

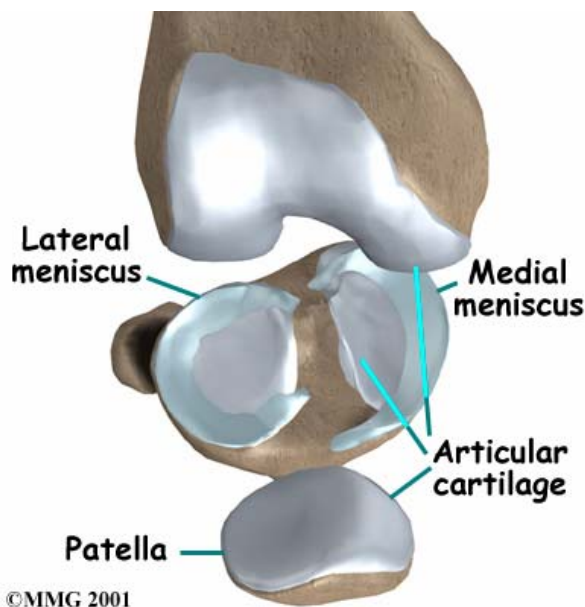
Replacing the Meniscus – Transplant Relieves Pain, Restores Function and Possibly Delays Osteoarthritis

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The meniscus is a vital part of the knee that functions as a cushion and provides stability to the knee. The meniscus itself is a cartilaginous structure with a very complex collagen matrix that gives it the ability to cushion, yet be soft enough that it doesn't damage the articular surfaces of the knee.

Another type of cartilage, called articular cartilage, covers the ends of the bones in the knee joint. The meniscus protects this articular cartilage, an important function because if this cartilage degenerates, the knee will progress to osteoarthritis. Therefore, the consequences of meniscectomy (removal of the meniscus) can be chronic pain, loss of stability, chondral (cartilage) degeneration, and progression to osteoarthritis.



View of the flexed knee shows the position of the meniscus — actually two crescent-shaped cartilaginous structures that cushion the bones in the knee, help stabilize the knee, and protect other cartilage in the joint. By preserving this articular cartilage, the meniscus helps the knee avoid degenerating into osteoarthritis.

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The most common injury to the meniscus is athletic or accidental, producing a torque or twisting injury. The option of the surgeon is to repair the meniscus or, if the meniscus cannot be repaired, usually to remove it because the knee will not function well with a torn piece of meniscus in the knee joint. Most often the meniscus is not reparable and the torn piece requires removal. Removal of too much of the meniscus basically starts the degenerative process in the knee. There is no synthetic material to replace the meniscus.

Over the last 15 years we have had the option of meniscal transplant for patients who have had total meniscectomies and continue to suffer pain. The aim of the transplant is to return patients to reasonable function without pain while also attempting to delay the articular cartilage from progressing to osteoarthritis. The only transplant available is a cadaveric meniscus.

The meniscus is harvested in the same way other tissue is harvested for allograft transplant. Tissue typing is not necessary in bone and tendon transplantation. The most important part of meniscus transplantation is to achieve proper sizing. Appropriate X-rays are taken, and a search is made through various organizations for a transplant of the appropriate size.

A candidate for transplant must have a stable knee, i.e., no ligamentous instability, correct alignment of the knee, and no osteoarthritis in the knee. We now have an almost 15-year-experience in meniscus transplantation at our center. We are constantly updating our results so that we can be fairly accurate about what patients can expect from a meniscus transplant. Patients may not return to marathon running, but activities such as cycling, hiking, and short-distance sports are reasonable expectations.

Our results have shown that meniscal transplantation does seem to protect the joint from progressing to osteoarthritis but for varying amounts of time. Some of our patients still have intact menisci at 15 years after implantation. We have also had patients whose menisci and joints have degenerated after 10 years and have undergone further reconstructive knee procedures, such as total knee replacement. No operation will be 100 percent successful in every case, and that is certainly our experience with meniscal transplantation.

In conclusion, meniscus transplantation is not investigational and not experimental. It can prolong the longevity of an otherwise compromised knee. Whether it can truly delay osteoarthritis for longer than 15 years remains to be seen. We find that the meniscus transplantation procedure is a very useful tool in treatment of this particular subset of challenging knee problems.

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