Osteochondral Graft Fixation

Knee and Biologics Brochure

Arthrex®

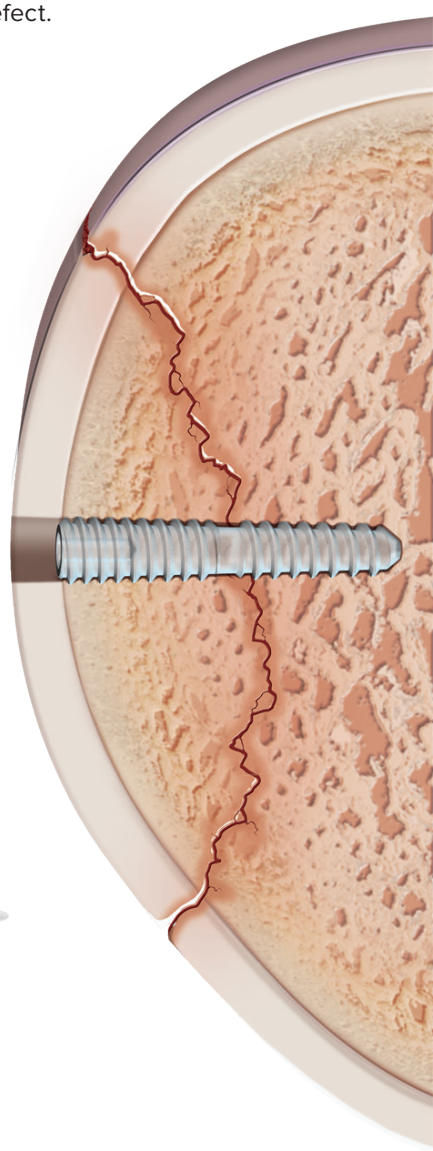
Osteochondral Introduction

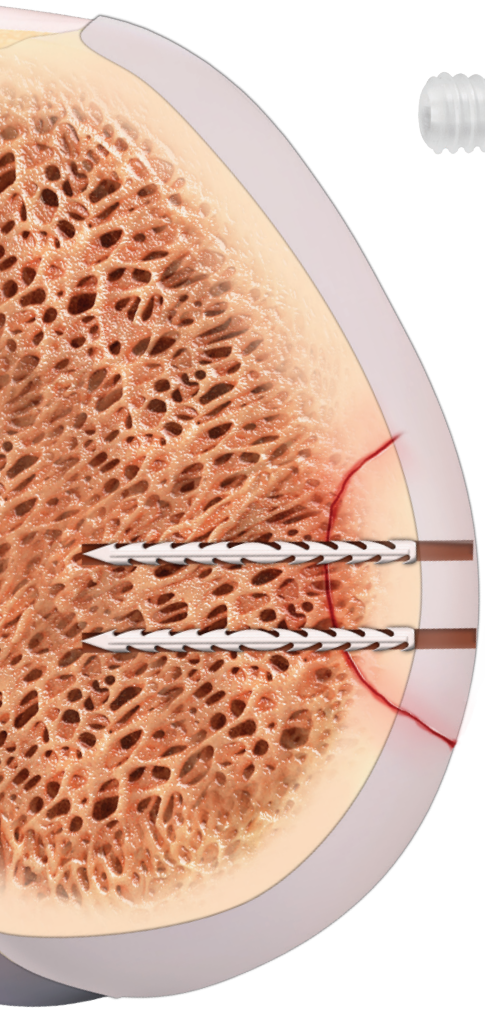
Unstable osteochondral lesions may require additional fixation to reduce the chondral fragment sufficiently and allow healing. The Bio-Compression and Chondral Dart™ Implant Kits include the disposables for chondral flap reduction and fixation.

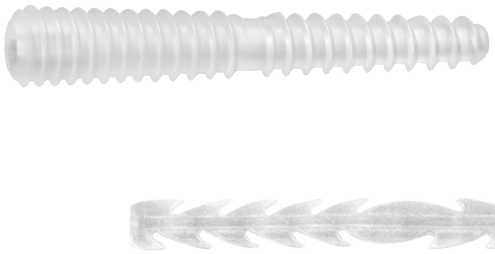
For cartilage restoration, OATS®, BioUni®, and BioPatella™ systems provide an instrumented approach for the harvest and press-fit transplantation of an osteochondral plug. Supplemental fixation of an osteochondral plug may be necessary due to the shape of the created donor plug or the location of the articular defect.

