The verdict is in on the subject of meniscectomy (removal of the meniscus) -- don't do it unless it's absolutely necessary. And sometimes there is no way around it. But whenever possible, surgeons repair the damage and save as much of the natural meniscus (knee cartilage) as possible.

The menisci (plural for meniscus) sit between the femur (thigh bone) and the tibia (lower leg bone). These structures are sometimes referred to as the cartilage of the knee, but the menisci differ from the articular cartilage that covers the surface of the joint. The menisci support the knee joint, help distribute and transfer the load, and provide nutrition and lubrication to the joint. Without it, the concentration of force into a small area on the articular cartilage can damage the joint surface. Research clearly shows early osteoarthritis from joint degeneration is to be expected.

There are different ways to approach the treatment (and prevention) of this type of joint degeneration after meniscectomy. One of those has been around for the last 25 years: the allograft meniscal transplantation. Allograft means the patient is receiving meniscal tissue donated by someone else (after death). The menisci are harvested and preserved by freezing them until needed. The patient receiving the graft is carefully tissue-typed to find a match with donor (allograft) tissue.

This study from the Netherlands reports on the long-term results of this procedure. How long does it last? Does it provide long-term pain relief and improvement in function? Can it delay the need for a total knee replacement? Fifty-seven (57) men and women between the ages of 26 and 55 participated in the study. They all received a meniscal allograft transplantation after meniscectomy. Some had just part of the meniscus removed. Others had a complete meniscectomy. The allograft procedure was done anywhere from two to 33 years after the meniscectomy. It was usually performed because the patient had developed painful and disabling knee osteoarthritis.

The authors have been studying the results of this treatment method since 1995. Patients are not reevaluated in a clinical setting, but rather, fill out several surveys sent to them by mail. The questions they answer come from three standard tools used to measure knee function and assess level of disability. The instruments used included the Knee Injury and Osteoarthritis Outcome Score (KOOS), the Lysholm Score, and the International Knee Documentation Committee (IKDC) scoring system.

The results of the study provided some valuable data. First, the overall failure rate of the allograft procedure was 29 per cent. That's almost one-third of the total group. Failure meant the graft had to be removed surgically. Graft failure occurred four to 14 years later, so you can see the graft did buy the patients some time before having a total knee replacement. And scores from the tests showed that there was a significant improvement in pain and function from before to after the allograft procedure. So, the procedure may have failed, but all was not a complete loss.

A closer look at the data revealed a few other interesting and important findings. It didn't seem to matter which side of the meniscus (medial or lateral) was removed and replaced with an allograft. The final results didn't differ among patients. That was a bit of a surprise because the two sides of the menisci have slightly different shapes and different functions. Patients who wait too long and have too much damage to the articular cartilage under the meniscus are not good candidates for this procedure. They would do better to just go ahead and have a joint replacement.

The authors found that the transplanted menisci don't last indefinitely, even though they attach well to the joint surface and regain a blood supply. But they concluded that allograft meniscal transplantation is an
effective treatment following meniscectomy for young patients (younger than 55 years old). The survival rate of the transplanted tissue is enough to delay major surgery (i.e., total knee replacement). And that's good news because knee replacements don't last forever either. And for younger adults facing severe degenerative arthritis, having a stop-gap measure between meniscectomy and joint replacement buys them some pain free time with improved daily function.

The best candidate for an allograft meniscal transplantation is a younger adult (less than 50 years old) with an intact anterior cruciate ligament (ACL) needed for good support and stability. Without a healthy ACL, the meniscus is subject to even higher demands. The allograft is more likely to detach and fail when the knee is unstable because of a deficient ACL. The ACL should be repaired first before doing the allograft. Normal knee alignment is necessary for a good result. The allograft is done when meniscectomy patients develop painful and limiting unicompartmental arthritis (affecting one side of the joint).

Future studies are needed to determine the best time to perform the allograft transplantation. There is some evidence that men and women have different results, maybe because of different activity levels. This sex-based difference should be investigated further. The authors intend to continue evaluating long-term results as well as compare results based on various surgical techniques used to attach the implants.

Reference: