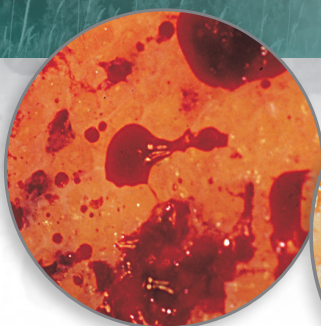


# Optimize Your Cement Technique

Aseptic loosening is a predominant failure mode in cemented primary knee arthroplasty.<sup>1, 2</sup>

Tibia After Resection



After Pulsatile Saline Lavage



After CarboJet®



## CarboJet XF®

### CO<sub>2</sub> Bone Preparation System

1. Schroer, K.R. Berend, Lombardi, Barnes, Bolognesi, M.E. Berend, Ritter, Nunley, (2013) Why Are Total Knees Failing Today? Etiology of Total Knee Revision in 2010 and 2011. J Arthroplasty. 28 Suppl:116-9.
2. Sharkey et al (2014) Why Are Total Knee Arthroplasties Failing Today—Has Anything Changed After 10 Years? J Arthroplasty. 29: 1774-8.

**Now available as a single use, fully disposable system.**

**All instrument tray reprocessing costs eliminated!**

Are you looking for a way to more effectively remove lipids/marrow elements, blood, and saline from the cement interface? **CarboJet's** CO<sub>2</sub> gas jet quickly and thoroughly removes fluid debris from the bone bed resulting in increased cement penetration and increased cement bond strength. Applicable in any cemented arthroplasty procedure. Give it a try and see what a really clean bone bed is all about!

#### An essential tool for tourniquetless TKA

Meneghini (2018) Tourniquetless TKA...Decreases Pain & Opioid Consumption in Women. J Arthroplasty.  
Jones (2011) Total knee arthroplasty without the use of a tourniquet. Seminars in Arthroplasty.

#### Increase Cement Penetration

Meneghini (2019) The Effect of Tourniquet Use and Sterile CO<sub>2</sub> Bone Preparation on Cement Penetration in Primary TKA. J Arthroplasty.

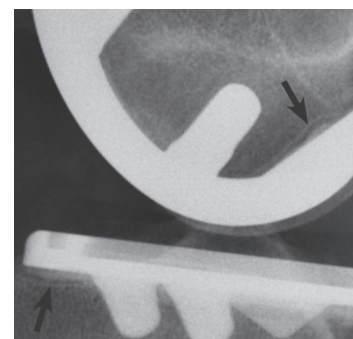
Goldstein (2007) Improvement of cement mantle thickness with pressurized CO<sub>2</sub>. ISTA.

#### Increase Bone-Cement Interface Strength

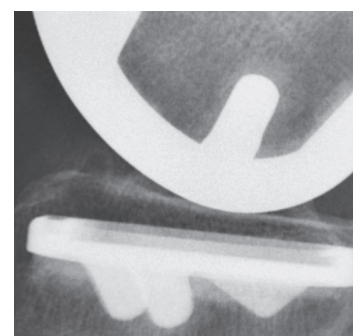
Stanley (2010) Bone-cement interface strength using two preparation techniques. Hand Surg.

#### Reduce Opportunity for Micro-Emboli

Lassiter (2010) Intraoperative embolic events with use of pulsatile saline versus CO<sub>2</sub> lavage. ORS.



Bone bed prepared with pulsatile saline lavage. Arrows indicate radiolucent lines.



Bone bed prepared with CarboJet. No radiolucent lines visible.



**KINAMED®**  
INCORPORATED

Quality Care. Clinically Proven.

For more information or to schedule an evaluation:  
800-827-5775 | 805-384-2748 | [www.kinamed.com](http://www.kinamed.com)



See **CarboJet** in action