

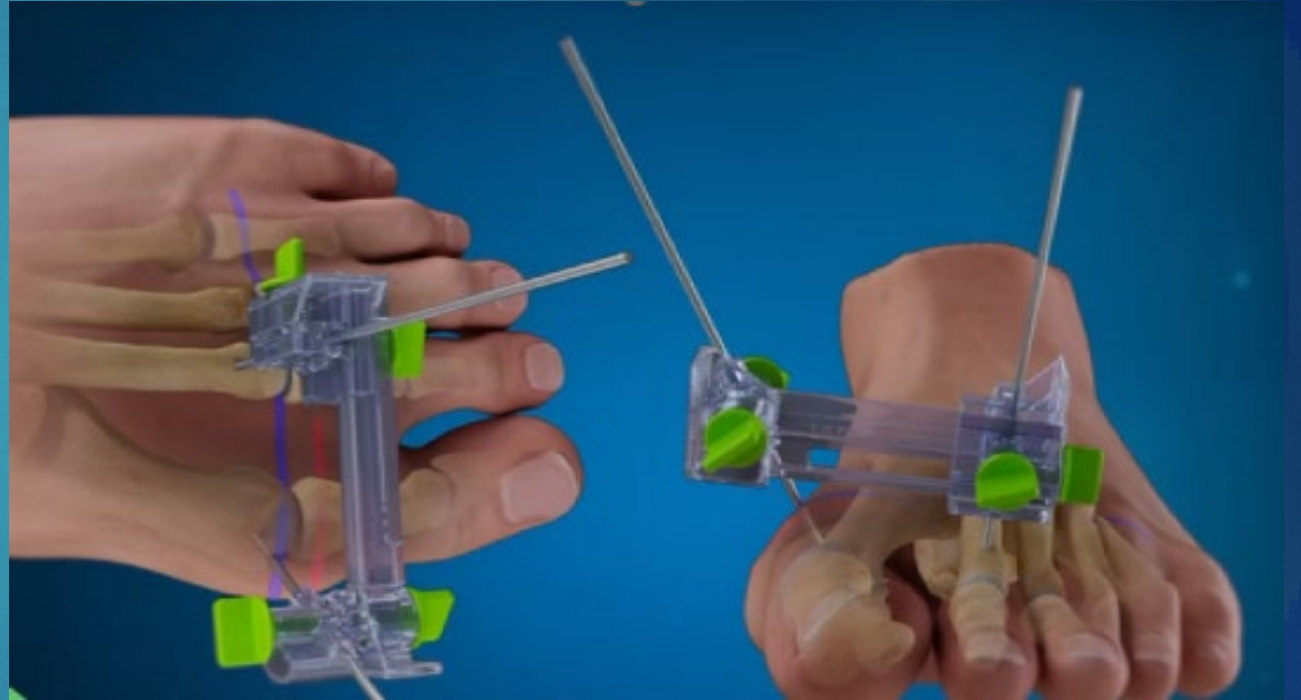


Innovative Designs  
Simplified Surgical Techniques

