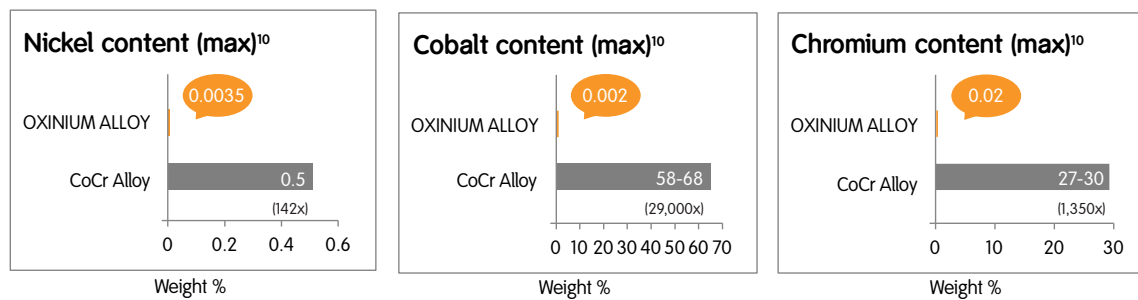


# Why OXINIUM<sup>◇</sup> for Total Knee Arthroplasty? Because you can't ignore the facts...

<b>Unique metal composition</b>	<b>Proven wear performance</b>	<b>Real life results</b>
<ul style="list-style-type: none"> <li>• Much lower nickel, cobalt and chromium levels compared to cobalt chrome implants</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in wear vs. cobalt chrome</li> </ul>	<ul style="list-style-type: none"> <li>• Retrievals have less damage vs. cobalt chrome</li> <li>• Excellent clinical outcomes and high survival rates</li> </ul>

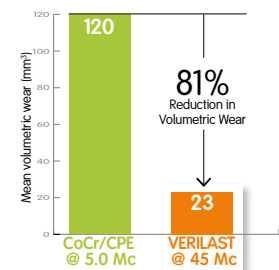
## Unique metal composition



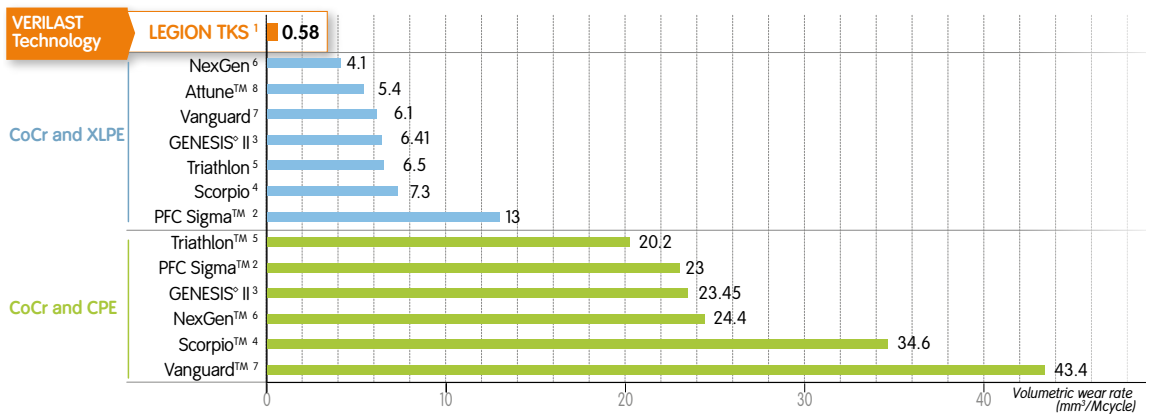
Nickel, cobalt, and chromium are commonly cited allergens for knee replacement patients.<sup>11</sup> Surgeons should be aware that all metal implants contain varying amounts of nickel, cobalt and chromium. When selecting the appropriate implant, surgeons should consider the composition of each implant before use. To help with this decision, Smith & Nephew offers proprietary OXINIUM alloy which has a unique metal composition for orthopedic implants. Compared to cobalt chrome, OXINIUM alloy has much lower nickel (<0.0035%), cobalt (<0.002%) and chromium (<0.02%) levels.<sup>10</sup>

## Proven wear performance

VERILAST<sup>®</sup> Technology (OXINIUM + XLPE) in the LEGION<sup>®</sup> Primary Knee System demonstrates superior wear performance in 45 million cycle testing.<sup>a</sup>



