Gain total control of distal locking

smith&nephew

TRIGEN◇ SURESHOT◇

Distal Targeting System

Supporting healthcare professionals

Reduces ionizing radiation

Increases accuracy & control

Saves time

TRIGEN® SURESHOT® Distal Targeting System

Radiation-free technology for distal locking in TRIGEN Intramedullary (IM) Nails that projects a virtual image of the distal end of nail onto the screen and provides real time feedback:

- Probe is inserted into the nail
- Electromagnetic field locates the position of the drill bit relative to the locking holes

TRIGEN® SURESHOT® Distal Targeting System:

Reduces ionizing radiation

Potentially eliminates elevated cancer risk by 33%[9-11]

Increases accuracy and control

It has been reported to have fewer complications and high reliability. [5]

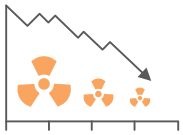
Saves time

48% reduction in distal locking time[5]

Challenge

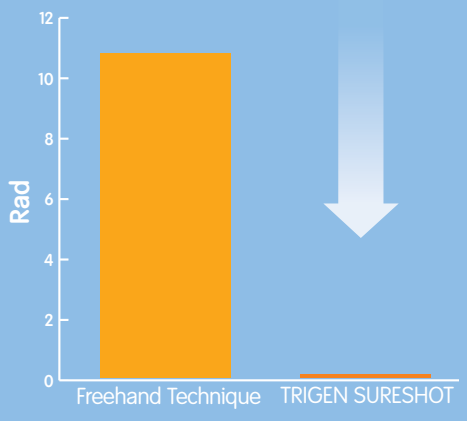
Radiation exposure

Current methods expose surgeons, OR staff, and patients to unnecessary and potentially hazardous radiation.[1,2]



The TRIGEN® SURESHOT® Solution:

Reduces ionizing radiation



Reduction of **radiation exposure** from 10.8 to 0 Rad during distal locking of IM Nails[7]

Cumulative Radiation Exposure over 10 years in Rads (assumption of 20 cases per annum)

One rad of exposure increases risk of cancer by 3%[3].

United States Nuclear Regulatory Commission (USNRC) recommends an occupational radiation exposure maximum of 200 mSv/10 yrs. SURESHOT is designed to prevent up to 54% of that total exposure limit. (10.8 rad = 108mSv)[9-11]

TRIGEN SURESHOT

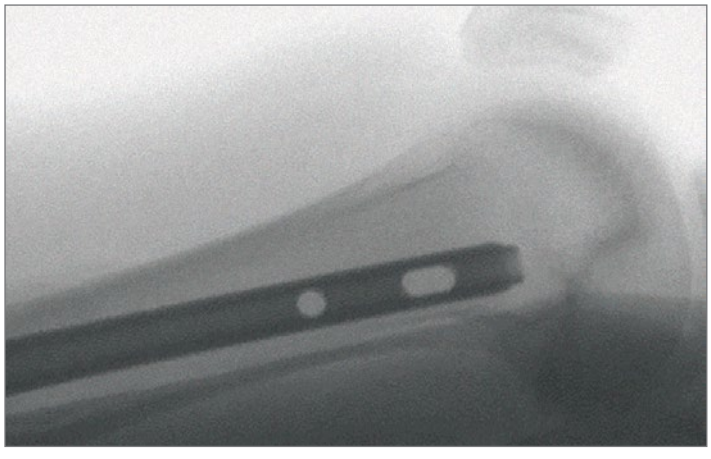
because your health matters.

10.8rad = **33%** ↑

over 10 years — cancer risk

Why TRIGEN SURESHOT?

The TRIGEN SURESHOT System is designed to reduce exposure levels for the OR team and patients by replicating the perfect circle technique without radiation.