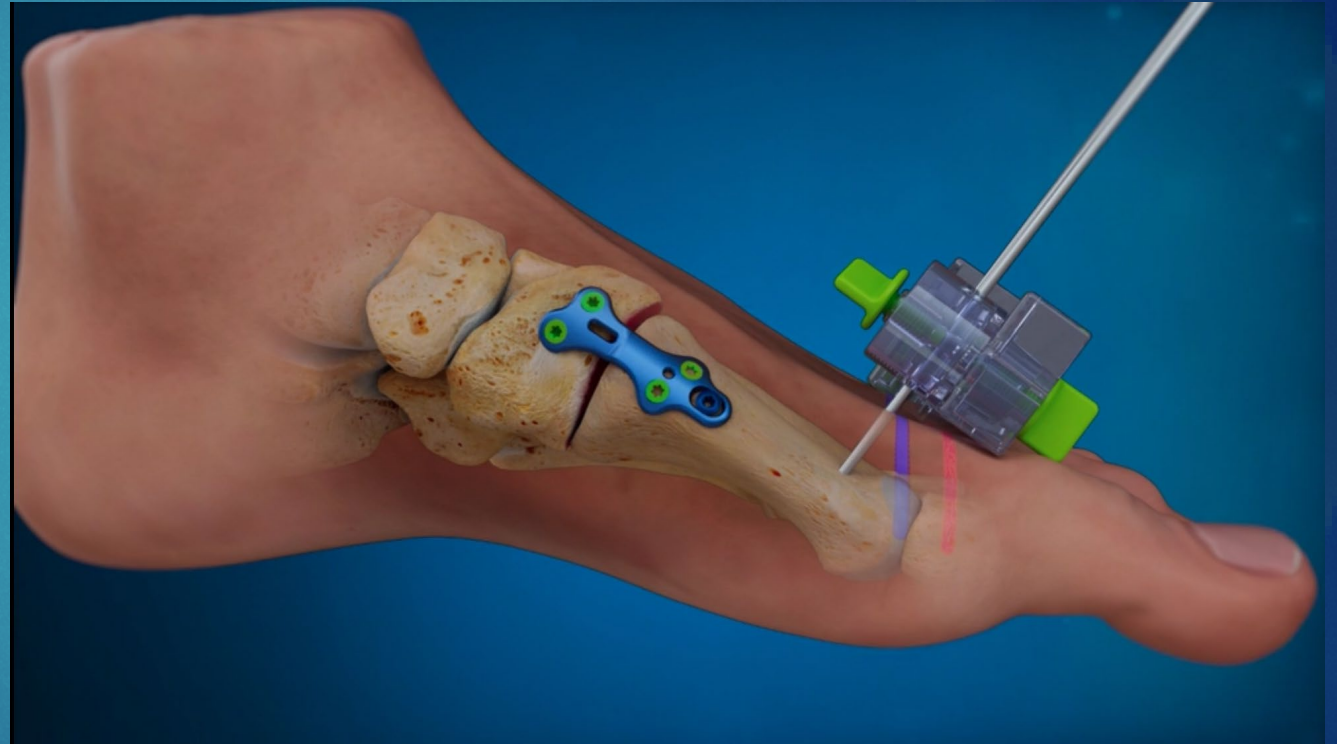
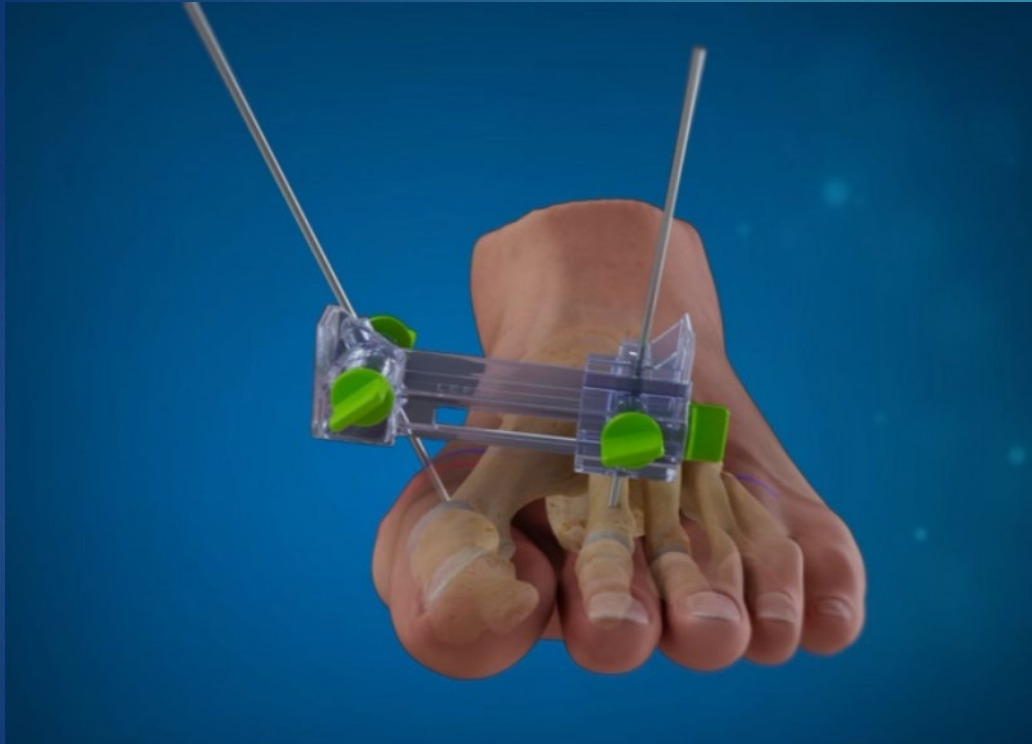
## THE RELJA CLAMP