Fixation

Bio-Compression Screw
Bio-Compression screws may be used to fixate osteochondral fragments, flaps, or grafts. The 2.7 mm Bio-Compression screw eliminates the challenges of metal screw removal, soft-tissue impingement, and unwelcome image scatter. For osteochondral graft fixation, this screw offers interfragmentary compression and a headless profile to promote healing. At full seating, the screw should sit 2 mm to 3 mm below the articular surface to reduce the risk of backout and damage to the articular surface.





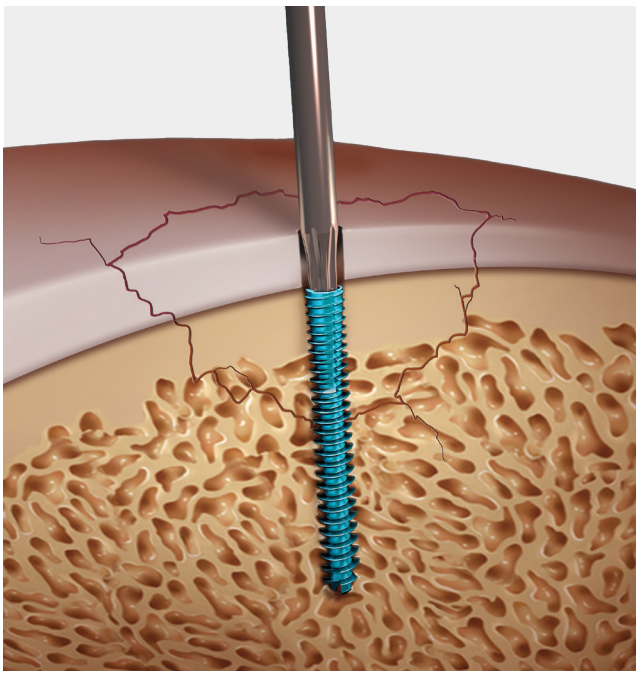


Chondral Dart Implant
The bioabsorbable PLLA Chondral Dart implant has a unique, double-reversed barbed design to facilitate superior fixation and compression of osteochondral flap tears up to 2 cm in diameter. The 18 mm-long, 1.3 mm-diameter Chondral Dart implant provides secure fixation under the hyaline cartilage surface to eliminate contact with sensitive articular surfaces.

For flap tears 1 cm or less, the surgeon may select the single-shot instruments to introduce a single Chondral Dart implant to secure the flap.

Headless Compression Screws
The headless, cannulated, titanium 2.5 micro, 3.5 mini, and 4.0 standard compression FT screws feature a variable-stepped pitch design to reduce the risk of profile complications and provide compression for an osteochondral fragment or allograft transplant.

- **Variable-Stepped Thread Pitch:** Wider thread pitch at the tip of the screw enters the bone faster than each trailing thread, compressing the fragments progressively as the screw is advanced.
- **Cannulated:** Cannulated screws and instrumentation allow for provisionary fixation of osteochondral fragment or transplant using a guidewire.
- **Headless:** Titanium screws can be implanted intra-articularly with minimal risk of impingement, allowing surgeons to achieve zero-profile stable fixation of an osteochondral transplant.



Product Description	Item Number
Bio-Compression Screw	
Bio-Compression Screw Instrument Set	AR-**5025S**
Bio-Compression Screw, 3 mm to 3.7 mm × 16 mm	AR-**5025B-16**
Bio-Compression Screw, 3 mm to 3.7 mm × 18 mm	AR-**5025B-18**
Bio-Compression Screw, 2.7 mm to 3.7 mm × 20 mm	AR-**5025B-20**
Bio-Compression Screw, 3 mm to 3.7 mm × 22 mm	AR-**5025B-22**
Bio-Compression Screw, 3 mm to 3.7 mm × 24 mm	AR-**5025B-24**
Bio-Compression Screw, 3 mm to 3.7 mm × 26 mm	AR-**5025B-26**
Osteochondral Repair	
Osteochondral Flap Repair (single-shot set)	AR-**4009S**
Osteochondral Flap Repair (multishot set)	AR-**4095S**
Chondral Dart™ Implant, 18 mm	AR-**4005B-18**

Compression FT Screw System

Product Description	Item Number
2.5 Micro Compression FT Screws	
8 mm to 14 mm (1 mm increments)	AR-**8725-08H – 14H**
16 mm to 50 mm (2 mm increments)	AR-**8725-16H – 50H**
3.5 Mini Compression FT Screws	
12 mm to 60 mm (2 mm increments)	AR-**8730-12H – 60H**
4.0 Standard Compression FT Screws	
16 mm to 60 mm (2 mm increments)	AR-**8740-16H – 60H**

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Cartilage Preservation

As the market leader in cartilage preservation, Arthrex offers the most comprehensive articular cartilage product portfolio, including several solutions for osteochondral allograft (OCA) transplantation. Fresh OCAs are comprised of mature hyaline cartilage containing viable chondrocytes and subchondral bone intended for OCA transfer procedures.

