to go a little further each time, but don't push yourself too far too soon. You may find that your muscles hurt after your first run, but this should ease after a couple of days.

Set yourself the goal of a 5-km run after a month or so. Be sensible though, and don't run the whole way if you start to feel pain. Try again the next week until you can run the whole 5-km. You're halfway to your target distance!

After two months of regular running, you'll probably start to feel completely different about your physique and will feel noticeably fitter. At this point you can add one longer run per week. Aim to be comfortably running about 9-km two weeks before the 10-km race.

But don't stop after your 10-km – try adding some other physical activity into your weekly schedule, such as core strengthening and balance, which could include pilates classes, yoga or classes at the gym. There are also lots of good exercise DVDs which you can do in your home. Eventually you'll find the stress of work easier to manage, and you'll lose some of that excess weight.

Glossary

Cartilage – a layer of tough, slippery tissue that covers the ends of the bones in a joint. It acts as a shock-absorber and allows smooth movement between bones.

Chiropractor – a specialist who treats mechanical disorders of the musculoskeletal system, often through spine manipulation or adjustment. The General Chiropractic Council regulates the practice of chiropractic in the UK.

Cramp – a 'spasm' where a muscle contracts involuntarily. Muscle cramps can be uncomfortable or painful, and the cramping muscle may look hard and tight. It's common to get cramp following strenuous physical activity, and the simplest way of dealing with it is to gently stretch the cramped muscle. Warming down fully and drinking plenty of fluids should help prevent you from getting cramps after you exercise, but gently massaging the muscle or applying ice should help if they persist.

Cross-training – completing an exercise or taking part in a sport which is different from the main discipline you are training for. For example, a runner may swim on days off from running.

Ligaments – tough, fibrous bands anchoring the bones on either side of a joint and holding the joint together. In the spine they're attached to the vertebrae and restrict spinal movements, therefore giving stability to the back.

Non-steroidal anti-inflammatory drugs (NSAIDs) – a large group of drugs that reduce inflammation and control pain, swelling and stiffness. Common examples include ibuprofen, naproxen and diclofenac.

Orthotist – a specialist who prescribes and fits special shoes and orthoses, devices to help part of the body to work better. An orthosis is used to provide support or to adjust the mechanical function of a joint, for example the foot or ankle. Most foot orthoses are worn inside the shoe. They may range from very rigid to soft depending on their purpose. Orthoses are also referred to as functional orthoses.

Osteopath – a specialist who treats spinal and other joint problems by manipulating the muscles and joints in order to reduce tension and stiffness, and so help the spine to move more freely. The General Osteopathic Council regulates the practice of osteopathy in the UK.

Physiotherapist – a therapist who combines manual and exercise therapy to help keep your joints and muscles moving, ease pain and keep you mobile. Physiotherapists are widely trained in the assessment and treatment of injuries and many of them specialise in sports and musculoskeletal medicine. They work in the NHS and privately, and are regulated by the Health Professions Council.

Podiatrist – a health professional who specialises in foot problems. The terms podiatrist and chiropodist mean the same thing, although podiatrist tends to be preferred by the profession. NHS podiatrists and chiropodists are state-registered, having followed a three-year university-based training programme.

Rheumatoid arthritis – an inflammatory disease affecting the joints, particularly the lining of the joint. It most commonly starts in the smaller joints in a symmetrical pattern – that is, for example, in both hands or both wrists at once.

Sport and exercise medicines specialist – a medical specialist who uses a multi-disciplinary strategy to dealing with all aspects of health and illness to help people to return to taking part in sporting activities.

Tendinopathy – acute inflammation in a tendon or, more often, the tendon sheath.

Where can I find out more?

