Titanium Trochanteric Fixation Nail System. Biomechanical Features.

Greater resistance to cut-out

Reduction in the amount of bone removed

Longer fatigue life
Indications
Stable and unstable fractures of the proximal femur including:

– Pertrochanteric fractures
– Intertrochanteric fractures
– Basal neck fractures
– Combinations of the above

Long nails are additionally indicated for:

– Subtrochanteric fractures
– Pertrochanteric fractures associated with shaft fractures
– Pathologic fractures of osteoporotic bone in both trochanteric and diaphyseal regions
– Long subtrochanteric fractures
– Proximal or distal nonunions, malunions, and revisions
Greater resistance to cut-out
The Titanium Trochanteric Fixation Nail (TFN) System provides increased resistance to cut-out.¹

The innovative helical blade design was proven to provide "superior resistance to migration and subsequent cut-out failure."²

Fixation life curves: number of load cycles to cut-out at varying loads.

When tested at a load of 1.2 kN, the lag screw cut out before 1,000 cycles whereas the helical blade cut out after 10,000 cycles.

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² Ibid.
³ Ibid.
 Improved resistance to varus collapse

Varus rotation of femoral head at 1000 N\(^4\)
(Unstable pertrochanteric fracture using simulated cancellous bone)

Improved resistance to femoral head rotation

Rotation of femoral head around implant axis at 1000 N\(^5\)
(Unstable pertrochanteric fracture using simulated cancellous bone)
The 11.0 mm helical blade reduces amount of bone removed

By using the 11.0 mm helical blade, significantly less bone is removed than with a predrilled lag screw.

The helical blade compacts trabecular bone around the blade as it advances into the femoral head.

Note: The amount of bone removed by an implant is directly related to its cross-sectional area. The helical blade's cross-sectional area is only 38% that of a standard lag screw.

Longer fatigue life in mechanical testing

Example of bone removal with standard lag screw

Example of bone removal with helical blade

6. Test conducted at Legacy Research and Technology Center, Portland, OR.
7. Test conducted at Synthes Mechanical Testing Lab, West Chester, PA.
Titanium Trochanteric Fixation Nail System

Sets
105.641 Titanium Trochanteric Fixation Nail Insertion Set
105.642 Titanium Trochanteric Fixation Nail Locking Set, with locking bolts
105.643 Titanium Trochanteric Fixation Nail Locking Set, with locking screws

Also Available
Titanium Cannulated Trochanteric Fixation Nails, sterile
– 10 mm, 11 mm, 12 mm, and 14 mm* diameters
– 125°, 130°, and 135° femoral neck angles
456.314S– 170 mm length
456.323S
456.324S– 235 mm length
456.329S,
456.510S–
456.512S
456.330S– 300 mm–460 mm lengths
456.647S (20 mm increments), right and left

Titanium Cannulated Helical Blades
– 75 mm–130 mm, 5 mm increments
456.300S 75 mm (sterile only)
456.301– 80 mm–120 mm
456.309
456.310S 125 mm (sterile only)
456.650S 130 mm (sterile only)

Titanium End Caps for Trochanteric Fixation Nails◊
456.311– 0 mm, 5 mm, and 10 mm extensions
456.313
458.926– 5.0 mm Titanium Locking Screws◊
458.999
459.26– 4.9 mm Titanium Locking Bolts◊
459.100

◊ Implants available nonsterile or sterile-packed. Add “S” to catalog number to order sterile product.
* 14 mm diameter nails only available in 130° femoral neck angle.