Perfect circles with x-ray

Perfect circles with TRIGEN SURESHOT Distal Targeting System

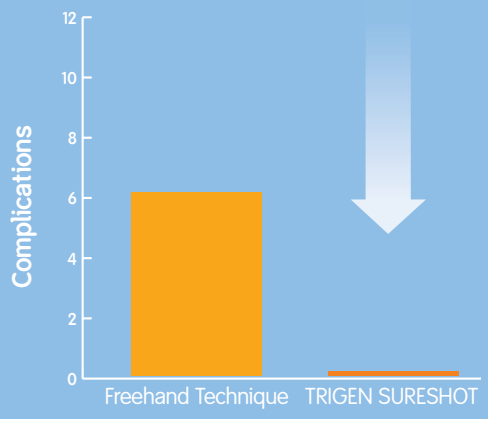
Challenge

Inaccurate targeting

Current distal targeting methods are imprecise, difficult and inconvenient.[4]

The TRIGEN® SURESHOT® Solution:

Increases accuracy and control



Distal locking using the TRIGEN SURESHOT System led to **fewer complications** and showed a **high reliability**.[5]

Distal locking complications – Freehand technique vs TRIGEN SURESHOT[5]

Outcomes using freehand technique are dependent on expertise of surgical staff and x-ray technicians.[6]

Current methods can result in extra drill holes and potential damage to implants.[6]

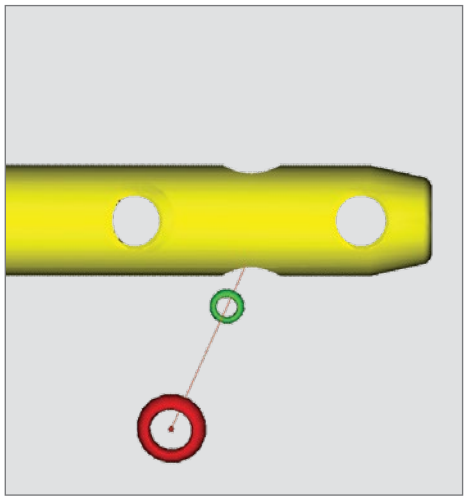
Repositioning of the leg for fluoroscopic distal locking can compromise the fracture reduction.[5]

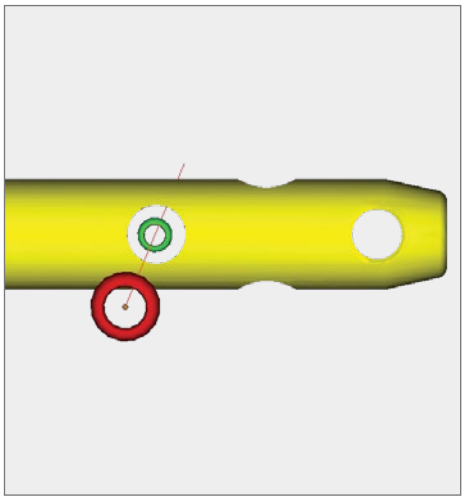
TRIGEN SURESHOT

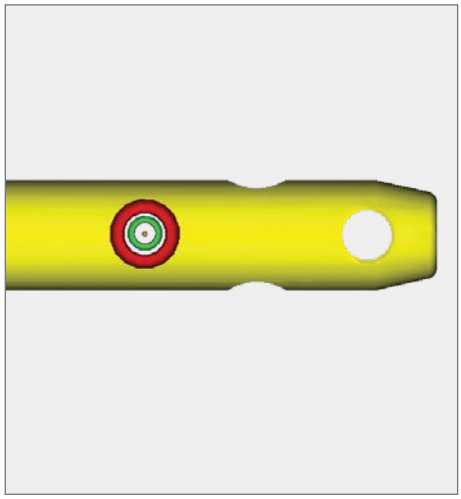
puts you in control.

Why TRIGEN SURESHOT?

The TRIGEN SURESHOT System allows the surgeon to be in complete control of distal locking without the need for fluoroscopy. The virtual imaging is designed to reduce the number of misses and potential complications.







