

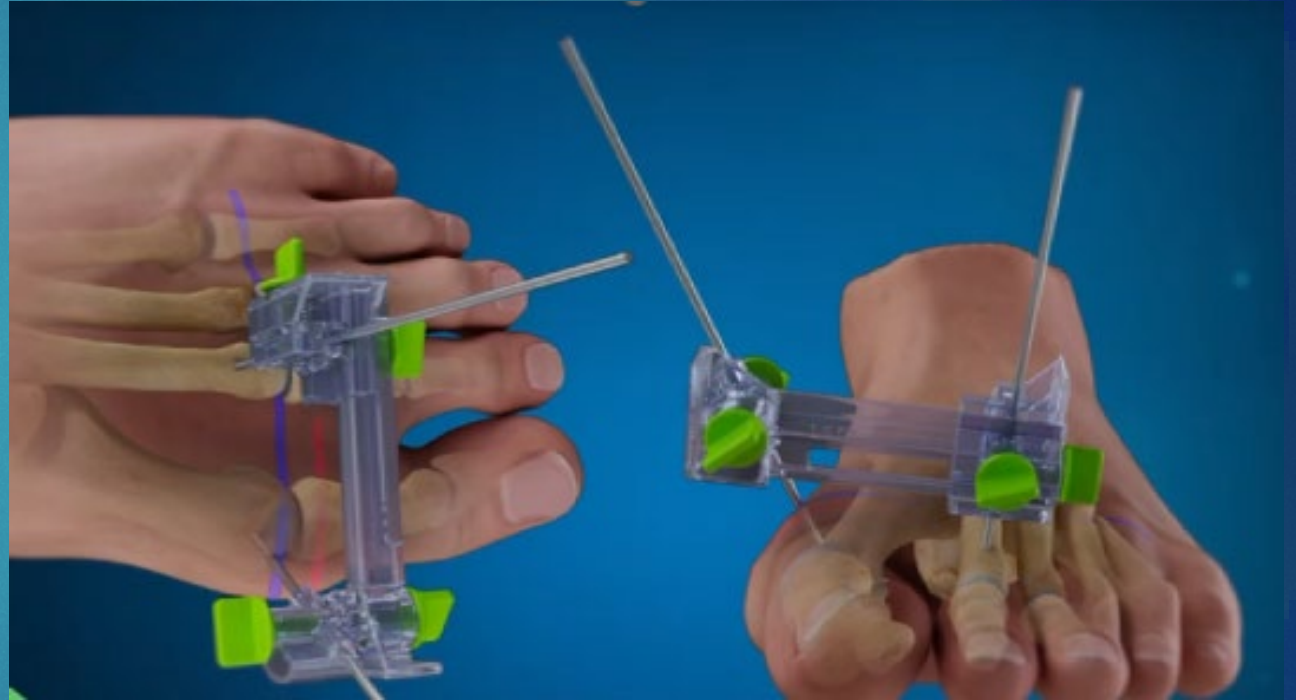


Innovative Designs
Simplified Surgical Techniques

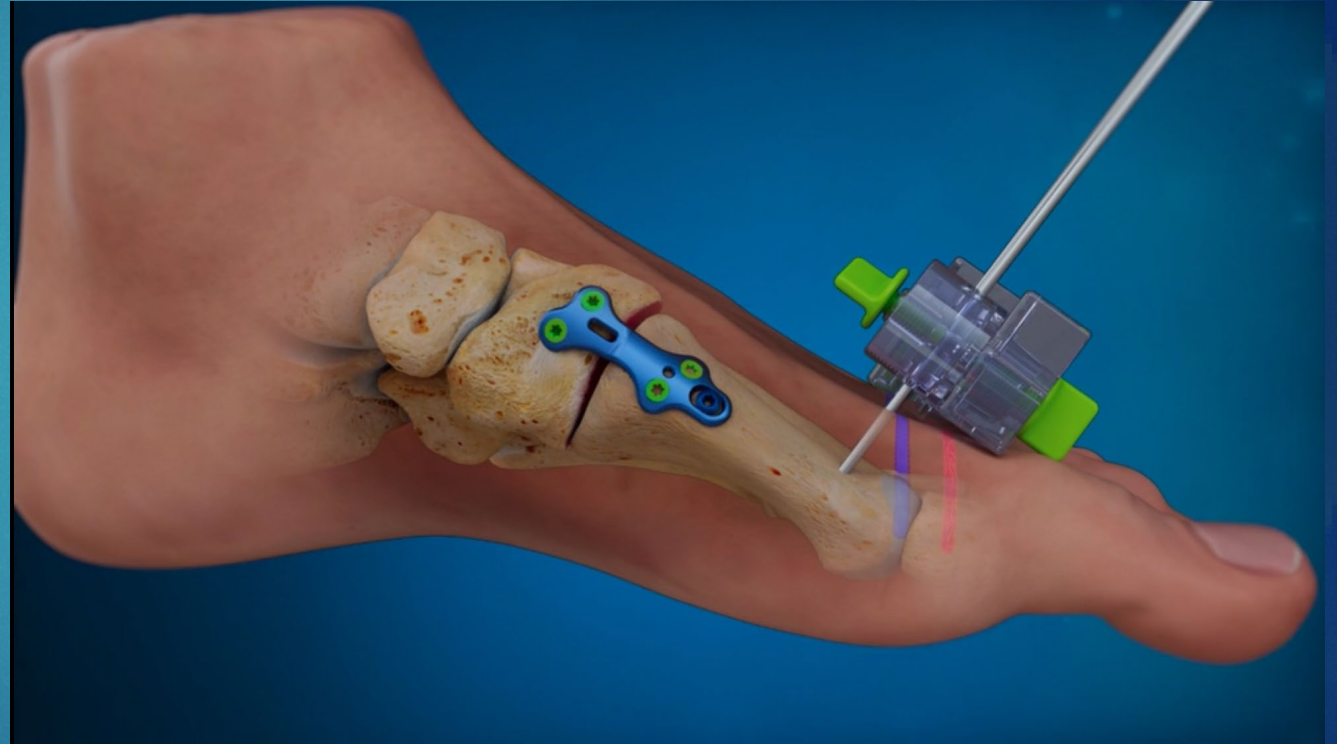
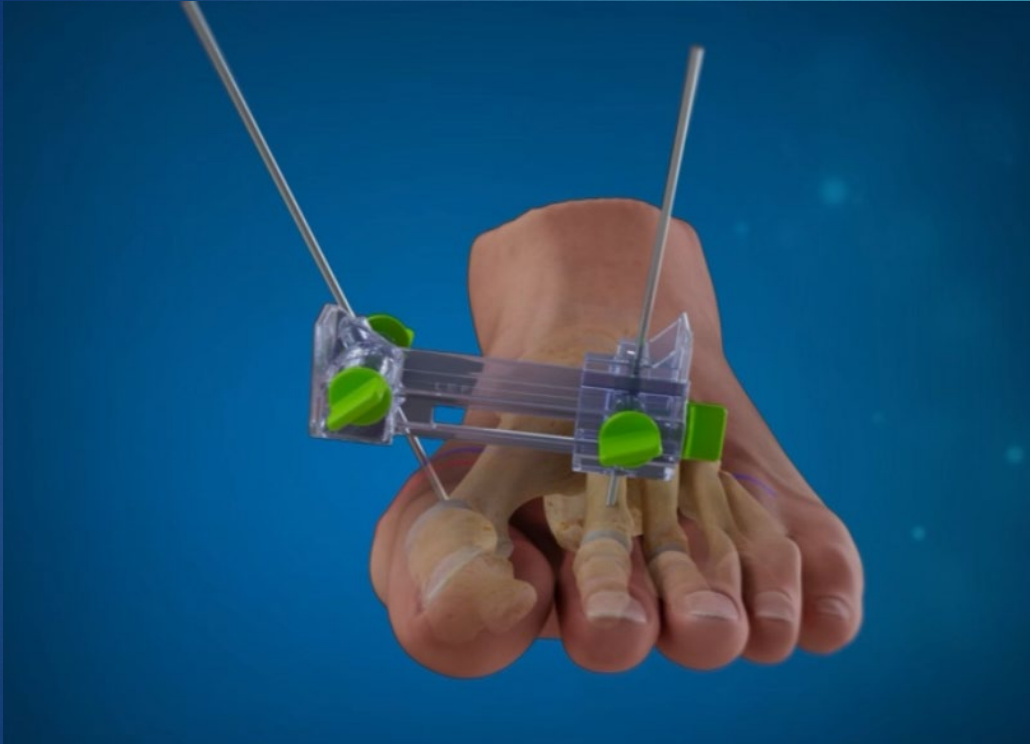
THE RELJA CLAMP

The RELJA Clamp

- ▶ Features for Lapidus Procedure:
 - ▶ Radiolucent
 - ▶ No incisions
 - ▶ Quick and easy to apply
 - ▶ Correction in all three planes
 - ▶ Allows compression across the fusion site
 - ▶ Out of the way for hardware placement
 - ▶ Sterile packaged



