

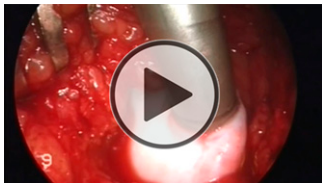
KEY PROCEDURES

OSTEOCHONDRAL AUTOGRAFT TRANSPLANT (MOSAICPLASTY) FOR KNEE ARTICULAR CARTILAGE DEFECTS

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Published outcomes of this procedure can be found at: *Am J Sports Med.* 2018 Mar;46(4):826-31, *J Orthop.* 2018 Jan 31;15(1):222-5, and *Am J Sports Med.* 2010 Feb;38(2):231-7.

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Abstract

Osteochondral autograft transplant (mosaicplasty) is a cartilage repair procedure for patients with knee articular cartilage lesions of a substantial size ($>3 \text{ cm}^2$). Patient selection is key to a successful result; patients with established osteoarthritis or systematic disorders such as rheumatoid arthritis should not undergo surgery. An exercise program involving neuromuscular training for a minimum of 3 months should be attempted before proceeding to osteochondral autograft transplant. The procedure can, in many cases, be performed arthroscopically. Patients should, however, provide consent for a mini-arthrotomy as this might be needed to achieve optimal access for graft harvesting and insertion. The procedure, in general, consists of 4 major steps. (1) At the initial arthroscopic examination, the size and localization of the defect are assessed after a proper debridement has been performed. The number and size of autografts needed can thereafter be assessed. (2) Graft harvesting is then performed from the periphery of the non-weight-bearing trochlea. (3) To prepare for graft insertion at the recipient site, a drill guide is inserted perpendicular to the joint surface in the defect to allow graft sockets to be reamed. (4) Grafts should be spaced approximately 3 mm apart to avoid confluence of tunnels and weakening of condyles. The orientation and depth of insertion of the grafts are key to mimic the native curvature of the affected joint surface.

After an initial phase of non-weight-bearing focusing on range of motion, a gradual increase in neuromuscular exercises is recommended. Patients are typically advised to delay their return to sports until 6 months at the earliest. Results after mosaicplasty have shown that the procedure improves subjective outcomes, compared with baseline function, for up to 10 years after surgery. The additional effect over traditional microfracture treatment is, however, reduced over time. A study evaluating early factors affecting outcomes after cartilage repair procedures (including mosaicplasty) found that a series of factors, such as the time from the onset of symptoms to surgery, number and size of lesions, location and quality of surrounding cartilage, as well as concomitant meniscal injuries, were important³.

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NOTE: The tables in Video 10 entitled “Predictors of a good or excellent outcome (Lysholm score 80 or higher) by odds ratio” and “Predictors of a poor result (knee replacement and/or Lysholm score < 64) by odds ratio” are reproduced from: Solheim E, Hegna J, Inderhaug E. Early determinants of long-term clinical outcome after cartilage repair surgery in the knee. *J Orthop*. 2018 Jan 31;15(1):222-5. Copyright 2018, with permission from Elsevier.

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