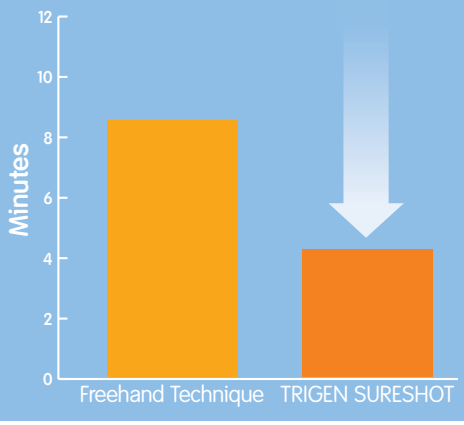
Challenge

Time consuming

Current distal targeting methods are time consuming – distal locking time can range from 4 to 60 minutes.[4,6,7]

The TRIGEN® SURESHOT® Solution:

Saves time



Statistically significant **48% reduction** of **distal locking time** ($p<0.001$)[5]

Distal drill time in minutes - Freehand technique vs. TRIGEN SURESHOT

Distal locking can, at times, require over 60 shots of radiation.[8]

Freehand techniques can require prolonged anaesthesia time for patients and increased staff time in the OR.[6]

TRIGEN SURESHOT

because your time is valuable.

Why TRIGEN SURESHOT?

By reducing time to complete distal locking, TRIGEN SURESHOT is designed to reduce procedure times which may lead to decrease of the anaesthesia duration for patients.