The RELJA Clamp

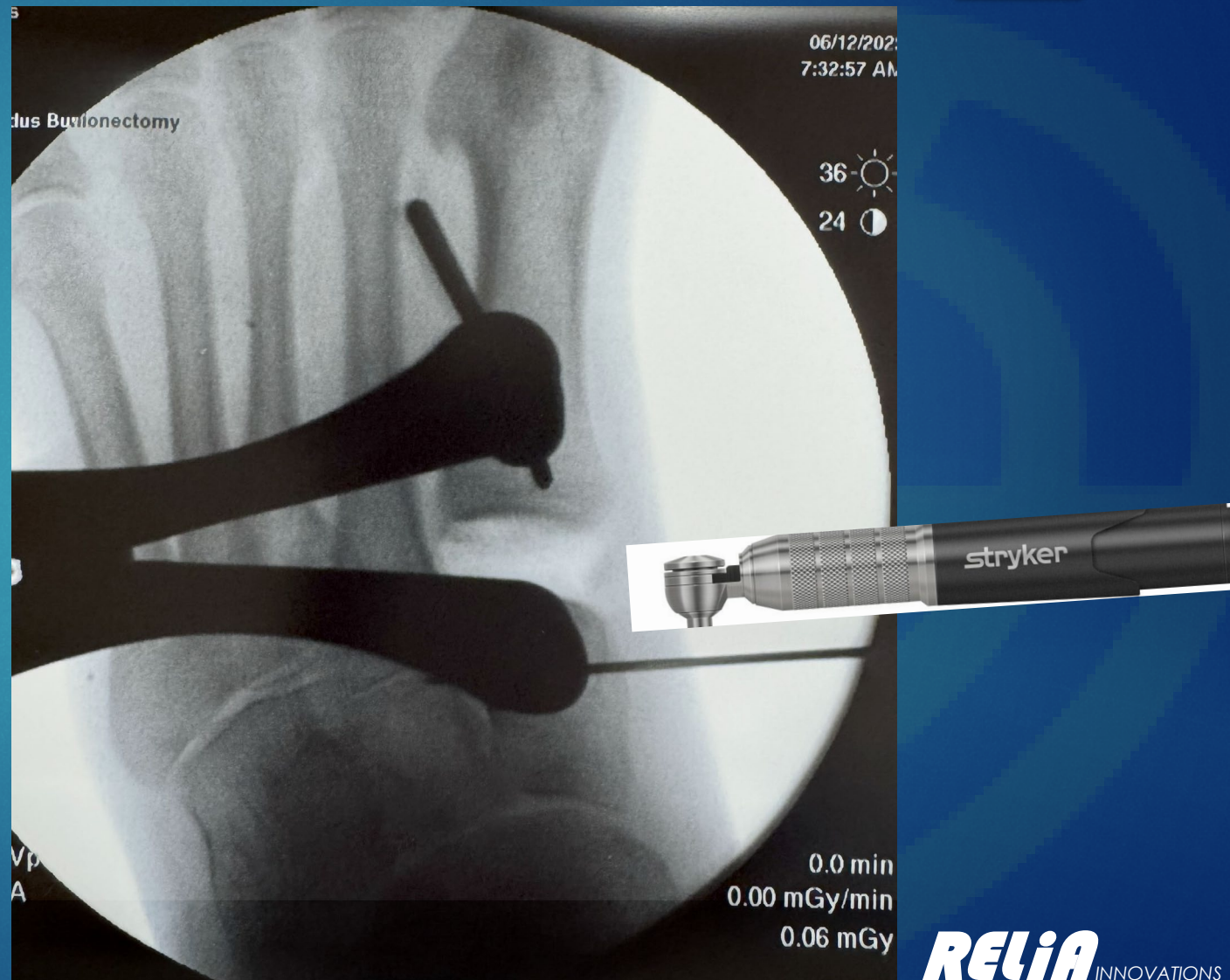


The RELJA Clamp Technique

- ▶ Perform a mini-incision 1st MTP lateral release.
- ▶ Release the soft tissues of the 1st TMT prior to applying the clamp.
- ▶ Utilize an osteotomy to free the plantar ligament of the 1st TMT

The RELJA Clamp Technique

- ▶ Place a K wire in the central area of the medial cuneiform (perpendicular to the 2nd metatarsal, yellow below).
- ▶ Remove the obliquity of the Cuneiform utilizing a sagittal saw (saw will stay parallel to the K wire)



