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The website for the answer to all your Orthopaedic Questions

- **Orthopaedic Opinion Online** is a website designed to provide information to patients who have orthopaedic and musculoskeletal problems and are undergoing treatment.
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Arthritis of the Ankle Joint

Key words: Ankle pain, ankle arthroscopy, ankle sprain, ankle stiffness, ankle instability, arthritis, rheumatoid arthritis, degeneration of the ankle, ankle joint replacement, ankle arthroplasty, rehabilitation following ankle surgery.

Arthritis of the ankle

The joint surfaces of all joints are covered by a smooth material called articular cartilage, which allows the bones to glide easily over each other. The joint contains a very slippery fluid called synovial fluid to lubricate the joint as it moves. The cartilage in the joint is vital for shock absorption, cushioning the bones and ensuring the joint operates smoothly and painlessly. Bursae, fluid-filled sacs, cushion the area where tendons glide across bone. The ankle becomes problematical when the articular surface becomes irregular through injury, trauma, inflammation in the joint or wear and tear. The surfaces then do not slide easily and together with surface irregularity the joint becomes painful, swollen stiff and possibly unstable. This can lead to problems and pain in carrying out everyday activities. Most people with ankle arthritis complain of pain and swelling (often worse during or after weight-bearing activity), a loss of movement or flexibility in the ankle and difficulty in walking up or down the stairs.

There are various different forms of arthritis which can occur in joints such as the ankle joint: Osteoarthritis which is a wearing down of the joint surfaces. Rheumatoid arthritis, gout, psoriatic arthritis and other forms of 'inflammatory' arthritis. Arthritis may also follow trauma, fracture, dislocation or injury to the ankle.

Osteoarthritis (OA)

Wear and tear or Osteoarthritis is less common in the ankle than it is in the hip or knee. The articular covering or cartilage becomes work away and without this protection, the bones rub together, becoming pitted and causing severe pain, stiffness and instability. Patients also often develop large bone spurs or 'osteophytes' around the joint, further limiting their range of motion. Sufferers of early-stage osteoarthritis often notice pain at the beginning of a movement or during the first few minutes of exercise, before the joints are given a chance to 'warm up'. Once the activity gets underway, the pain usually diminishes, although it is likely to increase again after resting for several minutes. As the condition worsens, pain may be present even at rest. Whilst osteoarthritis is a degenerative and chronic condition, there are varying degrees of

severity. Some people manage with mild to moderate symptoms for the rest of their lifetime, it is only when symptoms become unmanageable that it may become necessary to explore options for treatment.

Rheumatoid arthritis (RA)

Rheumatoid arthritis is a condition where the body's immune system attacks the joints causing inflammation and pain in the joint. The synovium or lining of the joint swells and joints become stiff and harder to move, especially early in the morning. Over time, muscles around the joint waste away, as well as cartilage and bone, leaving only fibrous scar tissue. RA affects about 1% of the population and is three times more common in women than in men. The average onset age is between 35-45 years and the disease often runs in families. There is no known cure for RA, although various treatments can help ease symptoms.

Psoriatic arthritis

Psoriatic arthritis is a chronic disease characterised by inflammation both of the skin (psoriasis) and joints (arthritis). The symptoms of psoriasis include patchy, red or scaly areas of skin inflammation. Around 10 per cent of psoriasis sufferers also develop an associated inflammation of their joints, leading to psoriatic arthritis. It is a systemic rheumatic disease which can also cause inflammation in body tissues away from the joints or skin, such as in the eyes, heart, lungs or kidneys.

Non Surgical Options for Ankle Arthritis

Whilst these non-surgical options for treating arthritis can help to provide short-term relief, if what you really need is an ankle replacement, they may only offer limited effectiveness compared to the long-term gains afforded by surgery.

Exercise and physiotherapy

Physiotherapy covers a wide range of different treatments. Your therapist may recommend mobilisation of the joint (to prevent the muscles around the joint from weakening) or perhaps strength and proprioceptive retraining. Proprioception refers to the body's sensory system that tells your brain where your joints/limbs are in space – standing on a wobble board is often used to retrain or increase proprioception abilities following ankle injury. Electrotherapy (the use of electrical energy as a medical treatment) may also be advised. The principles of 'RICE' – Rest, Ice, Compress and Elevate – provide an effective home treatment for the first 24 hours, particularly for ankle injuries such as sprains.

Footwear, orthotics and bracing

Ensure that you are receiving as much support from your footwear as you need. Whilst good quality shoes incorporate an arch support to prevent pronation (the tendency of the foot to roll inwards, putting pressure on the ankles) some sandals/high heels or lesser quality shoes don't. Cushioned insoles can also help provide additional support for your ankles, particularly if you are on your feet all day. Your doctor may even recommend wearing an orthotic – a special foot supporting device to control joint motion. Depending on the severity of your injury, you may also receive a short-leg cast, a lightweight supportive boot with a curved 'rocker' sole (to encourage a rocking gait, minimising impact on the joint), crutches or a brace to keep your ankle from moving and to provide additional stability.

Anti-Inflammatory Medication and Analgesics

Painkillers and non-steroidal anti-inflammatory drugs (NSAIDs) may be used to treat the symptoms of arthritis. Medications though can only provide temporary relief as they do not prevent further damage to the joint.

