Quick Facts

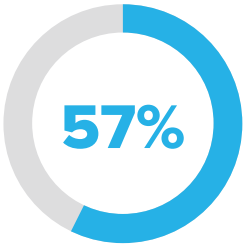
IntraOsseous BioPlasty® Technique

(IOBP® Technique)

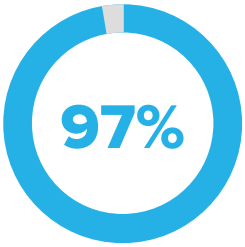
Subchondral bone marrow lesions (BMLs) are important to identify and treat, as they are highly predictive of total knee arthroplasty (TKA)[1]

BMLs can result from[1]:

- Subchondral insufficiency fractures
- Osteoarthritis
- Avascular necrosis
- Acute trauma
- Chronic trauma
- Delayed bone union
- Osteoporosis

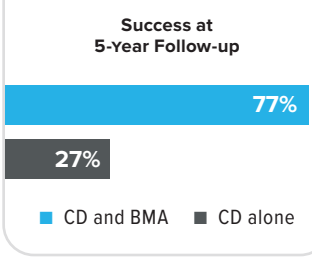


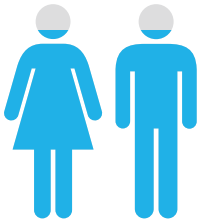
Increased chance of a patient needing TKA within two years if BMLs are left untreated[2]



Greater intraosseous pressures measured in medial and lateral femoral condyles of patients with BMLs than in patients without BMLs[3]

Core decompression (CD) alone is not effective at treating necrotic lesions[4]

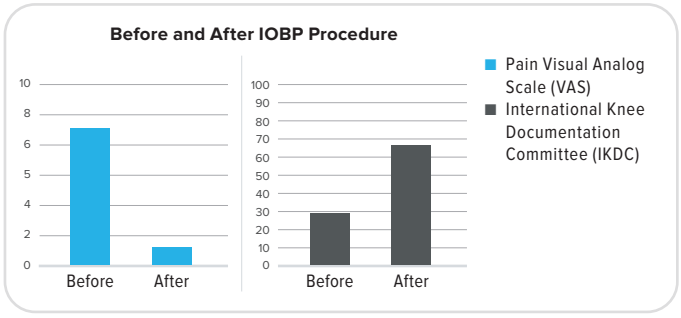




Bone repair after BMA injection was observed in 88% of patients[5]

1.19%

At 15-year (on average) follow-up, treatment with cell therapy resulted in per-year revision rates similar to TKA (1.19% versus 1.0%, respectively)[6]



The IOBP technique is associated with clinically significant improvements in pain and function[3]

Achieve Joint Preservation Through Comprehensive Treatment of BMLs:

- Multiple kit options tailored to treat BMLs of the knee, hip, and talus
- IOBP core decompression device has a 3.3 mm diameter that can achieve a 7 mm cortex-sparing decompression
- The IOBP technique includes use of the Arthrex Angel® cPRP and bone marrow processing system and AlloSync™ Pure demineralized bone matrix to encourage bone remodeling and repair
- Simple procedure with a low complication rate; patients can bear weight as tolerated, allowing them an early return to function and activities of daily living[7,8]

References

1. Bonadio MB, Filho AGO, Helito CP, Stump XM, Demange MK. Bone marrow lesion: image, clinical presentation, and treatment. *Magn Reson Insights*. 2017;10:1178623X17703382. doi:10.1177/1178623X17703382 **2.** Tanamas SK, Wluka AE, Pelletier JP, et al. Bone marrow lesions in people with knee osteoarthritis predict progression of disease and joint replacement: a longitudinal study. *Rheumatology* (Oxford). 2010;49(12):2413-2419. doi:10.1093/rheumatology/keq286 **3.** Kasik CS, Martinkovich S, Mosier B, Akhavan S. Short-term outcomes for the biologic treatment of bone marrow edema of the knee using bone marrow aspirate concentrate and injectable demineralized bone matrix. *Arthrosc Sports Med Rehabil*. 2019;1(1):e7-e14. doi:10.1016/j.asmr.2019.07.001 **4.** Gangji V, De Maertelaer V, Hauzeur JP. Autologous bone marrow cell implantation in the treatment of non-traumatic osteonecrosis of the femoral head: five year follow-up of a prospective controlled study. *Bone*. 2011;49(5):1005-1009. doi:10.1016/j.bone.2011.07.032 **5.** Hernigou PH, Mathieu G, Poignard A. Percutaneous autologous bone-marrow grafting for nonunions. Surgical technique. *J Bone Joint Surg Am*. 2006 Sep;88 Suppl 1 Pt 2:322-7. doi:10.2106/JBJS.F.00203 **6.** Hernigou P, Delambre J, Quiennec S, Poignard A. Human bone marrow mesenchymal stem cell injection in subchondral lesions of knee osteoarthritis: a prospective randomized study versus contralateral arthroplasty at a mean fifteen-year follow-up. *Int Orthop*. 2021;45(2):365-373. doi:10.1007/s00264-020-04571-4 **7.** Martin JR, Houdek MT, Sierra RJ. Use of concentrated bone marrow aspirate and platelet rich plasma during minimally invasive decompression of the femoral head in the treatment of osteonecrosis. *Croat Med J*. 2013;54(3):219-224. doi:10.3325/cmj.2013.54.219 **8.** Tanamas SK, Wluka AE, Pelletier JP, et al. Bone marrow lesions in people with knee osteoarthritis predict progression of disease and joint replacement: a longitudinal study. *Rheumatology*. 2010;49(12):2413-2419. doi:10.1093/rheumatology/keq286

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