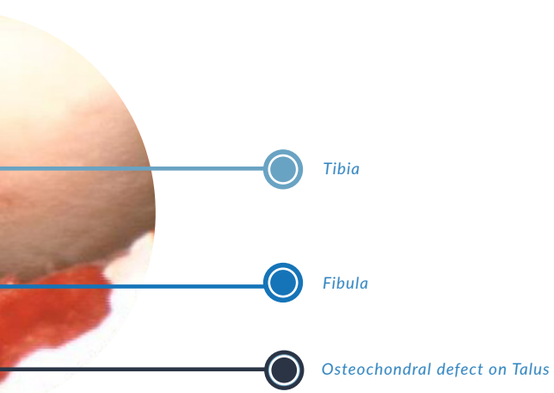
OSTEOCHONDRAL LESIONS

A swollen, warm and unstable ankle, pain, motion limitation; all these symptoms may point towards a focal osteochondral lesion and can limit your quality of life. Cartilage has no pain fibres and therefore it cannot be the source of any pain. The bone beneath the cartilage, on the other hand, is richly innervated with pain fibres.

The most suitable treatment for osteochondral lesions is dependent on your age, activity level and the severity of your lesion.

Episurf Medical has developed a personalised treatment option that replaces the affected area of the joint surface. The goal of the surgery is to restore the ankle function and reduce the pain significantly, as well as stop or delay the need for a joint replacement surgery or ankle fusion.



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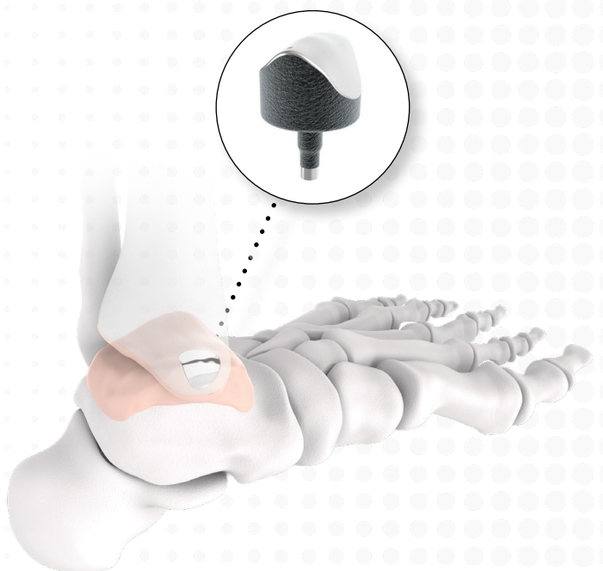
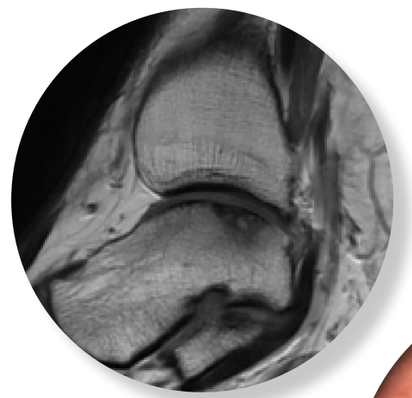
EPISEALER®: PERSONALISED JOINT RESURFACING

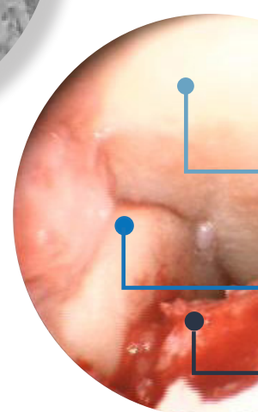


TALUS BONE AND CARTILAGE

In the ankle, the tibia (shin bone), fibula (calf bone) and talus (ankle bone) meet. It is a weight-bearing joint that allows the foot to extend and flex. The surface where one bone meets the other is covered by a resilient and smooth tissue called cartilage. It acts as a shock absorber and it is lubricated by joint fluid that ensures low friction in the joint.

Pain in the ankle joint is a common condition that can affect people of all ages. This pain can be caused by a sudden ankle injury (e.g. ankle sprain or fracture) or an underlying condition such as arthritis. The condition of the articular talus cartilage itself and that of the underlying bone are highly intertwined, and, when assessing a painful ankle joint, there are many reasons to focus on the entire cartilage and bone unit, instead of just focusing on the cartilage surface alone.