Injection therapy

Injection therapy involves the use of a needle and syringe to inject local anaesthetic, steroid or hyaluronic acid into the damaged joint, soft tissues or other areas to relieve pain. It is typically used only when less invasive forms of treatment fail to relieve symptoms.

Ankle Replacement

In a healthy ankle, the end of the tibia glides smoothly over the talus, cushioned by the layers of cartilage. However if the cartilage is worn away, as in an osteoarthritic ankle, it can make the joint painful and stiff. A total ankle replacement can remove pain and help improve mobility, allowing the patient to resume work and possibly many of their normal day-to-day activities. An ankle replacement is a newer procedure than the more well-known and well-established replacement operations for hip and knee joints. Whereas the hip is a ball and socket joint and the knee is essentially a 'hinge' joint, the ability of the ankle, subtalar and forefoot to flex, extend, invert and evert (actions necessary for walking over uneven ground, for example) make this a very complex joint.

Whilst the results of early ankle replacements were somewhat disappointing, a better understanding of the joint itself, combined with advancements in technology over the past 30 years, have led to much higher success rates. Developments in the artificial prosthesis, coupled with innovations in surgical instrumentation have given rise to the reliable and effective ankle replacement systems available to patients today.

Just like a conventional hip or knee replacement, an ankle replacement involves replacing the worn-out surfaces of the tibia and talus with highly polished metal surfaces. A plastic insert or 'bearing' is placed between the two surfaces, mimicking the role of cartilage – allowing the two bones to glide smoothly whilst also cushioning the impact and absorbing any shocks to the new joint. Ankle replacements generally maintain the range of movement which a patient has pre-operatively, providing the patient with up and down motion, not possible with ankle fusion. As a result, a 'normal' gait is possible post-surgery.

However, not all patients with arthritis of the ankle are suitable for ankle replacement. Generally speaking, those with a severe deformity will not be recommended an ankle replacement. Fusion would normally be recommended instead in such cases. However, you will need to discuss your options thoroughly with your own doctor in order to find a solution that is right for you.

The surgeon will make an incision approximately 15cm long over the front of the ankle. The ankle joint is entered by making an incision into the joint capsule that surrounds it. The surgeon will then remove the worn-out cartilage and damaged surfaces of the tibia and fibula to prepare them for the metal 'joint' of the new ankle prosthesis. The top of the talus is then prepared for the insertion of the metal talar component. Once the new metal implants have been fitted, a plastic insert is placed between them, allowing the new joint to move freely. The muscles and ligaments are then repositioned and the joint capsule sown back together. The skin will be closed up again using either stitches or surgical staples and dressings are applied to the wound. Following an ankle replacement or fusion, the leg will usually be encased in plaster and an ankle brace to support the new joint. Whereas you will probably be permitted to leave hospital later on the same day following an arthroscopy, you should allow for a stay of between two to three days after an ankle replacement or fusion operation.

Following ankle replacement surgery. You will see the physiotherapist and he/she will help you to get moving again, also advising on exercises to strengthen your muscles. You will receive guidance on how to manage on a practical level – for example, how to climb stairs with crutches, get in and out of bed/a chair, how to use the shower, etc. It is very important that you follow this advice to minimise the potential of damaging your ankle.

The physiotherapist will provide advice on the standard 'dos and don'ts' following ankle surgery. They will recommend exercises to help strengthen the muscles in the ankle – these will obviously vary depending on the type of operation you have undergone. The physiotherapist's recommendations are a crucial part of your recovery, so it is essential that you continue to adhere to their guidance when you return home.

The occupational therapist will provide information on whether you need any help at home and offer advice on how to maintain independence in your daily life. He/she will assess how physically capable you are and assess your circumstances at home when you are about to leave hospital – they may also be able to provide specialised devices to help around the home.

Once you return home, you will need to continue to take your painkillers if you need to, as advised by your surgeon. You will need to take some time to adjust – so don't feel guilty about relaxing. Swelling is common after ankle surgery so try to elevate your leg/foot when resting, preferably above the level of your heart. Bathing is obviously important, but you must take special precautions to ensure that you do not get your plaster wet – protect the ankle from water by wrapping it in plastic over the dressing. At night you should lie on your back, raising your ankle up using a couple of pillows. It is important to do some level of activity as well though, just be careful not to overdo it – follow your surgeon's or physiotherapist's advice.

You will need to wear a plaster or brace until the cuts in the bones have healed, at which time you will need to return to the clinic for X-ray. How soon you can expect casts to be removed will vary according to the type of operation, but as a general guide you may expect for your ankle to remain in plaster for six weeks after an ankle replacement (followed by a further six weeks in a removable aircast splint); or three months (minimum) in plaster after an ankle fusion (maybe longer if X-rays do not show sufficient evidence of bone fusion).

Improvements can continue for a year or more, depending on your condition prior to surgery. It is important that you take regular exercise to build up the strength of the muscles around your new ankle. However, it is essential that you listen to the advice of your physiotherapist as to the suitability of different forms of activity so as to avoid damaging or dislocating the new joint. By around 12 weeks it should be possible to resume low impact, weight-bearing activities such as walking, swimming, golf or gentle cycling. Avoid rigorous sports that put undue stress on the joint. Typically you will be able to return to almost all previous normal pastimes within a year of your operation. Ask your physiotherapist, doctor or surgeon if you are unsure about the suitability of any activity

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