

Aesculap Information for patients

7 Layers To Protect You



B | BRAUN
SHARING EXPERTISE

Aesculap® AS Advanced Surface

Challenges

Dear patients,

the requirements for a knee replacement have changed in recent years. Active patients, but also an increasing risk of allergies increased the standards for artificial knee joints.

Implant Metal Allergies

13% of the population have a contact allergy to Cobalt, Nickel or Chromium.⁽¹⁾ This rate is relatively high. In the last few decades reactions to metals such as Cobalt, Nickel and Chromium which are used in joint implants have occurred more frequently than assumed in the past.

There are different types of allergic reactions including eczema, swelling or effusions. If you believe you may have a metal allergy, you should talk to your doctor about alternative implant options.

Wear in the Knee Joint

An artificial knee replacement is prone to severe stresses and strains on a daily basis. Nevertheless, the prosthesis should remain stable and function well for many years. Almost 50 % of necessary knee revisions are due to either aseptic loosening or wear of the meniscus component.⁽²⁾ Therefore, the aim is to minimize wear which can be achieved through a surface treatment of the implant components.

The Advanced Surface Technology is a seven-layer surface coating which is an effective barrier against allergenic metal ions and simultaneously reduces wear compared to conventional implants.

13 % have a nickel allergy.

Wear is the main reason for revision surgery in the long term.

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Technology

Metal Ion Barrier

The purpose of a modern knee implant is not only to provide mobility and stability but also to guarantee the biocompatibility of the materials used.

The seven-layer coating seals the metallic components, providing an effective metal ion barrier. The ceramic top coat is made of Zirconium nitride – a material of excellent biocompatibility.

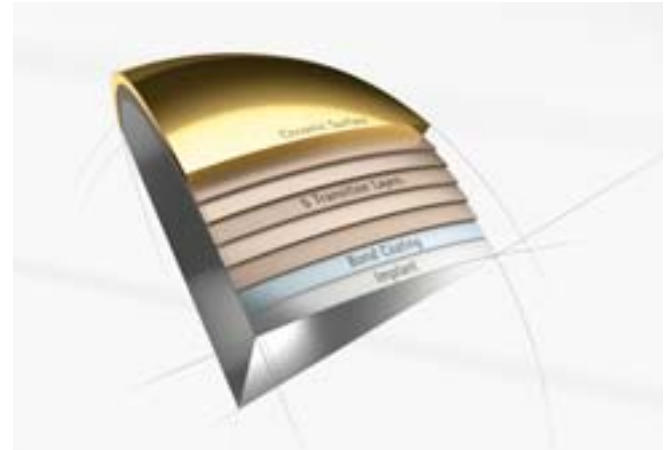
Low Wear Rates

The very hard ceramic surface reduces wear by more than half compared to conventional knee models.⁽³⁾

Extensive laboratory testing confirmed the low wear and strong scratch resistance of the ceramic coating.⁽³⁾

The good wettability of the AS coating has a good lubricating effect leading to better articulation between meniscus and femur.

Seven layers create an effective metal ion barrier.



The coating can be applied to all implant components. Therefore, Aesculap can offer a very broad product portfolio for the appropriate size and a comfortable treatment of our patients.

**Advantage of the AS Advanced
Surface Technology**

- Sophisticated seven-layer coating
- Reduction of allergic reactions
- Wear reduction
- Stability and improved scratch resistance



Aesculap® AS Advanced Surface

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Biocompatibility and longevity are two of the most important qualities in knee joint replacement. The new coating "AS Advanced Surface" with its excellent wear rate and high metal ion barrier offers both.



Patients can actively participate in life again.



Patients with a history of metal allergy are good candidates for Advanced Surface Technology.

Literature

- 1 Schäfer T, Böhler E, Ruhdorfer S, Weigl L, Wessner D, Filipiak B, Wichmann HE, Ring J. Epidemiology of contact allergy in adults. *Allergy*. 2001 Dec;56(12):1192-6.
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- 3 Reich J, Hovy L, Lindenmaier HL, Zeller R, Schwiesau J, Thomas P, Grupp TM. Präklinische Ergebnisse beschichteter Knieimplantate für Allergiker. *Orthopäde*. 2010 Mai;39(5):495-02.

Hospital stamp