If you've found this information useful you may be interested in these other titles from our range:

Conditions

- *Osteoarthritis*
- *Rheumatoid arthritis*
- *What is arthritis?*

Therapies

- *Physiotherapy and arthritis*

Self-help and daily living

- *Keep moving*

Drug leaflets

- *Non-steroidal anti-inflammatory drugs*
- *Painkillers*

You can download all of our booklets and leaflets from our website or order them by contacting:

Arthritis Research UK
Copeman House
St Mary's Court
St Mary's Gate
Chesterfield
Derbyshire S41 7TD
Phone: 0300 790 0400
www.arthritisresearchuk.org

Related organisations

The following organisations may be able to provide additional advice and information:

Association of Chartered Physiotherapists in Sports Medicine (ACPSM)
(includes a 'Find a physio' search facility and new guidelines for 'PRICE' treatment)
www.physiosinsport.org

Chartered Society of Physiotherapy
14 Bedford Row
London WC1R 4ED
Phone: 020 7306 6666
www.csp.org.uk

Faculty of Sport and Exercise Medicine
The Faculty of Sport and Exercise Medicine
6 Hill Square
Edinburgh EH8 9DW
Phone: 0131 527 3404
Email: enquiries@fsem.ac.uk
www.fsem.ac.uk

General Chiropractic Council
44 Wicklow Street
London WC1X 9HL
Phone: 020 7713 5155
www.gcc-uk.org

General Osteopathic Council
176 Tower Bridge Road
London SE1 3LU
Phone: 020 7357 6655
www.osteopathy.org.uk

Society of Chiropodists & Podiatrists
1 Fellmonger's Path
Tower Bridge Road
London SE1 3LY
Phone: 020 7234 8620
www.scpod.org

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Please note: We've made every effort to make sure that this content is correct at time of publication. If you would like further information, or if you have any concerns about your treatment, you should discuss this with your doctor, rheumatology nurse or pharmacist.

Notes

We're here to help

Arthritis Research UK is the charity leading the fight against arthritis.

We're the UK's fourth largest medical research charity and fund scientific and medical research into all types of arthritis and musculoskeletal conditions.

We're working to take the pain away for sufferers with all forms of arthritis and helping people to remain active. We'll do this by funding high-quality research, providing information and campaigning.

Everything we do is underpinned by research.

We publish over 60 information booklets which help people affected by arthritis to understand more about the condition, its treatment, therapies and how to help themselves.

We also produce a range of separate leaflets on many of the drugs used for arthritis and related conditions. We recommend that you read the relevant leaflet for more detailed information about your medication.

Please also let us know if you'd like to receive our quarterly magazine, *Arthritis Today*, which keeps you up to date with current research and education news, highlighting key projects that we're funding and giving insight into the latest treatment and self-help available.

We often feature case studies and have regular columns for questions and answers, as well as readers' hints and tips for managing arthritis.

Tell us what you think

Please send your views to:
feedback@arthritisresearchuk.org
or write to us at:
Arthritis Research UK, Copeman House, St Mary's Court, St Mary's Gate, Chesterfield, Derbyshire S41 7TD

A team of people contributed to this booklet. The original text was written by Dr Dylan Morrissey, aided by the team at The Centre for Sports and Exercise Medicine, Barts, and the London School of Medicine and Dentistry, Queen Mary University of London. Some of the material was taken from an original booklet by Dr Peter Fisher, who has expertise in the subject. It was assessed at draft stage by consultant in sport and exercise medicine Professor Mark Batt and GP and consultant in sport and exercise medicine Dr Richard Weiler. An **Arthritis Research UK** editor revised the text to make it easy to read, and a non-medical panel, including interested societies, checked it for understanding. An **Arthritis Research UK** medical advisor, Sarah-Jane Ryan, is responsible for the content overall.

Arthritis Research UK

Get involved

You can help to take the pain away from millions of people in the UK by:

- volunteering
- supporting our campaigns
- taking part in a fundraising event
- making a donation
- asking your company to support us
- buying products from our online and high-street shops.

To get more **actively involved,** please call us on **0300 790 0400** or email us at enquiries@arthritisresearchuk.org

or go to:
www.arthritisresearchuk.org

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www.arthritisresearchuk.org

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