# 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

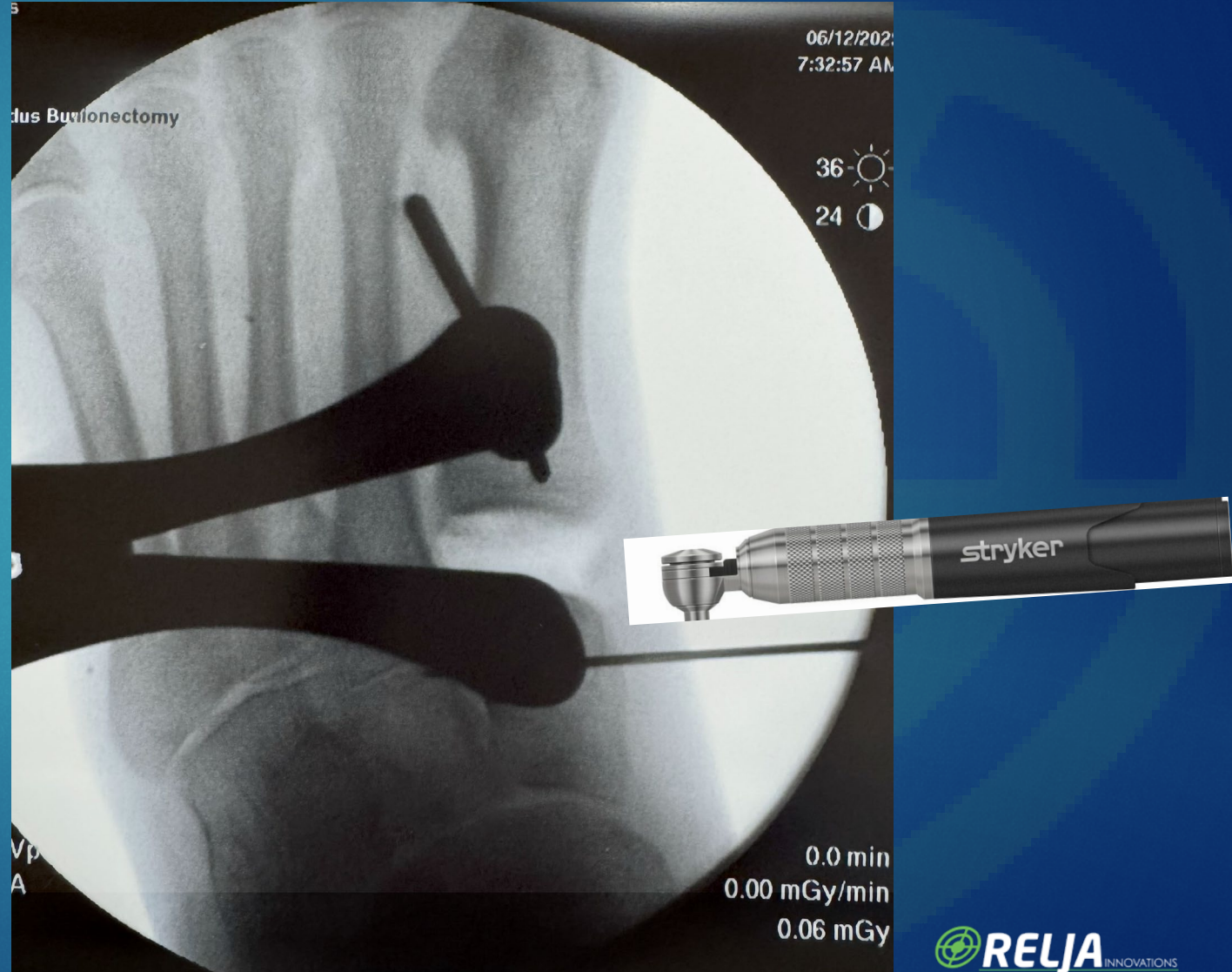


# The RELJA Clamp Technique

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

# The RELJA Clamp Technique

- ▶ Place a K wire in the central area of the medial cuneiform (perpendicular to the 2<sup>nd</sup> 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 2<sup>nd</sup> metatarsal