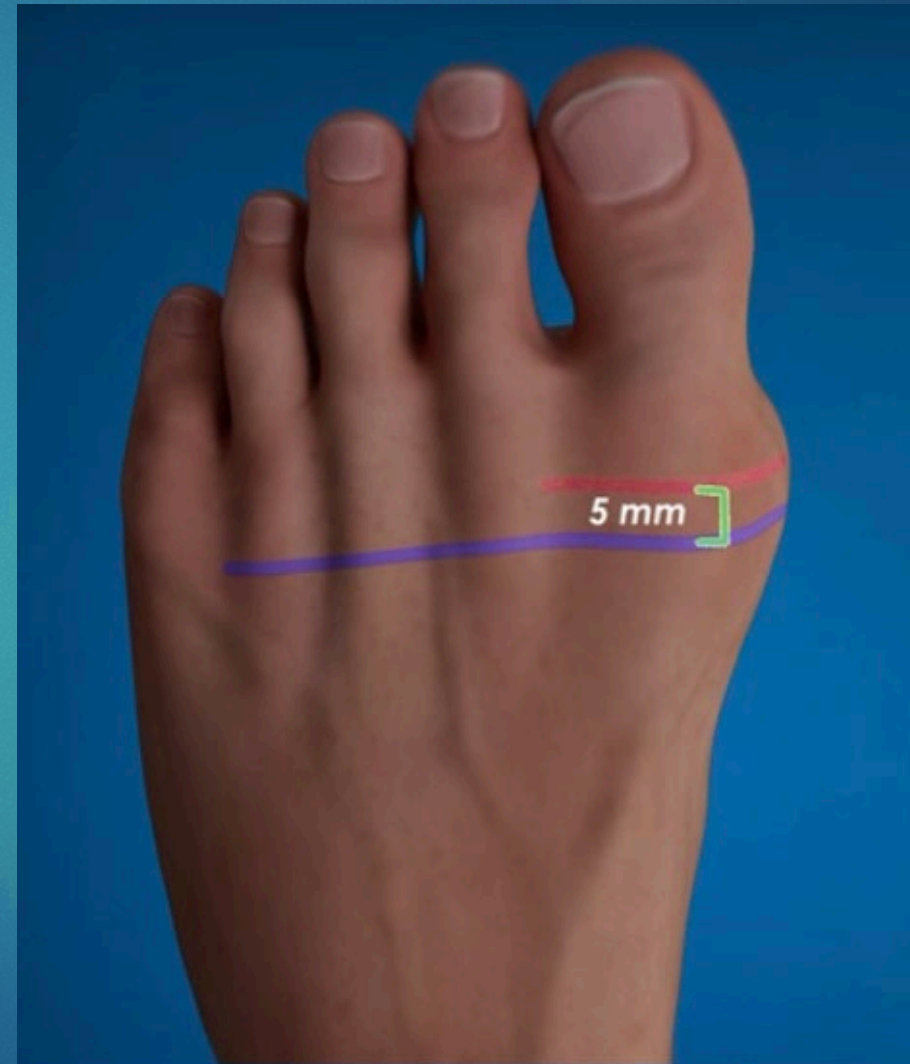
The RELJA Clamp Technique

- Confirm with fluoroscopy the obliquity of the cuneiform has been removed perpendicular to the 2nd metatarsal



The RELJA Clamp Technique

- ▶ Mark the 1st MTP with a horizontal line (shown in red).
- ▶ Next, make a parallel line 5mm proximal to this across the 1st and 2nd metatarsals (shown in purple)
- ▶ Palpate and mark the 2nd metatarsal (shown in green)



The RELJA Clamp

- ▶ Loosen all four thumb screws of the correct clamp (left or right)
- ▶ Lay the correct clamp flat on top of the foot in line with the contour of the foot.
- ▶ Next, position the 2nd metatarsal SLOT over the center of the 2nd metatarsal (as show in the photo)
- ▶ The Steinmann pin should enter at the bisection of the previously marked purple and green lines.
 - ▶ (Feel the sides of the 2nd metatarsal with the Steinmann pin to confirm the Steinmann pin enters the CENTER of the 2nd metatarsal)



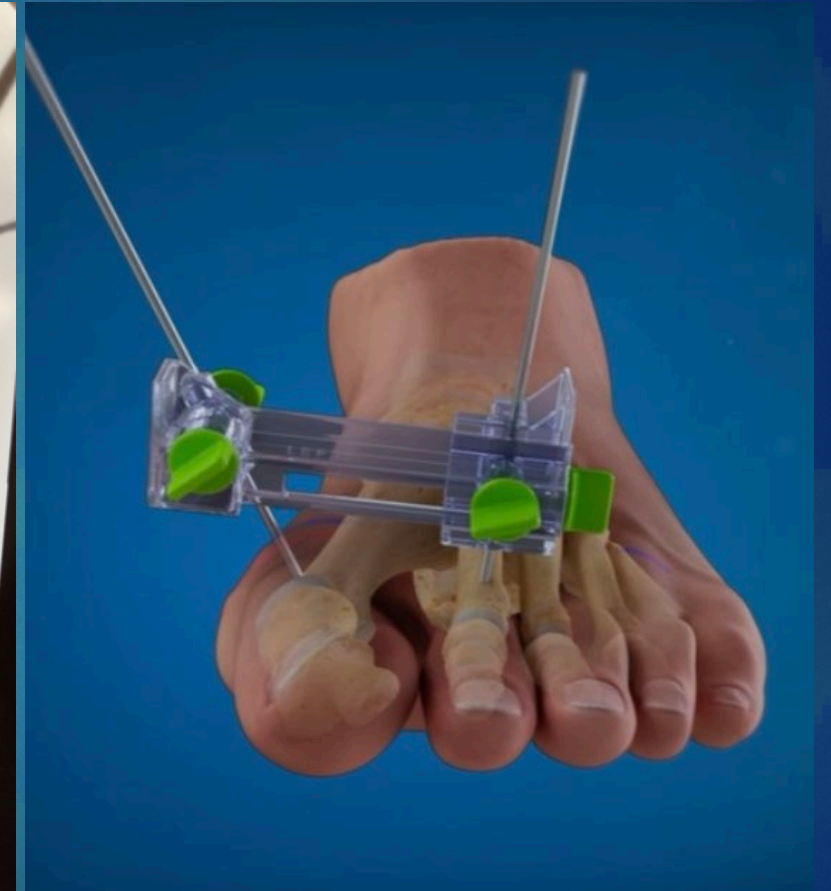
The RELJA Clamp

- ▶ Insert a Steinmann Pin bicortical into the 2nd metatarsal at the skin marking lines (Steinmann pin should be straight vertical)
 - ▶ A 0.062-inch K wire can be substituted on a small foot.
- ▶ The Steinmann pin should be inserted against distal portion of the slot of the 2nd metatarsal adjuster of the clamp as shown (this will allow the ability to plantarflex the 1st ray later as needed)



