

Policy #: 111

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Title

Osteochondral Allograft Transplantation
Osteochondral Autograft Transplantation

For Autologous Chondrocyte Implantation, please see policy #[374](#)

Description

Focal chondral defects of the knee often fail to heal on their own and may be associated with pain, loss of function, disability, and the long-term complication of osteoarthritis. These defects may be due to trauma or other conditions such as osteochondritis dissecans. The ideal resurfacing technique would eliminate symptoms, restore normal biomechanics of the knee joint, and prevent the long-term emergence of osteoarthritis and the necessity for total knee arthroplasty. Various methods of cartilage resurfacing have been investigated including marrow-stimulation techniques such as subchondral drilling, microfracture, and abrasion arthroplasty, all of which are considered standard therapies and all of which attempt to restore the articular surface by inducing the growth of fibrocartilage into the chondral defect. However, fibrocartilage does not share the same biomechanical properties as hyaline cartilage, and thus various strategies for chondral resurfacing with hyaline cartilage have been investigated. Autologous chondrocyte implantation involves the harvesting of normal chondrocytes from normal non-weight-bearing articular surfaces, which are then cultured and expanded in vitro and then transplanted back into the patient. Autologous chondrocyte implantation is considered separately in Medical Policy #374.

Osteochondral allografting involves transplantation of a piece of articular cartilage and attached subchondral bone from a cadaver donor to a damaged region of the articular surface of a joint. This procedure is considered one of the alternatives for repairing articular cartilage defects. The donor grafts consist of the articular surface with an underlying segment of bone that helps to secure the graft to the underlying host bone.

In osteochondral autograft mosaicplasty, a series of small bone and cartilage grafts are harvested from a non-weight-bearing region of the joint during an arthroscopic procedure and then transplanted into the cartilage defect where they contribute to regeneration and repair of the articular surface while the bone remains undisturbed. The bone base of the transplant acts as an anchor and enables secure fixation and integration with surrounding bone. In mosaicplasty, this is done in a mosaic pattern. The osteochondral autograft transplantation (OATS) procedure is similar to mosaicplasty, involving the use of a larger, single plug that generally fills the entire osteochondral defect. Osteochondral autografting has also been investigated as a treatment of unstable osteochondritis dissecans lesions using multiple dowel grafts to secure the fragment. While osteochondral autografting is primarily performed on the femoral condyles of the knee, osteochondral grafts have also been used to repair chondral defects of the patella, tibia, and ankle.

When services are covered for commercial products and for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx

Osteochondral Allograft Transplantation

We cover **osteochondral allograft transplantation** as a technique to repair full-thickness chondral defects caused by acute or repetitive trauma,¹ in patients who have failed to respond to conservative therapy for six

months **OR** in patients who have had an inadequate response to a prior surgical procedure, when **ALL** of the following have been met: ¹

- Adolescent patients should be skeletally mature with documented closure of growth plates (e.g., 15 years or older). Adult patients should be too young to be considered an appropriate candidate for total knee arthroplasty or other reconstructive knee surgery.
- Focal, full-thickness uni-polar lesions on the weight-bearing surface of the femoral condyles or trochlea that are greater than or equal to 2 cm² in size
- Documented minimal to absent degenerative changes in the surrounding cartilage, and normal-appearing hyaline cartilage surrounding the border of the defect
- Normal knee biomechanics, or alignment and stability achieved concurrently with osteochondral grafting
- Intact meniscus is present
- Body Mass Index (BMI) less than 35
- Patient is willing and able to comply with post-operative weight-bearing restrictions and rehabilitation.

Osteochondral Autograft Transplantation

We cover **osteochondral autografting**, using 1 or more cores of osteochondral tissue, for the treatment of symptomatic full-thickness cartilage defects caused by acute or repetitive trauma, in patients who have failed to respond to conservative therapy for six months **OR** in patients who have had an inadequate response to a prior surgical procedure, when **ALL** of the following have been met: ¹

- Adolescent patients should be skeletally mature with documented closure of growth plates (e.g., 15 years or older). Adult patients should be too young to be considered an appropriate candidate for total knee arthroplasty or other reconstructive knee surgery.
- Focal, full-thickness uni-polar lesions on the weight-bearing surface of the femoral condyles or trochlea that are between 1 and 2.5 cm² in size
- Documented minimal to absent degenerative changes in the surrounding cartilage, and normal-appearing hyaline cartilage surrounding the border of the defect
- Normal knee biomechanics, or alignment and stability achieved concurrently with osteochondral grafting
- Intact meniscus is present
- Body Mass Index (BMI) less than 35
- Patient is willing and able to comply with post-operative weight-bearing restrictions and rehabilitation.