# The RELJA Clamp Technique

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



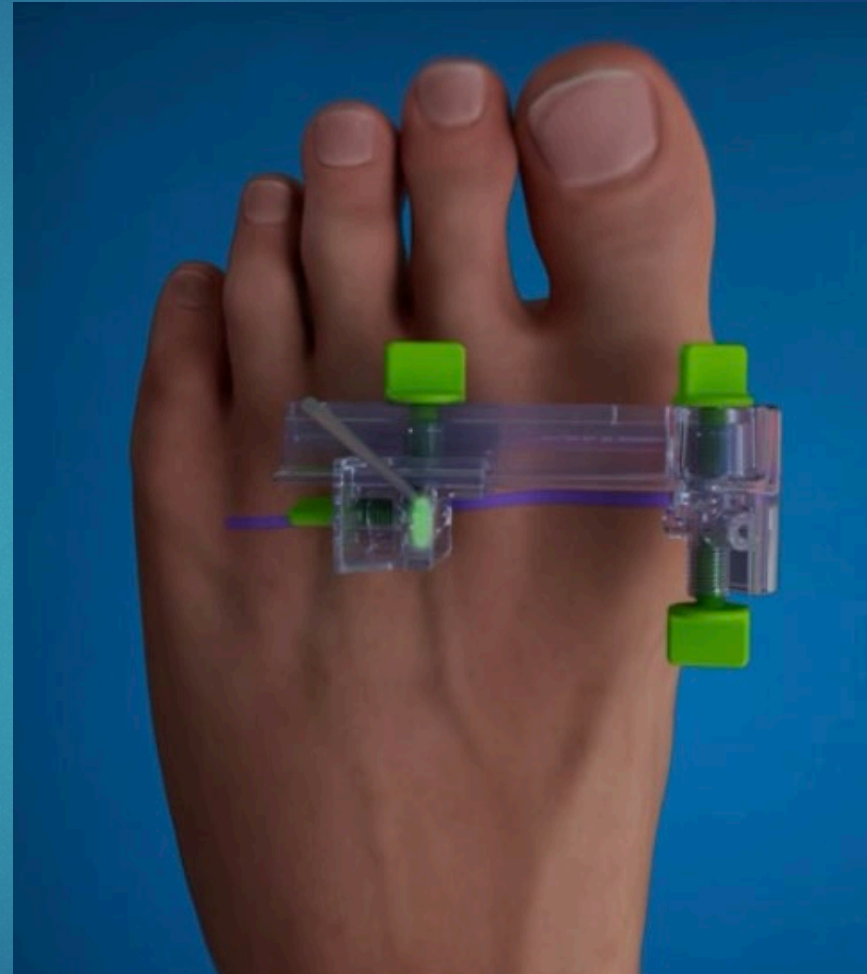
# The RELJA Clamp

- ▶ 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 2<sup>nd</sup> metatarsal SLOT over the center of the 2<sup>nd</sup> 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 2<sup>nd</sup> metatarsal with the Steinmann pin to confirm the Steinmann pin enters the CENTER of the 2<sup>nd</sup> metatarsal)