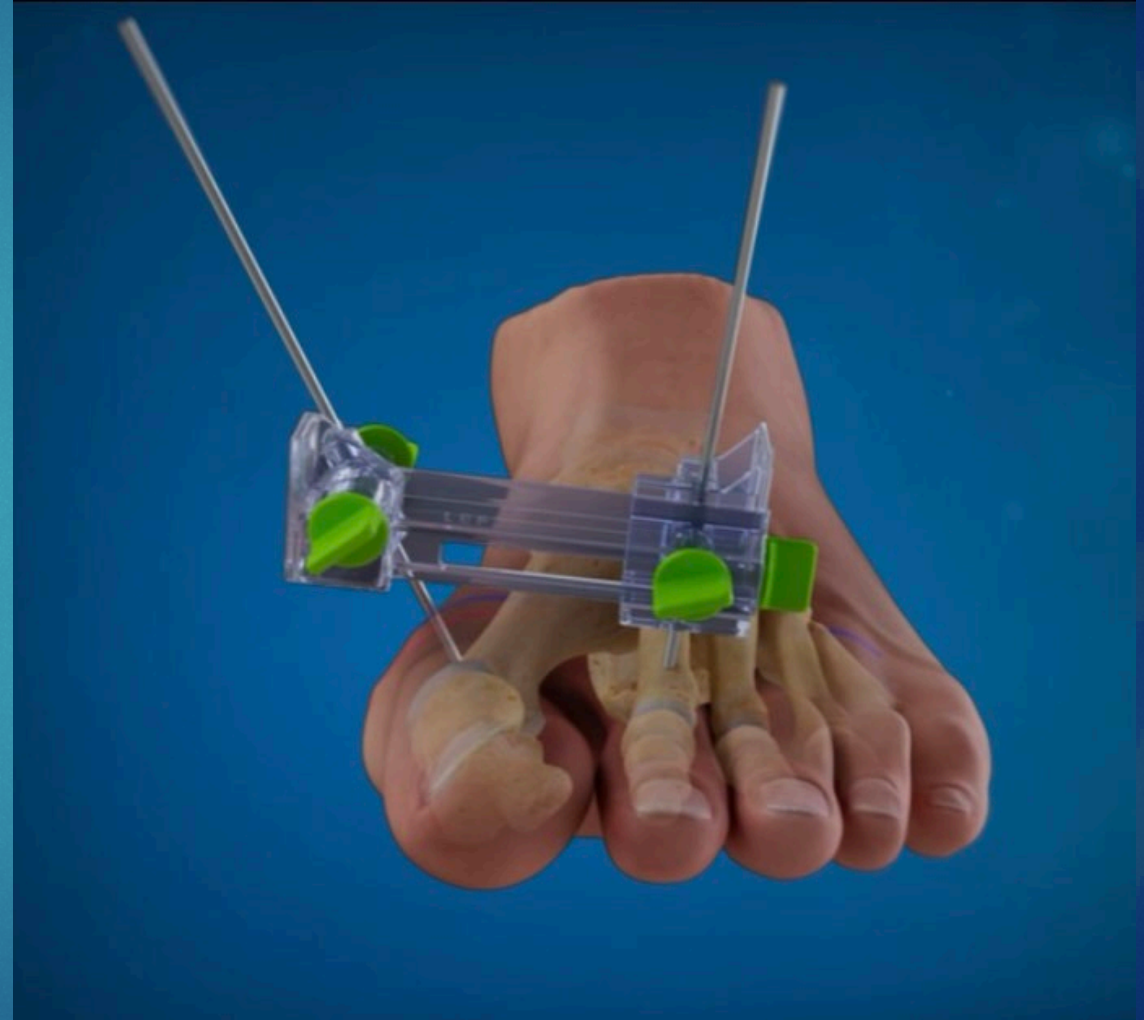
The RELJA Clamp

- ▶ Insert a Steinmann pin in the 1st metatarsal at the skin marking line
 - ▶ Enter the dorsal medial aspect of the 1st metatarsal head. Stop short of the plantar cortex of the 1st metatarsal head (shown in red in photo)
 - ▶ This should be angled at least 30 degrees from vertical as shown
 - ▶ DO NOT ENTER the 1st MTP and sesamoid apparatus (this will limit frontal plane correction of the deformity)