Comparison of the mean volumetric wear of CoCr/CPE after simulating 5 Mc of use and VERILAST after simulating 45 Mc respectively.<sup>1</sup>



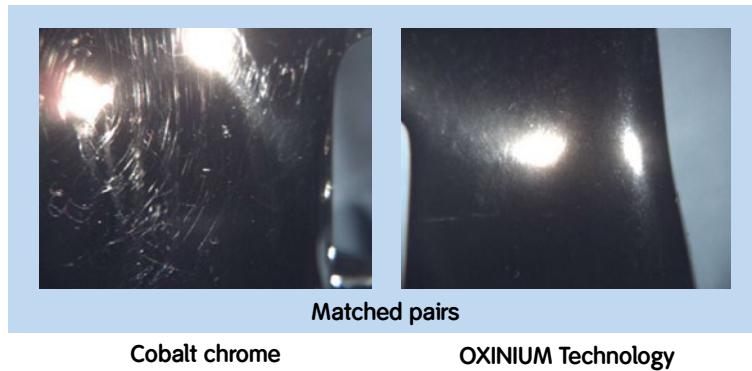
Mean volumetric wear rates of cobalt chrome (CoCr) against conventional polyethylene (CPE), CoCr against crosslinked polyethylene (XLPE) and OXINIUM against XLPE as published by the respective companies with their respective implants. Please see references for testing information.

VERILAST Technology is the only bearing technology with published results of 45 Million Cycles of knee in-vitro wear simulation testing with the LEGION Primary Knee System.



## Real life results

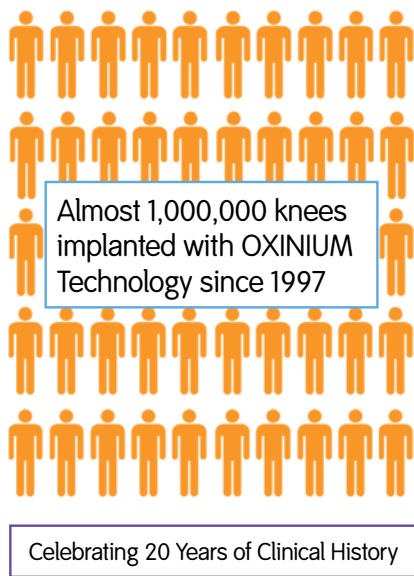
### Retrieval analysis<sup>9</sup>



OXINIUM<sup>®</sup> Technology demonstrates **lower damage scores** than cobalt chrome for both surfaces in analysis of retrieved component pairs matched for time and patient.

- Femurs demonstrated **83% and inserts 31% less damage** at approximately 1.5 years

All **roughness metrics were lower** for OXINIUM Technology than those of cobalt chrome.



### Review of long-term survival (2017)

Clinical Results of Oxidized Zirconium Femoral Component in TKA: A Review of Long-Term Survival.<sup>12</sup>

34 published studies



**Survival rate**  
100–98.7% at 5–7 years to  
97.8% at 10 years

**Longest follow-up**  
12.6 years with low revision rate

**Knee Society (KS) knee score**  
↑↑↑ in all series

**Mean postop KS knee score**  
89.8 (range, 84 to 95)

**These facts suggest that implants made with OXINIUM Technology offer a better chance than cobalt chrome of meeting patients' long-term needs.**

### References

- (a) The LEGION<sup>®</sup> Primary CR Knee System completed 45 million cycles of in vitro simulated wear testing, which is an estimate of 30 years of activity. Other LEGION VERILAST Primary Knee Systems underwent similar lab testing comparable to industry standards. The results of in vitro wear simulation testing have not been proven to quantitatively predict clinical wear performance. Also, a reduction in total polyethylene wear volume or wear rate alone may not result in improved clinical outcomes as wear particle size and morphology are also critical factors in the evaluation of the potential for wear mediated osteolysis and associated aseptic implant loosening. Particle size and morphology were not evaluated as part of the testing.
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12. Clinical Results of Oxidized Zirconium Femoral Component in TKA. A Review of Long-Term Survival Review Article Roberto Civinini, MD & Fabrizio Matassi, MD & Christian Carulli, MD & Luigi Sirleo, MD & Andrea Cozzi Lepri, MD & Massimo Innocenti, MD HSS Journal (2017) 13:32–34

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