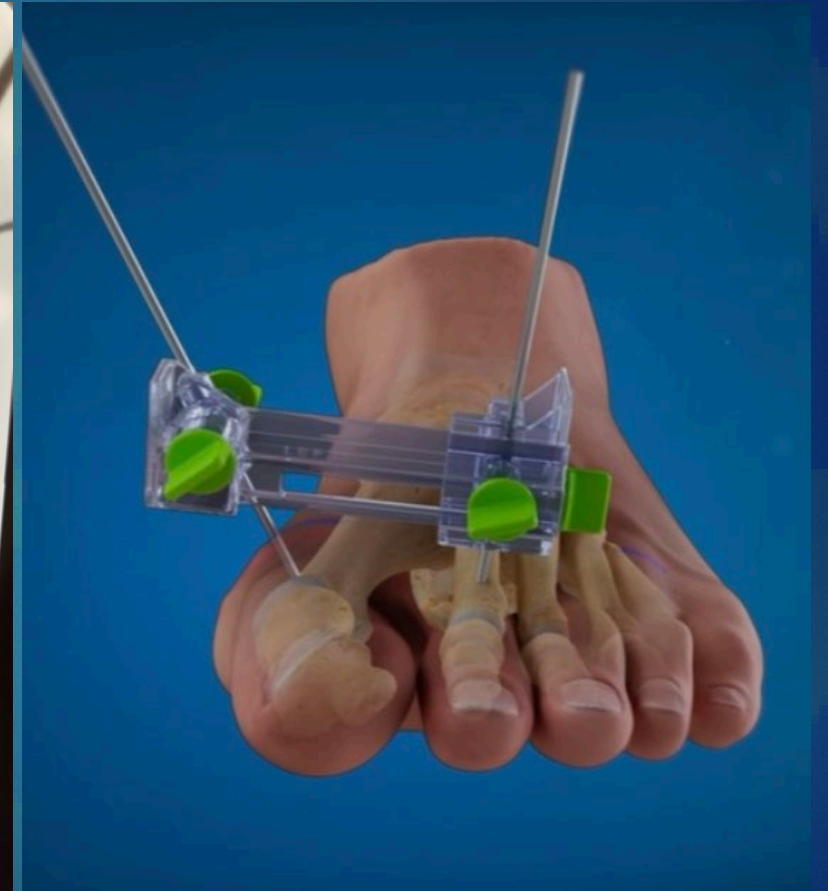
# The RELJA Clamp

- ▶ Insert a Steinmann Pin bicortical into the 2<sup>nd</sup> 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 2<sup>nd</sup> metatarsal adjuster of the clamp as shown (this will allow the ability to plantarflex the 1<sup>st</sup> ray later as needed)