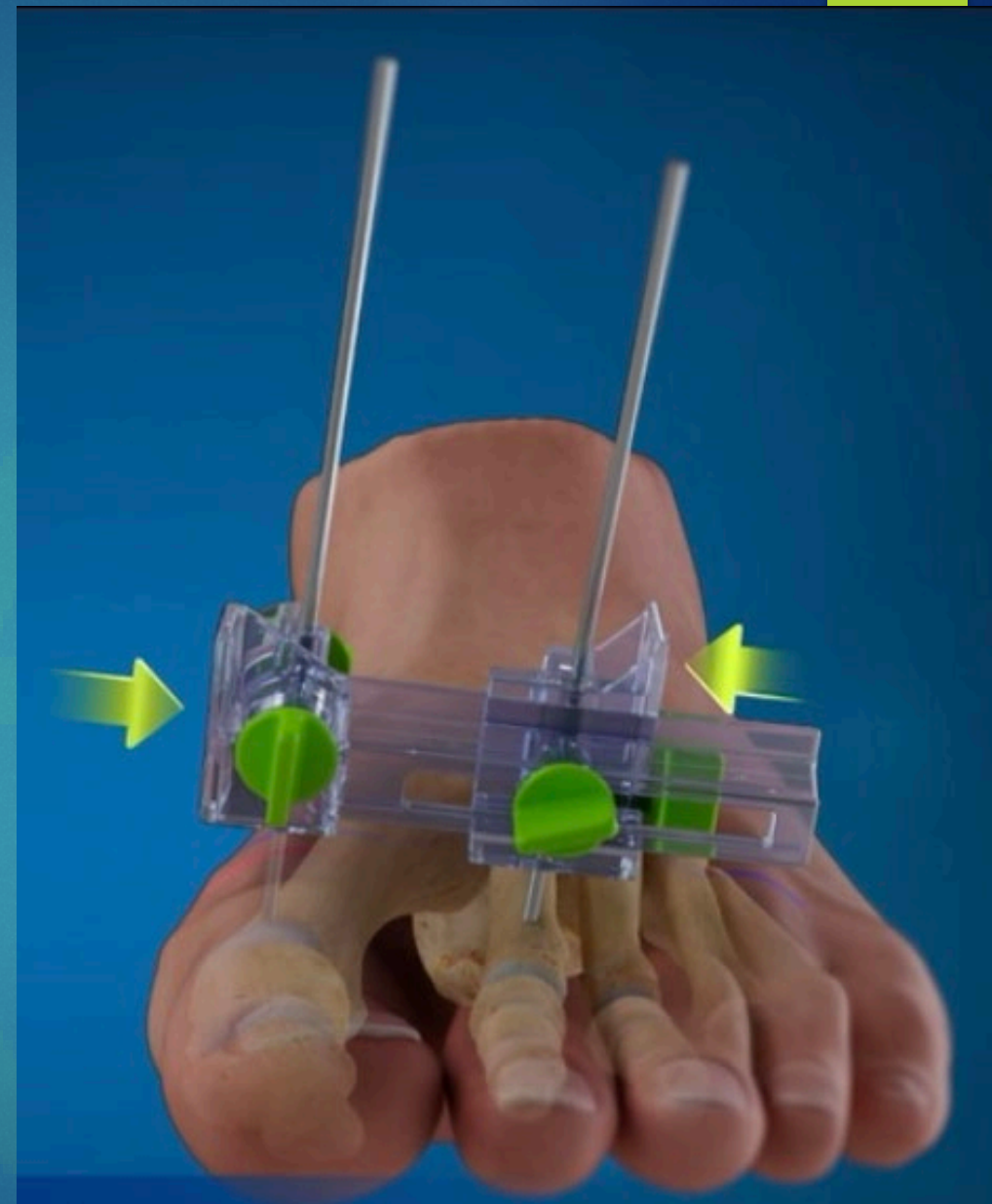
The RELJA Clamp

- ▶ Reduce the frontal plane deformity by rotating the 1st Steinmann pin until proper position achieved.
- ▶ After correcting frontal plane deformity, tighten thumb screw #1



