



## A Review of Commercially Available Demineralized Bone Matrix Products and Their Clinical Evidence in the Treatment of Fractures

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### Abstract:

During the past decade there has been an increased use of demineralized bone matrix (DBM) products for the use of fractures. DBM is an allograft obtained from human cadaveric bone that has osteoinductive and osteoconductive properties. DBM has a good safety profile, is cost-effective, and avoids issues seen in autologous bone grafts such as donor-site pain, infection, increased blood loss, and longer procedure times. There is a wide variety of specific DBM products, each with their own biochemical, safety, and efficacy profiles. This raises a question of which specific DBM product is superior to the rest. This study reviews comparison studies of specific brand DBM products, including Allomatrix, DBX, Grafton, Orthoblast and Osteosponge in an attempt to propose the most efficacious DBM product that can be used for bone grafting of various orthopedic fractures. We conclude that there is no definitive gold-standard DBM product for general orthopedic use due to the scarcity of clinical research comparing specific brand products, limited sample sizes of available studies, and lack of standardization in the creation and use of DBM products. We hypothesize that Orthoblast, Grafton, and Allomatrix would be the appropriate DBM products to use in areas of bone loss due to fracture. Grafton and Allomatrix are two of the most clinically researched DBM products in the setting of fractures, and Orthoblast outperformed Grafton in a low-power comparative study. However, given the limited sample size of these products in the context of periarticular fractures, caution must be taken when drawing theo-



retical conclusions about which DBM product is best for these types of fractures.

### Biography:

Michael Downing is a third year medical student at NSU-KPCOM in Fort Lauderdale, FL. He completed a one year student fellowship (2019-2020) focusing on musculoskeletal medicine, sports medicine, and manipulative medicine. He hopes to pursue a future career in orthopedics.

### Publication of speakers:

1. Predicting survival in patients with advanced disease  
P Glare, C Sinclair, M Downing, P Stone... - European Journal of ..., 2008 - Elsevier
2. Granulocyte colony-stimulating factor stimulates recovery of granulocytes in patients receiving dose-intensive chemotherapy without bone marrow transplantation. J Saiki, P Duncan, L Souza, M Downing - Journal of Clinical ..., 1989 - ascopubs.org
3. Factors associated with health-related quality of life among outpatients with major depressive disorder: a STAR\* D report. D Warden, W McKinney, M Downing... - The Journal of clinical ..., 2006 - psycnet.apa.org

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