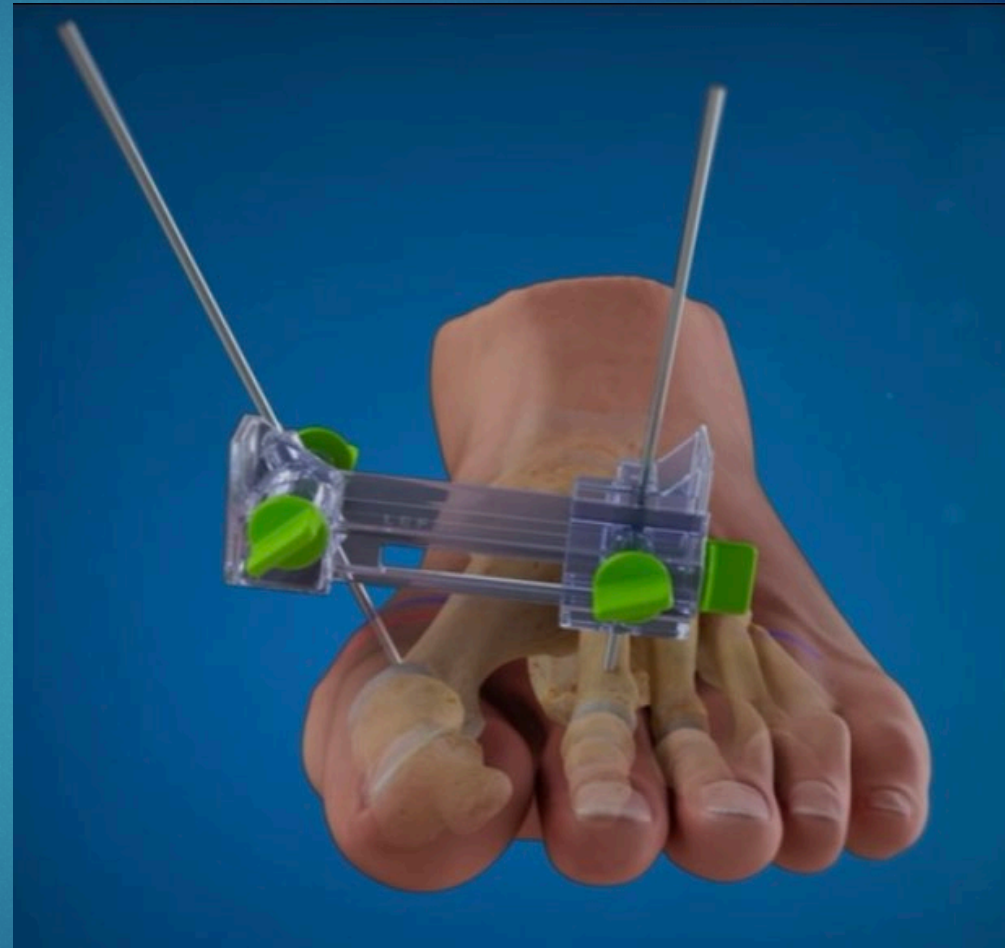
# The RELJA Clamp

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



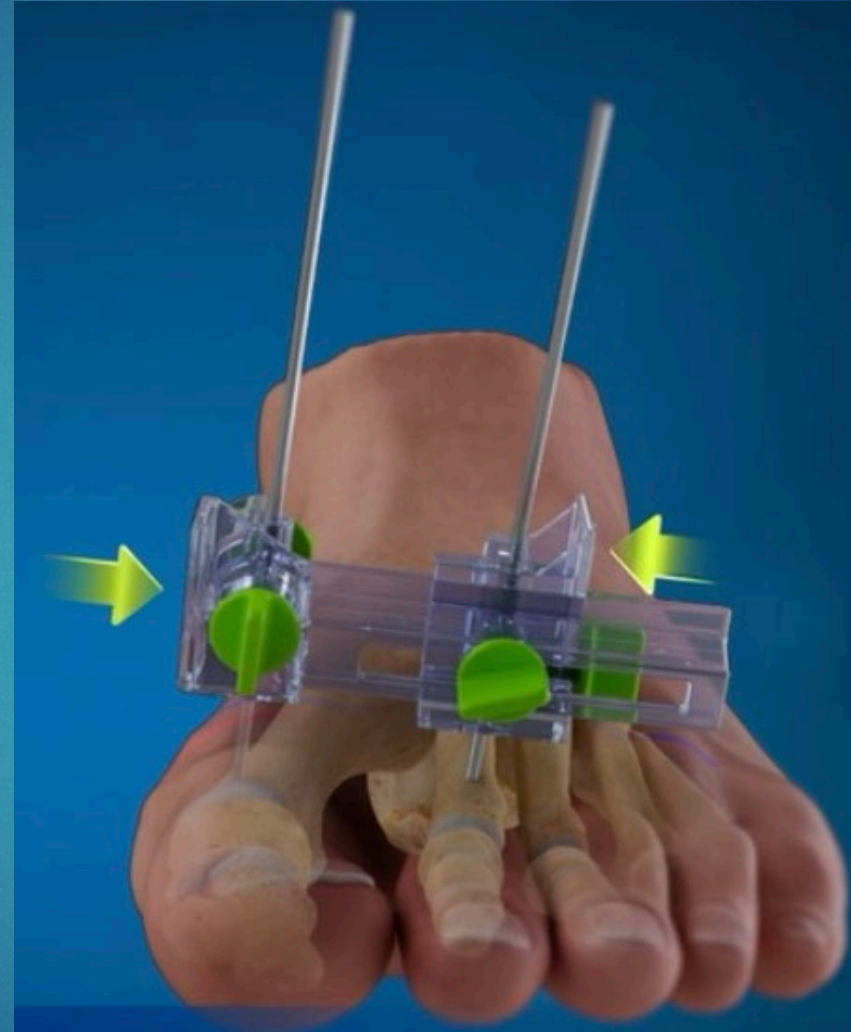