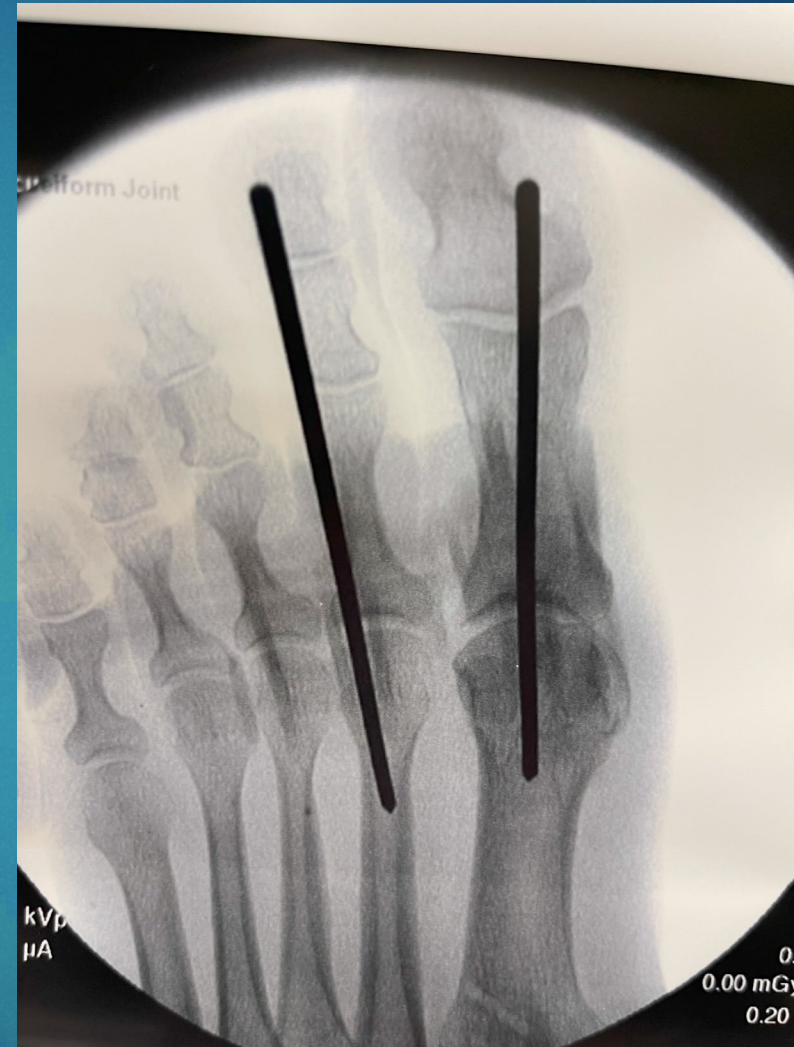
The RELJA Clamp

- ▶ Reduce the 1st Intermetatarsal angle by squeezing on the tabs as shown on the right.
- ▶ Tighten thumb screw #2



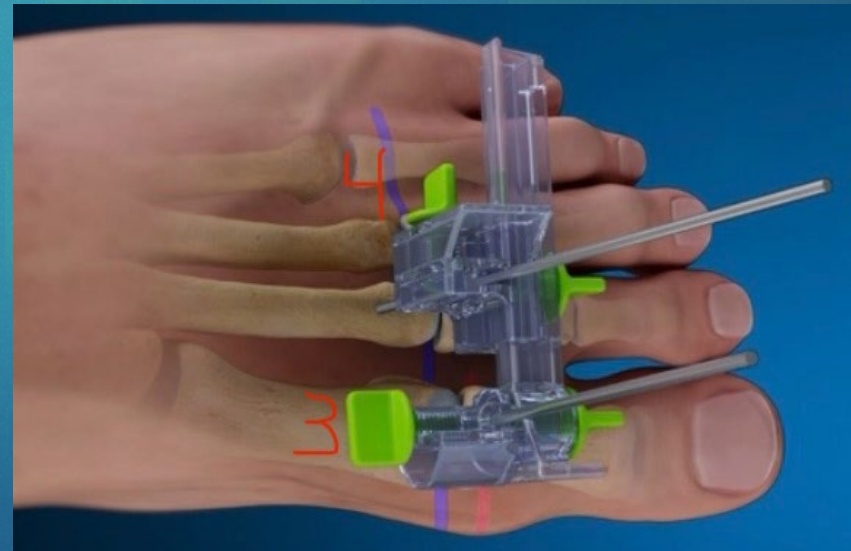
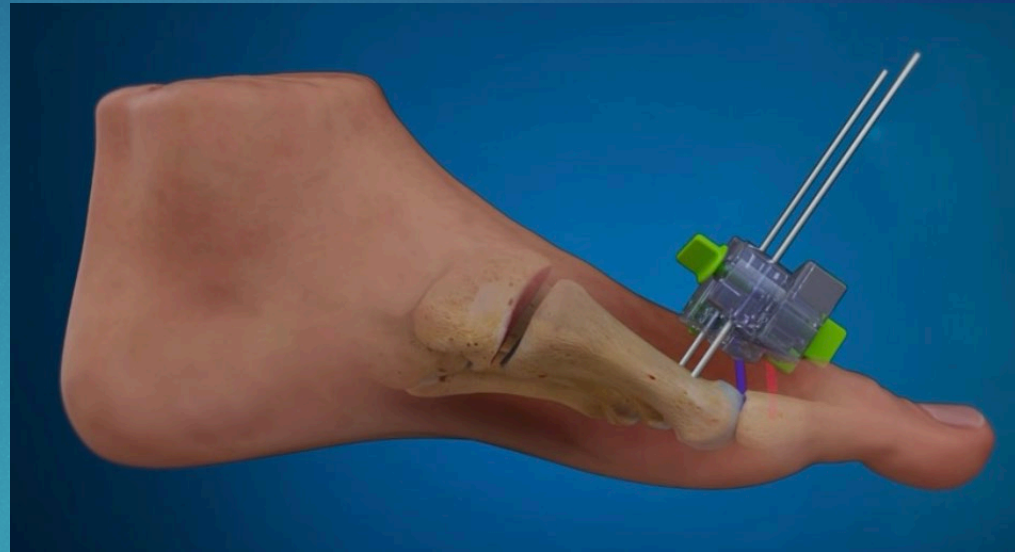
The RELJA Clamp