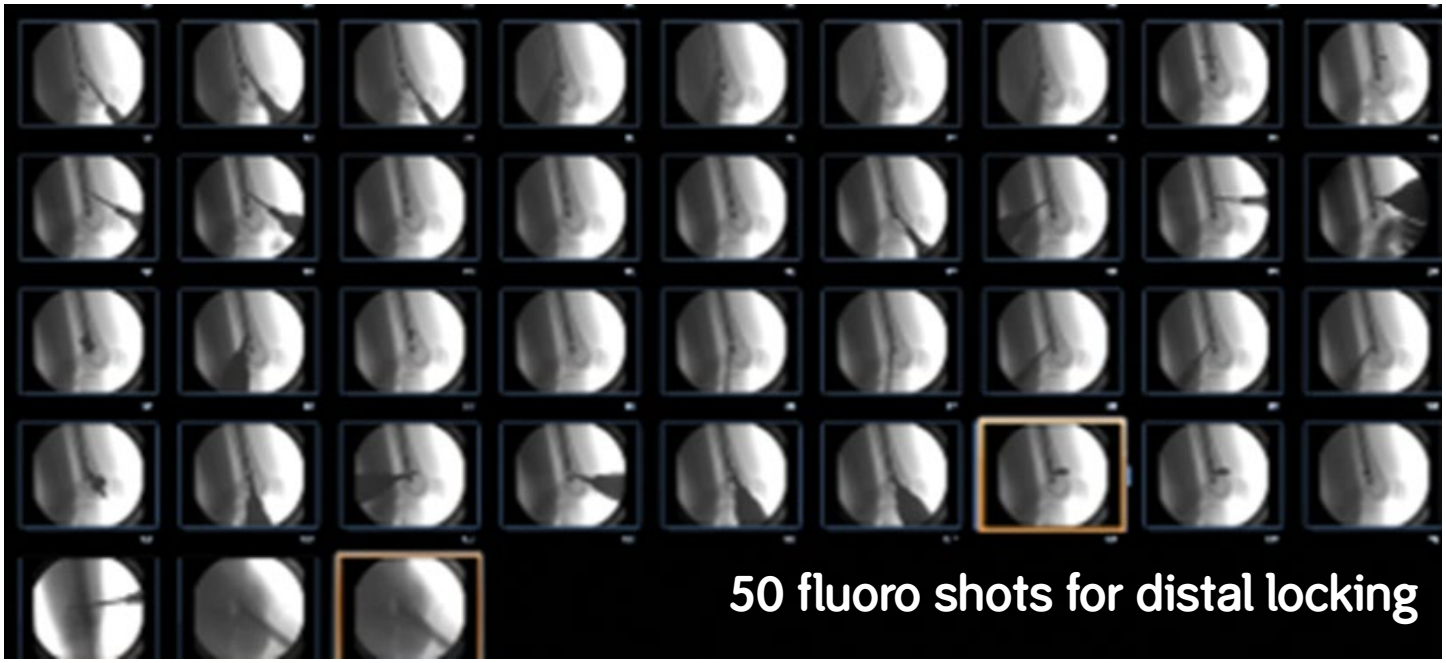


Image courtesy of Dr. Ricci

Femoral

TRIGEN◇ META-TAN◇

Trochanteric Antegrade Nail

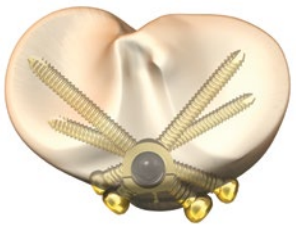
- **Integrated compression screws** provide active compression
- **Standard** and **Recon** Locking options
- Optional **set screw** to create **fixed angle construct**
- **Length dependent AP bows** to accommodate varying patient anatomy
- **Threaded multiplanar distal holes**

Tibial

TRIGEN META-NAIL◇

Tibial Nail

- **Threaded multiplanar hole configuration** is designed to offer stable, fixed angle construct
- **Proximal 10° Herzog bend** is designed to minimize fracture displacement.
- Up to **7 mm compression** possible
- **Semi-extended** instruments avoid malreduction / malalignment

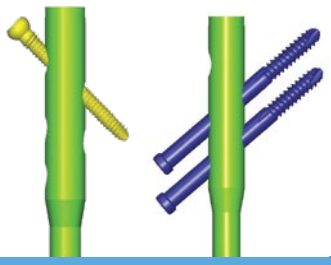


TRIGEN◇ SURESHOT◇ Distal Targeting System works with all of these TRIGEN IM Nails

TRIGEN◇ FAN

Femoral Antegrade Nail

- **Standard** and **Recon** Locking options
- **Hybrid AP bow** 1.5 m proximal, 2.5 m distal
- **Piriformis fossa** entry point
- 12° Anteversion

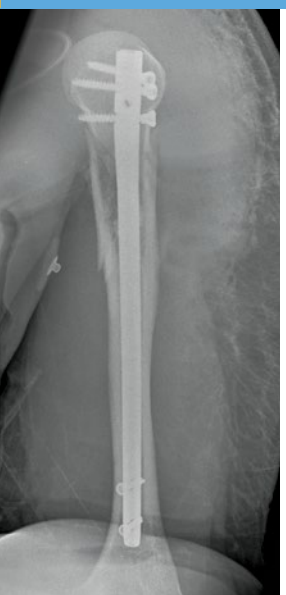


TRIGEN META-NAIL◇

Retrograde Femoral Nail

- **Threaded multiplanar distal hole configuration** is designed to provide angular stability
- Polyethylene bushing is designed to increase fixation
- **STABLE-LOK Nut** optimizes purchase
  - **Lateral compression** for intracondylar fracture patterns