When services are not covered for commercial products or for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx

We do not cover **osteochondral allograft transplantation and osteochondral autograft transplantation (OATS/mosaicplasty)** for the knee when the criteria above are not met. ¹

We do not cover **osteochondral allograft transplantation or osteochondral autograft transplantation (OATS/mosaicplasty)** for all other joints, including patellar and talus (ankle), ¹ because it is considered investigational as it does not meet our Medical Technology Assessment Guidelines, #350.

Individual consideration

All our medical policies are written for the majority of people with a given condition. Each policy is based on medical science. For many of our medical policies, each individual's unique clinical circumstances may be considered in light of current scientific literature. For consideration of an individual patient, physicians may send relevant clinical information to:

For services already billed

Blue Cross Blue Shield of Massachusetts
 Provider Appeals
 PO Box 986065
 Boston, MA 02298

Prior to performance of service

Blue Cross Blue Shield of Massachusetts
 Case Creation/Medical Policy
 One Enterprise Drive
 Quincy, MA 02171
 Tel: 1-800-327-6716
 Fax: 1-888-641-5330

Managed care guidelines

- Any specialist visit requires a referral for Medicare HMO Blue.
- For all other Managed Care plans, any specialist visit requires a referral, except for visits performed by OB/GYN specialists.
- Authorization is required.

Indemnity and PPO guidelines

All authorization requirements are determined by the individual's subscriber certificate, however:

- Referrals to a specialist are not required.
- Authorization is required.

Other information

For our Medical Technology Assessment Guidelines, see document #350.

Coding information

Procedure codes are from current CPT, HCPCS Level II, Revenue Code, and/or ICD-9-CM manuals, as recommended by the American Medical Association, Centers for Medicare and Medicaid Services and American Hospital Associations. Blue Cross Blue Shield Association national codes may be developed when appropriate.

The following codes are included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

CPT codes:

- **27416:** osteochondral autograft(s), knee, open (e.g., mosaicplasty) (includes harvesting of autograft[s]) (*New 2008 CPT code*)
- **29866:** arthroscopy, knee, surgical; osteochondral autograft (s) (e.g., mosaicplasty) (includes harvesting of the autograft[s])
- **27415:** osteochondral allograft, knee, open
- **29867:** arthroscopy, knee, surgical; osteochondral allograft (e.g., mosaicplasty)

Note: The procedure noted below will reject as non-covered for commercial products and for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx, leaving **no** patient balance because this procedure does not meet our Medical Technology Assessment Guidelines.

- **28446:** open osteochondral autograft, talus (includes obtaining graft[s]) (*New 2008 CPT code*)

Facility coding**ICD-9 CM procedure codes:**

- **81.47:** other repair of knee

Policy update history

Updated 10/03 to include coverage for the OATS procedure effective 1/1/04. Updated 12/03 with managed care and indemnity guidelines requiring prior authorization for OATS procedure, effective 1/1/04. Reviewed 7/04 MPG Orthopedic, no changes in coverage were made. Reviewed 7/05 MPG-Orthopedic, no changes in coverage were made. Updated 8/05 to reformat policy and to clarify coverage guidelines for osteochondral allografts and osteochondral autografts, effective 8/05. Updated 2/06 to include rationale and references from BCBSA national policy issued 8/05 specific to BCBSA's non coverage of osteochondral autografts and allografts under footnote 5. Reviewed 7/06 MPG - Orthopedic/Rheumatology, no changes in coverage were made. Updated 4/07 removed BCBSA national policy references related to osteochondral allograft and autograft transplantation under footnote 5, additional references added to footnote 5. Reviewed 7/07 MPG - Orthopedic/Rheumatology, no changes in coverage were made. Updated 2/08 after review of BCBSA policy 7.01.78 issued 12/07, without change in coverage exclusion of osteochondral allograft or autograft transplantation for joints other than the knee, including but not limited to, the ankle (talus), rationale and references specific to joints other than the knee, captured under footnote 6. Updated 7/08 after review of BCBSA policy issued 5/08, without change in coverage exclusion of osteochondral allograft or autograft transplantation for joints other than the knee, including but not limited to, the ankle (talus); reference 20 added under footnote 6. Reviewed 7/08 MPG- orthopedics, no changes in coverage were made. Osteochondral Allograft and Autograft Transplantation procedures were previously addressed under medical policy #374, Autologous Chondrocyte Implantation. New policy, effective 8/1/09, addressing coverage and non coverage of osteochondral allograft and autograft transplantation.

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Footnotes

¹ Based on on BCBSA national policy 7.01.78 Osteochondral Autografts and Allografts in the Treatment of Focal Articular Cartilage Lesions, issued 11/08.