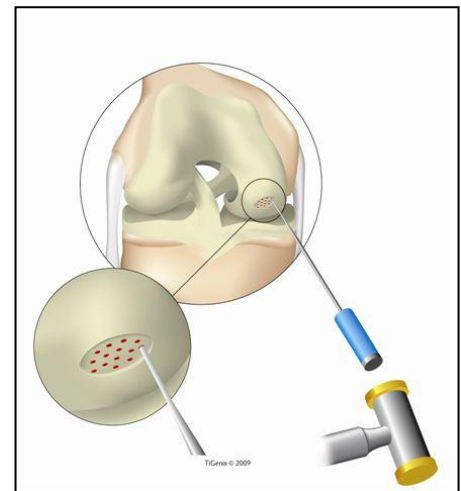


For a long time Orthopaedic Surgeons and scientists have been looking for a reproducible way of regenerating articular cartilage, which is the smooth cartilage that lines the end of the bones that form joints. This cartilage is known as hyaline cartilage and has a very poor blood and nerve supply. This results in a very poor ability to regenerate or heal itself following damage. Numerous techniques have been tried since the first attempts in 1994 under the guidance of Dr Lars Peterson in Sweden.

The microfracture procedure, as outlined by Dr Steadman (CLIN.ORTHOP.2001) from Vail, Colorado, is a common method of articular cartilage treatment at this point in time. This involves removing any loose cartilage debris from the end of the bone, stabilising the native cartilage edges, and then drilling small holes approximately 3mm in depth into the bone to reach the marrow cells in the subchondral bone. This then allows the marrow cells to fill the defect, like bitumen is laid in a pot-hole on the road. These marrow cells then transform into a scar cartilage that adheres to the bone and fills the defect and allows absorption of load and a smooth articular surface for joint motion.



The microfracture procedure is performed using the arthroscope, is a day surgery procedure, and involves the patient to start immediate cyclic-loading exercises such as a stationery exercise bike. The downside of this procedure is that the patient may be required to stay on crutches for a period of 4 to 6 weeks while the lesion heals. This may vary depending on the size of the lesion and the surrounding cartilage edges as judged in surgery.

The results of the microfracture procedure are the gold standard at this point in time as other cartilage procedures that have been developed and tried have equal results but potentially more complications. Most patients have an 80% chance of having prolonged life in their knee from the procedure. 1 in 5 patients do not have resolution of their symptoms and may need to undergo further procedures to offload the joint or attempt to fill the defect with more robust cartilage.