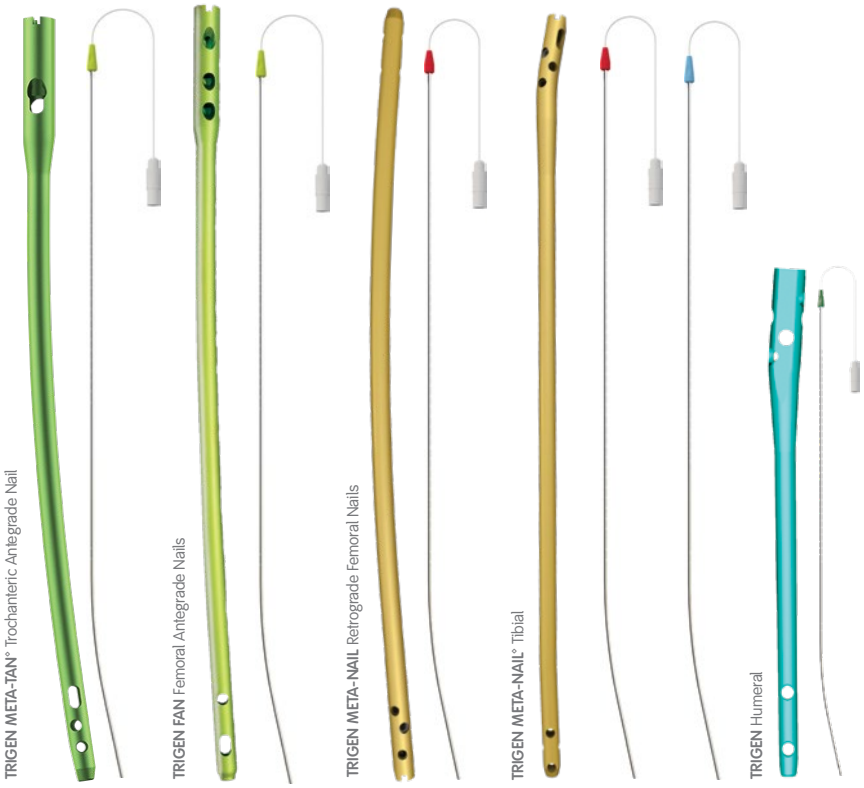
Humeral



TRIGEN HUMERAL NAIL

- **Straight and bent nail** options available
- **Multiplanar proximal screws**
- **Threaded proximal locking holes** with polyethylene bushings designed to prevent screw back-out
- **Trapezoidal nail profile** designed to provide enhanced rotational stability

TRIGEN° IM Nail System



TRIGEN META-TAN° Trochanteric Antegrade Nail

TRIGEN FAN Femoral Antegrade Nails

TRIGEN META-NAIL Retrograde Femoral Nails

TRIGEN META-NAIL° Tibial

TRIGEN Humeral

TRIGEN SURESHOT° Distal Targeting System

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References

1. Whatling GM, Nokes LD. Literature review of current techniques for the insertion of distal screws into intramedullary locking nails. Injury. 2006;37(2):109-119. **2.** Center for Devices and Radiological Health, US Food and Drug Administration. Initiative to reduce unnecessary radiation exposure from medical imaging. http://www.fda.gov/Radiation-EmittingProducts/RadiationSafety/RadiationDoseReduction/ucm199994.htm. Published February 2010. Accessed February 11, 2010. **3.** Ashmore JP, Krewski D, Zielinski JM, Jiang H, Semenciw R, Band PR. First analysis of mortality and occupational radiation exposure based on the National Dose Registry of Canada. Am J Epidemiol 148(6): 564, 1998. **4.** Chan Daniel S., Burris Richard B., Erdogan Murat., Sagi H Claude. The Insertion of Intramedullary Nail Locking Screws Without Fluoroscopy: A Faster and Safer Technique. Journal of Orthopaedic Trauma. 2013;27:363-366. **5.** Michael Hoffmann, MD, MBA, Malte Schro¨der, MD, Wolfgang Lehmann, MD, PhD, Michael Kammal, MD, Johannes Maria Rueger, MD, PhD, and Andreas Herrman Ruecker, MD. Next generation distal locking for intramedullary nails using an electromagnetic X-ray-radiation-free real-time navigation system. J Trauma Acute Care Surg. 2012; 73: 243-248. **6.** Internal data on file: 7118-1614 REVB 09/11. **7.** Arlettaz Y, et al. Targeting device for intramedullary nails: A new high-stable mechanical guide. Injury vol. 39, issue 2, February 2008: 170-175. **8.** Tyropoulos S, 4 Garnavos C. A new distal targeting device for closed interlocking nailing. Injury vol. 32, issue 9, November 2001: 732-735. **9.** Internal data on file: 7118-2095 REV0 01/12. **10.** http://news.mit.edu/2011/explained-radioactivity-0328. **11.** https://www.nrc.gov/about-nrc/radiation/around-us/doses-daily-lives.html.