You might not see a big difference. But you will when you read some of over 100 publications written about the Alloclassic® Zweymüller® Hip Stem.
"The most important findings of our fifteen-year update are the low rate of stem revision, the low rate of radiographic signs of loosening, and the low rate of distal femoral osteolysis associated with this cementless tapered, rectangular titanium stem, which is still in use and has not been changed since 1986\textsuperscript{1}.”

The Original Since 1979

In 2009 Zimmer® Alloclassic® Zweymüller® Hip Stem celebrates 30 years of clinical history.

You might not see a big difference at first, but you will when you read some of the more than 100 published studies demonstrating the success of this implant and its excellent primary and secondary fixation.

Since 1979, over 500,000 total hip arthroplasties have utilized the original Alloclassic Zweymüller Hip Stem, making this uncemented prosthesis one of the most widely implanted in the world. The straightforward surgical technique and the broad product range are designed to aid surgeons in their goal of providing optimum care for their patients.

The Alloclassic Zweymüller Hip Stem is the only original product with this specific design and represents a milestone in total joint replacement.

We invite you celebrate with us and to learn more about this comprehensive THA solution with long-term clinical history.
1979
The First Implantation of the Alloclassic Zweymüller Hip Stem
- The Original Alloclassic Zweymüller SL Stem manufactured by Sulzer Medizinaltechnik is first implanted by Professor Zweymüller in Vienna on October 5, 1979.
- Philosophy: uncemented stem combined with a distal fixation.
- Design: double taper, rectangular cross section, proximal macrostructures, distal longitudinal grooves, proximal thinning, collar and a surface roughness of 1μm.

1983
Further Development
- Collar removed.
- Proximal region thickened to improve proximal press-fit.
- Product range increased to 7 sizes.

1985
A New Material
- Development of Protasul®-100, a Ti6Al7Nb forged alloy, with excellent osseointegration properties.
- Further increase of the product range to 8 standard sizes and an additional 6 sizes for special cases.
- Surface roughness increased from 1μm to 3–5μm, resulting in excellent bone on-growth.
- Diaphyseal/metaphyseal grooves were replaced by a thicker raised section, extending along the entire length of the stem to improve press-fit.
1986
Introduction of the Step Less (SL) Concept
- All sizes now form a continuous taper and are harmonized using optimized increments.
- Hyperbolic curvature is patented based on the stem’s excellent anatomical fit.
- Development of a new patented extraction hole.
- Further expansion of the product range to 14 standard sizes (01 to 12).

2003
Optimized Range of Motion
- Introduction of a slim neck design and short taper to increase range of motion and reduce the risk of impingement and dislocation.

2004
Extended Product Portfolio
- Introduction of an offset version, the Alloclassic Zweymüller SLO Stem.
- 4mm lateralization of the Alloclassic Zweymüller SL Hip Stem is achieved without compromising leg length.
“In our series, cumulative survival with any femoral revision as the end point was 0.99 (95% confidence interval, 0.97 to 1.00) at ten years. Thus, our femoral implant is highly reliable."  
Design Features

1. **Two offset versions** provide for a better reconstruction of patient anatomy without affecting leg length.

2. **Easily accessible** extraction hole.

3. **Trochanteric wing** results in a high degree of rotational stability.

4. **Double-tapered, rectangular** stem design shows excellent primary and rotational stability.

5. **Protasul-100** Titanium Alloy with grit-blasted surface for excellent osseointegration.
“Our study shows that a small change in the form of the femoral implant can result in statistically significant radiological changes in bone remodelling."
The Original Concept

Excellent primary and secondary fixation
Proven rotational stability

- Distal fixation
- Cortical press-fit due to the double-tapered shape
- Rectangular cross-section for rotational stability
- Trochanteric wing provides for rotational stability
- Rough blasted surface encourages excellent bone on-growth

Cross-section of the Zimmer Alloclassic Zweymüller Hip Stem indicates that the medullary canal is not completely filled, which helps to preserve endosteal blood supply to a large extent

Rough blasted surface provides for excellent osseointegration
“In summary, the implantation of the cementless Alloclassic SL stem and its osseointegration is possible in very old patients⁴.”

Broad Product Indications

Designed to cover a wide range of patient population and cases

Versatile Alloclassic Zweymüller SL Stem family can be used for:
- Primary cases
- Trauma cases
- Revision cases
- Young patients, 50 years-old and younger
- Elderly patients, 80 years-old and older

SL Stem (Step Less)
SL HAC Stem (Step Less HA Coated)
SLL Stem (Step Less Long)
SLO (Step Less Offset)
“The 18-year cumulative survivorship rate of [...] 95% for the stem was high, particularly since the patients were young⁵.”

Longterm Clinical Results

Up to 18 Years of Follow-Up for the Alloclassic Zweymüller Hip Stem

98.0%
Survival rate in 89 cases at 15 years (all reasons for revisions)
(Grübl, et al: 2006)¹

95%
Survival rate at 18 years in 47 young patients (all reasons for revisions)
(Reigstad, et al: 2008)⁵

100%
Survival rate in 78 hips at 13 years (endpoint aseptic loosening)

100%
Survival rate in 817 cases at 6.7 years (endpoint aseptic loosening)
(Grübl, et al: 2003)⁹

Preoperative X-ray of a right hip with posttraumatic femoral head, aseptic osteonecrosis in a 57 years old, healthy and active (Devane grade 4) female patient, 6 years after internal fixation of a Garden I femoral neck fracture.

Post-operative X-ray of an active 70-year-old female (Devane grade 3) at 12.8 years showing a stable Alloclassic Zweymüller Hip Stem in spite of a slight varus position due to a previous arthroplasty.
“With a survival rate of 100% for the Alloclassic SL stem and 98.4% for the CSF cup after 157 months (endpoint aseptic loosening), results using this system are among the very best, as a comparison of the recent literature shows.”

Long-term Survival Rate Demonstrated in more than 100 Publications

Patients 80 years and older

100% at 5.7 years (endpoint aseptic loosening)


Younger patients (52 years and younger)

100% at 6.3 years (endpoint aseptic loosening)

Vervest & Anderson: Hip Intern, 2005

Patients with dysplastic hips

100% at 9.3 years (endpoint aseptic loosening)


95% at 18 years (endpoint aseptic loosening)

Bibliography


2 Grübl, et al: Cementless Total Hip Arthroplasty with a Tapered, Rectangular Titanium Stem and a Threaded Cup. JBJS 84-A, Number 3, 2002

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6 Perka, et al: Developmental Hip Dysplasia Treated with Total Hip Arthroplasty with a Straight Stem and a Threaded Cup. JBJS Volume 86-A No 2, 2004


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