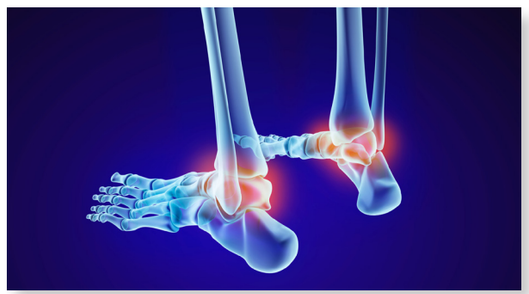
Your Episealer® timeline

CT/MRI → Damage Marking Report → Surgeon Approval → Design of Episealer® and Epiguide® → Manufacturing of Episealer® and Epiguide® → Surgery and Rehab

1. CT/MRI

The treatment starts with a CT or MRI scan of your ankle. This scan allows your surgeon to see where and how significant the damage is. The dedicated Episurf Medical CT/MRI protocol consists of sequences to show the damage as well as the exact geometry of your ankle.

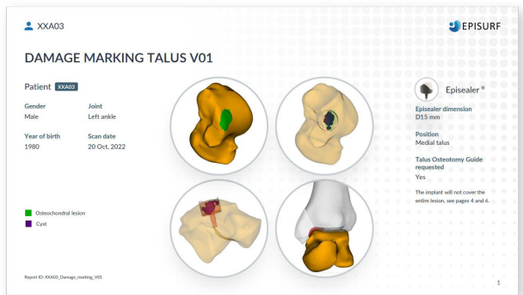
Through µiFidelity®, Episurf Medical's online order management system, the CT/MRI images are anonymised and sent securely from the hospital to Episurf Medical.

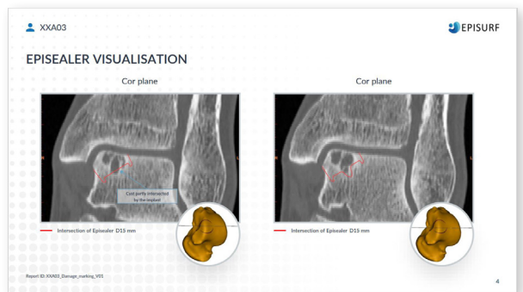


2. DAMAGE MARKING REPORT

The CT/MRI scans are used to create a virtual 3D model of your talus bone, which helps us to assess the cartilage and bone damage. The conclusions are presented in our "Damage Marking Report".

A proposal is made regarding the design of a suitable Episealer®. If the defect is too large or an Episealer® is for some other reason not considered appropriate, this will be mentioned in the report. The report is sent to your surgeon for approval. Further adjustments can be made to the Episealer's design to ultimately get an implant that meets your personal requirements.

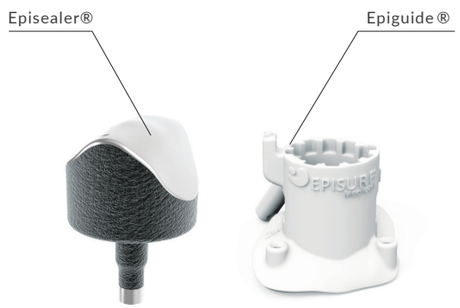




3. EPISEALER® AND EPIGUIDE®

As soon as your surgeon approves the report and confirms the order, your Episealer® implant and associated instruments will be produced.

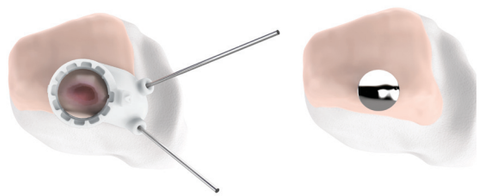
The surface and thickness of your Episealer® are precisely engineered according to the anatomy of your ankle and the position of your lesion. It is made of a cobalt-chromium metal alloy, which is widely used in orthopaedics. The Episealer® has a dual coating (titanium and hydroxyapatite) where the Episealer® comes into contact with the bone and surrounding cartilage. The upper part is polished to provide a smooth articulation in your ankle.



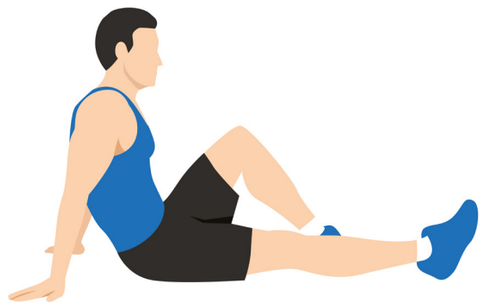
In order to precisely target the area of damage, a personalised Epiguide® is produced that will enable your surgeon to place the Episealer® in the correct position. This guide is manufactured using 3D printing technology and will lock perfectly onto your anatomy during the surgery to implant the Episealer®.

4. SURGERY

The implantation takes place under anaesthesia. The personalised instrument kit minimises the number of steps during surgery and ensures proper positioning.



5. REHABILITATION



After the surgery, the rehabilitation is started. Follow the instructions of your surgeon and physiotherapist carefully. Ice applications and elevating the leg alleviates swelling and pain.