

Quick Reference Guide

BIOLOX[®]delta in THA

BIOLOX[®]delta is a highly biocompatible and hypoallergenic ceramic material. It was first introduced in 2003 and convinces with a strong clinical history.

BIOLOX[®]delta ceramic shows superior physico-chemical properties leading to excellent wettability and a very high wear resistance. It is safe in terms of metal ion release and pathogenic reactions to ceramic particles are highly unlikely.

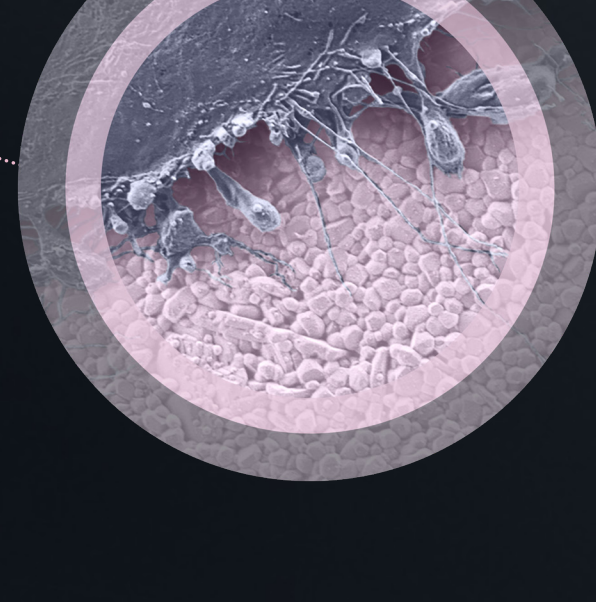
The biocompatibility of BIOLOX[®]delta has been proven in numerous scientific studies. The material is less prone to biofilm formation and its use may decrease the risk of revision due to infection.

Ceramics (CoC and CoP bearings) are associated with the best clinical outcomes and a high potential for cost-savings in THA.



BIOCOMPATIBILITY

There is no known clinical evidence indicating the occurrence of adverse reactions directly related to BIOLOX[®]delta material, demonstrating its excellent biocompatibility. BIOLOX[®]delta ceramic has proven its ability/capability to perform its desired function and generates the most appropriate tissue response, but without eliciting undesirable local or systemic effects.

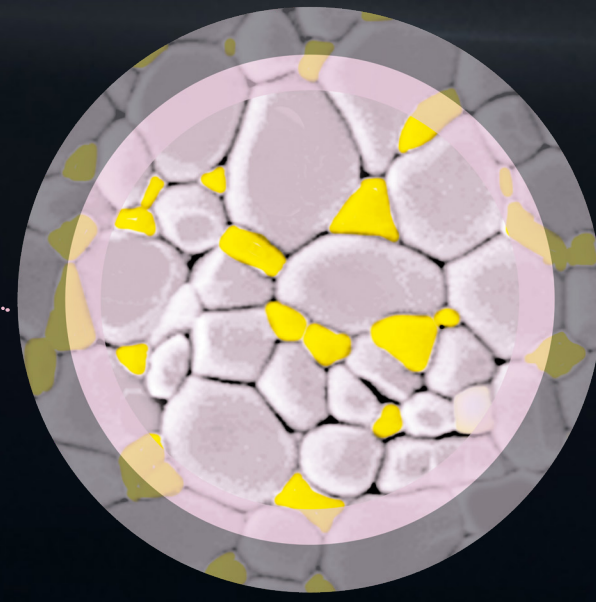


METAL HYPERSENSITIVITY

BIOLOX[®]delta ceramic is hypoallergenic and is safe in terms of metal ion release. Due to the nature and strength of the covalent and ionic bonds of its structure, BIOLOX[®]delta ceramic demonstrates high chemical stability in physiological environments.

MECHANICAL PERFORMANCE

BIOLOX[®]delta is an alumina matrix ceramic composite composed of alumina, zirconia, and certain additives. Due to the high hardness and toughness, BIOLOX[®]delta ceramic exhibits very high wear resistance and scratch resistance.

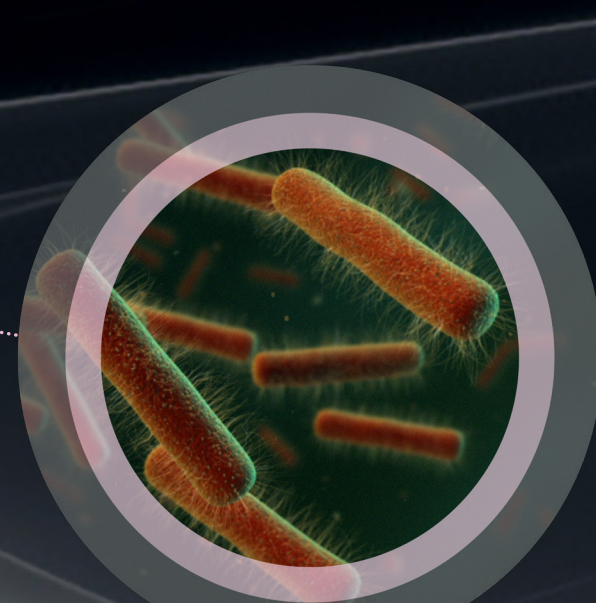


TRIBOLOGY

BIOLOX[®]delta bearings have the lowest wear of all bearing materials and the highest resistance to wear, particularly under non-optimal 3rd body wear conditions. Ceramics exhibit the lowest frictional torque and lowest wear in hard-on-hard and hard-on-soft bearings of all bearing materials. Extensive tests and retrieval studies have shown that the use of BIOLOX[®]delta ceramic heads mitigates the risk of fretting corrosion.

INFECTION

BIOLOX[®]delta ceramic has higher wettability, protein adsorption, and reduced incidence of bacterial adhesion compared to CoCr and other materials. The most recent registry data show that (mixed) ceramic bearings are associated with a lower risk of revision for PJI compared to metal bearings.



CLINICAL OUTCOMES

The use of ceramic bearings in hip arthroplasty has increased over the last years. By now, BIOLOX[®]delta is the preferred femoral head material in hip replacements. Most arthroplasty registries from all over the world confirm that the use of ceramic heads is associated with lower rates of revision compared to metal heads.

USE IN REVISIONS

Sleeved ceramic heads such as BIOLOX[®]OPTION offer the possibility of revising a femoral head implant while retaining a well-fixed femoral stem with minor damage on the taper surface.

The BIOLOX[®]OPTION system has proven to be safe and is reliable in revisions for ALTR or metallosis. Extensive tests and retrieval studies show that the use of an adapter sleeve has no significant effect on the corrosion of modular taper connections.



COST EFFECTIVENESS

Studies that have examined the cost effectiveness of different bearing-materials and analyzed the relation between initial cost and long-term benefit of the bearing have shown that ceramics are associated with a high potential for cost-savings in THA, therefore constitute an economical advantage.