- Confirm position with fluoroscopy



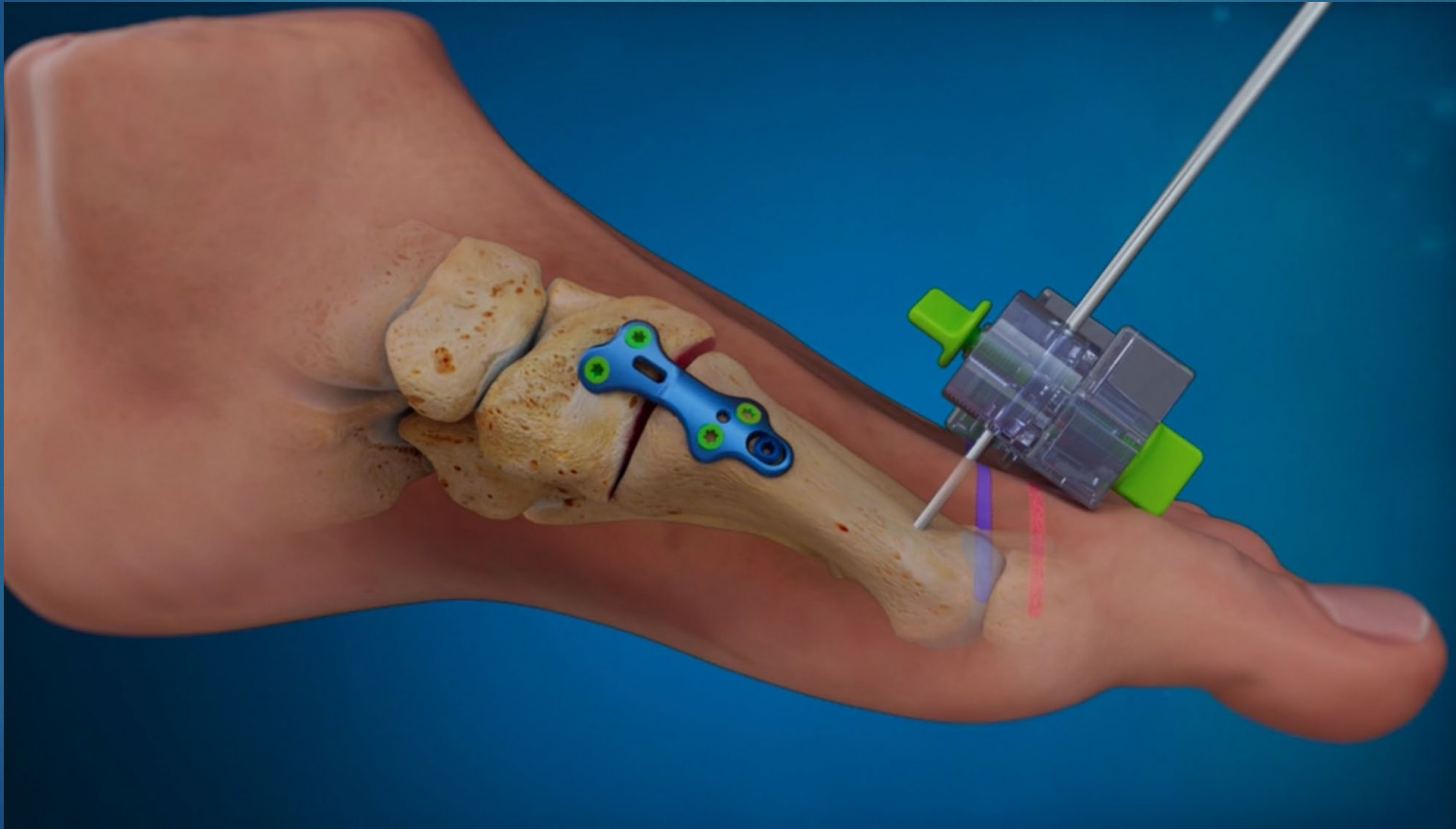
The RELJA Clamp

- ▶ Plantarflex the 1st metatarsal as needed to achieve proper position. The slot in the 2nd metatarsal adjuster on the clamp allows plantar flexion. Once proper position is achieved, tighten thumb screws 3 and 4.
- ▶ Instead of the above a surgeon may translate the 1st metatarsal as needed in the sagittal plane and then tighten thumb screws 3 and 4 . This will hold the clamp tightly on the Steinmann pins
- ▶ Place temporary fixation and all hardware, THEN remove the clamp.



The RELJA Clamp

- ▶ Place temporary and permanent fixation, THEN remove the clamp.



Case 1



Surgical Photos

