

Why are leading orthopedic surgeons using Shark Screw®?

- » **100% cortical allograft**
- » **Natural remodeling process**
 - Shark Screw® will be completely remodeled into the patient bone^{1, 2, 3, 4, 5, 6, 7, 8}
 - **Osteoconductive properties** promote the ingrowth of blood vessels and cell migration^{1, 5, 6, 7}
 - The remodeling process is nearly finished after 1 year³
 - **Primary bone healing**⁵
- » **No adverse effects**
 - No tissue reaction or inflammation^{5, 6}
 - Unlike bioabsorbable screws (e.g., Magnesium, Polylactide, Polyglycoside, or Polydioxanone), there are no issues such as fluid collection, gas collection, fistula, soft tissue damage, or osteolysis⁹.
- » **Natural bone bridge**
 - The Shark Screw® forms a **bone bridge** between the bone fragments^{1, 6}
 - Good outcome in **non-union cases**⁶
- » **Stability & biology**
 - Shark Screw® address both **stability and biology**⁶
- » **No hardware related problems**
 - No hardware removal necessary^{1, 3, 5, 6, 8} & no hardware irritation^{1, 8}
- » **Faster healing process**
 - **Faster return to work** and **fewer complications** (compared to metal screws/plates)⁶
- » **Compatibility**
 - Compatibility of the graft with CT and MRI⁵

PAPERS

¹ C. Krasny, C. Radde, R. Polke, D. Schallmayer, G. H. Borchert, and C. Albrecht, „A human, allogeneic cortical bone screw for distal interphalangeal joint (DIP) arthrodesis: a retrospective cohort study with at least 10 months follow-up“, Arch Orthop Trauma Surg, Bd. 143, Nr. 7, S. 4557–4564, 2023, doi: 10.1007/s00402-023-04785-2.

² K. Pastl, E. Pastl, D. Flöry, G. H. Borchert, und M. Chraim, „Arthrodesis and Defect Bridging of the Upper Ankle Joint with Allograft Bone Chips and Allograft Cortical Bone Screws (Shark Screw®) after Removal of the Salto-Prosthesis in a Multimorbidity Patient: A Case Report“, Life, Bd. 12, Nr. 7, S. 1028, Juli 2022, doi: 10.3390/life12071028.

³ B. Hanslik-Schnabel, D. Flöry, G. H. Borchert, und J. E. Schanda, „Clinical and Radiologic Outcome of First Metatarsophalangeal Joint Arthrodesis Using a Human Allogeneic Cortical Bone Screw“, Foot Ankle Orthop, Bd. 7, Nr. 3, S. 24730114221112944, Juli 2022, doi: 10.1177/24730114221112944.

⁴ P. Amann, K. Pastl, E. Neunteufel, und P. Bock, „Clinical and Radiologic Results of a Human Bone Graft Screw in Tarsometatarsal II/III Arthrodesis“, Foot Ankle Int., Bd. 43, Nr. 7, S. 913–922, Juli 2022, doi: 10.1177/10711007221081533.

⁵ I. Brcic u. a., „Incorporation of an Allogeneic Cortical Bone Graft Following Arthrodesis of the First Metatarsophalangeal Joint in a Patient with Hallux Rigidus“, Life (Basel, Switzerland), Bd. 11, Nr. 6, 2021, doi: 10.3390/life11060473.

⁶ V. Labmayr u. a., „Non-Union Treatment in the Foot, Ankle, and Lower Leg: A Multicenter Retrospective Study Comparing Conventional Treatment with the Human Allogeneic Cortical Bone Screw (Shark Screw®)“, 2024.

⁷ K. Pastl und W. Schimetta, „The application of an allogeneic bone screw for osteosynthesis in hand and foot surgery: a case series“, Archives of orthopaedic and trauma surgery, 2021, doi: 10.1007/s00402-021-03880-6.

⁸ S. Sailer u. a., „Treatment of scaphoid fractures and pseudarthroses with the human allogeneic cortical bone screw. A multicentric retrospective study“, J Orthop Traumatol, Bd. 24, Nr. 1, S. 6, Feb. 2023, doi: 10.1186/s10195-023-00686-7.

⁹ L. Pisecky, M. Luger, A. Klasan, T. Gotterbarm, M. C. Klotz, und R. Hochgatterer, „Bioabsorbable implants in forefoot surgery: a review of materials, possibilities and disadvantages“, EFORT Open Reviews, Bd. 6, Nr. 12, S. 1132–1139, 2021, doi: 10.1302/2058-5241.6.200157.