The fundamental paradigm of fresh OCA transplantation is viable chondrocytes that survive storage and subsequent transplant maintain their metabolic activity and sustain their surrounding matrix to provide an intact structural and functional unit to replace diseased articular tissue.

Chondrocyte viability in OCA is critical to graft survival and clinical outcomes.[1]

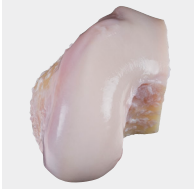
Arthrex partners with both JRF Ortho and LifeNet Health to source fresh cartilage allografts. Both JRF Ortho and LifeNet health offer patient-specific matching for fresh osteochondral allografts. Though matching is not required, it is encouraged to ensure an appropriate allograft is selected for the procedure. An acceptable geometric match is linked to restoration of physiologic contact stresses at the joint, whereas elevated or incongruent grafts can lead to increased pressures.[2]

Bone marrow stimulation using the PowerPick™ device can be done prior to graft implantation to prepare the bone bed.

OCA Cores

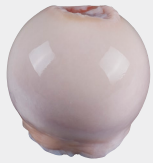
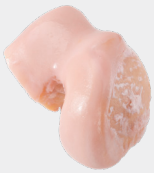
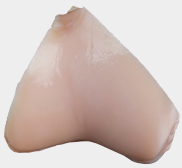
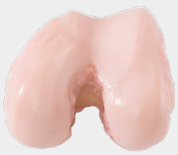
Image	Product Description	JRF Ortho (Part Number)	LifeNet Health (Part Number)
	10 mm OCA Core	45647010	RFP10
	16 mm OCA Core	45647016	RFP16

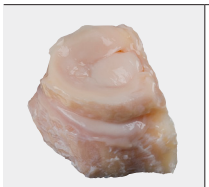
Osteochondral Allografts

Image	Product Description	JRF Ortho (Part Number)	LifeNet Health (Part Number)
	Lateral Hemi Femoral Condyle Right/Left	Right (32147001) Left (32147002)	Right (FCD80) Left (FCA80)
	Medial Hemi Femoral Condyle Right/Left	Right (32247001) Left (32247002)	Right (FCC80) Left (FCB80)

	Talus Right/Left	Right (32647001) Left (32647002)	Right (ATR80) Left (ATL80)
	Distal Tibia Right/Left	Right (32747001) Left (32747002)	Right (TDR80) Left (TDL80)

Specialty Grafts

Image	Product Description	JRF Ortho (Part Number)	LifeNet Health (Part Number)
	Femoral Head Right/Left	Right (41847001) Left (41847002)	Right (FHR80) Left (FHL80)
	BiCompartment, Lateral and Trochlea Right/Left	Right (43747003) Left (43747004)	Right (FTD80) Left (FTA80)
	BiCompartment, Medial and Trochlea Right/Left	Right (43647003) Left (43647004)	Right (FTC80) Left (FTB80)
	Femoral Trochlea Right/Left	Right (43547001) Left (43547002)	Right (FTR80) Left (FTL80)
	Whole Distal Femur Right/Left	Right (33547001) Left (33547002)	Right (FCR80) Left (FCL80)
	Whole Tibial Plateau w/ Meniscus Right/Left	Right (32447001) Left (32447002)	Right (TFR80) Left (TFL80)
	Lateral Tibial Plateau w/ Meniscus Right/Left	Right (45047001) Left (45047002)	

	Medial Tibial Plateau w/ Meniscus Right/Left	Right (44947001) Left (44947002)	
	Patella Right/Left	Right (33647001) Left (33647002)	Right (PAR80) Left (PAL80)
	Humeral Head Right/Left	Right (41247001) Left (41247002)	Right (HHR80) Left (HHL80)
	Distal Humerus Right/Left	Right (44647001) Left (44647002)	
	Proximal Ulna Right/Left	Right (45847001) Left (45847002)	
	Proximal Metatarsal Right/Left	Right (44747001) Left (44747002)	
	Distal Metatarsal Right/Left	Right (44847001) Left (44847002)	

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References

1. Cook JL, Stannard JP, Stoker AM, et al. Importance of donor chondrocyte viability for osteochondral allografts. *Am J Sports Med.* 2016;44(5):1260-1268. doi:10.1177/0363546516629434
2. Koh JL, Wirsing K, Lautenschlager E, Zhang LO. The effect of graft height mismatch on contact pressure following osteochondral grafting: a biomechanical study. *Am J Sports Med.* 2004;32(2):317-320. doi:10.1177/0363546503261730

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