Take aim at lesser toe challenges

1. MTP Joint Repair
2. PIP Fusion
3. Osteotomy Guide

Smith & Nephew
HAT-TRICK
Lesser Toe Repair System
Are your lesser toe patients less than satisfied?

15% – 33% of Weil osteotomies result in floating toes.

10% – 46% of lesser toe patients are dissatisfied post-surgery.
K-wire fixations for Hammertoes often result in:

- Increased swelling, pain
- Pin-tract infection
- Delayed union
- Motion at arthrodesis site
- Painful removal

Flexor tendon transfers and Weil osteotomies often lead to:

- Floating toes
- Loss of ROM
- Stiffness
- Residual pain

Metal “all internal” PIP Fusion implants often:

- May be difficult to remove
- Don’t have controlled compression
- Require special handling

Our three-part solution:

1. HAT-TRICK® MTP Joint Repair System
2. HAT-TRICK PIP Fusion System
3. HAT-TRICK Osteotomy Guide
Challenge: Metatarsophalangeal instability is commonly present with lesser toe deformities. Current standard of treatments often lead to complications like floating toes, loss of ROM, stiffness and residual pain.\textsuperscript{1,2}
Solution: The HAT-TRICK® MTP Joint Repair System provides a complete repair of the lesser MTP joint that is less invasive and more anatomic than standard of care techniques.

- Less invasive
  - No required metatarsal osteotomy
  - No screw fixation required
  - No release of the plantar plate from the metatarsus

- Controlled
  - Allows for controlled tensioning of both plantar plate and collateral ligaments

- More anatomic
  - Anatomic reattachment of collateral ligaments
  - Anatomic distal reattachment of plantar plate
  - Maintains the biomechanical axis, which can be lost when performing a metatarsal osteotomy

Bilateral

Unilateral
HAT-TRICK® MTP Joint Repair System

Stability, stiffness and center of rotation mimic normal physiological anatomy

Mimics normal physiological anatomy*
Repair of fully disrupted plantar plate and collaterals

% Change from intact

-40% -20% 0% 20% 40% 60%

Weil Osteotomy Flexor Tendon Transfer HAT-TRICK™ Bilateral Joint Repair

Laxity
Stiffness

No change

* Based on cadaver-validated computer model

Maintains the physiological center of rotation*
Center of Rotation Plots; Plantar Plate and Collaterals Disrupted

Dorsal - Plantar Displacement

Proximal - Distal Displacement

* Based on cadaver-validated computer model
Specialized instruments

**Offset Drill Guide**
Short and long offset drill guides allow for drilling of two bone tunnels that do not intersect.

**DART Suture Passer**
DART (Direct Anterior Repair Technique) Suture Passer allows for access to plantar plate without an osteotomy.

**Suture Tensioner and PEEK Interference Wires**
Allows for controlled tensioning of the ligament repair.
Challenge: Standard K-wire treatment is associated with several complications:

- Increased swelling and pain
- Pin-tract infection
- Delayed union
- Delayed healing of the arthrodesis site due to lack of compression
- Motion at arthrodesis site with rotational concerns
- Pain with removal of the K-wire

Solution: All inside fusion of the PIP joint has fewer complications and is less invasive than other standard of care treatments, like K-wires or cannulated screws.
A revisable, all PEEK implant.

- Made of PEEK material and requires no special handling such as refrigeration or heating.
- Radiolucent, allowing the surgeon to see the fusion site on X-Ray.
- Allows for straightforward removal with 0.5mm bone resection (no window required).
- Controlled compression that allows the surgeon to dial in the compression needed.
- Multiple diameters with both 0° and 10° angulation options.
**Challenge:** Weil Osteotomy procedures move the center of rotation of the metatarsal head plantar off the biomechanical axis.

**Solution:** The HAT-TRICK Osteotomy Guide allows for a controlled, precise and reproducible approach that maintains the biomechanical axis.
Instrumentation designed for controlled, precise and reproducible results

**Controlled:**
K-wire provision fixation holds guide in place

**Precise:**
Multiple spacer options allow for precise length of shortening

**Reproducible:**
Tab in the MTP joint space allows the surgeon to reproducibly line up the osteotomy
References


5 Internal testing