# The RELJA Clamp

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



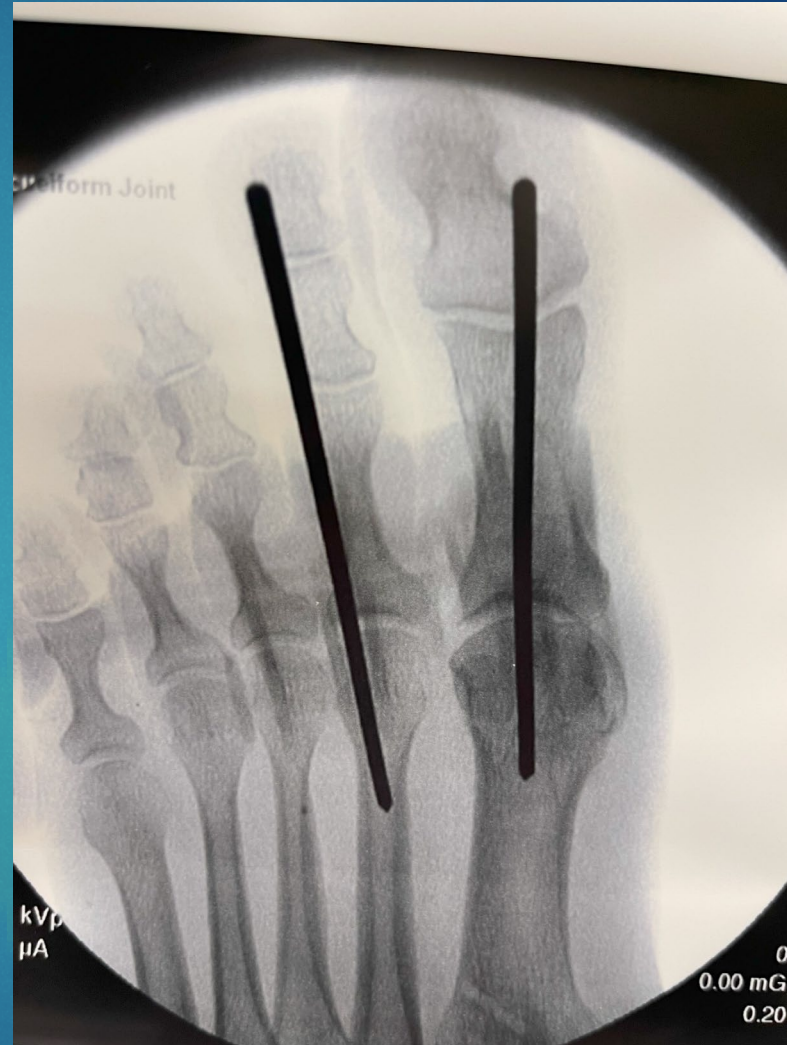
# The RELJA Clamp

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



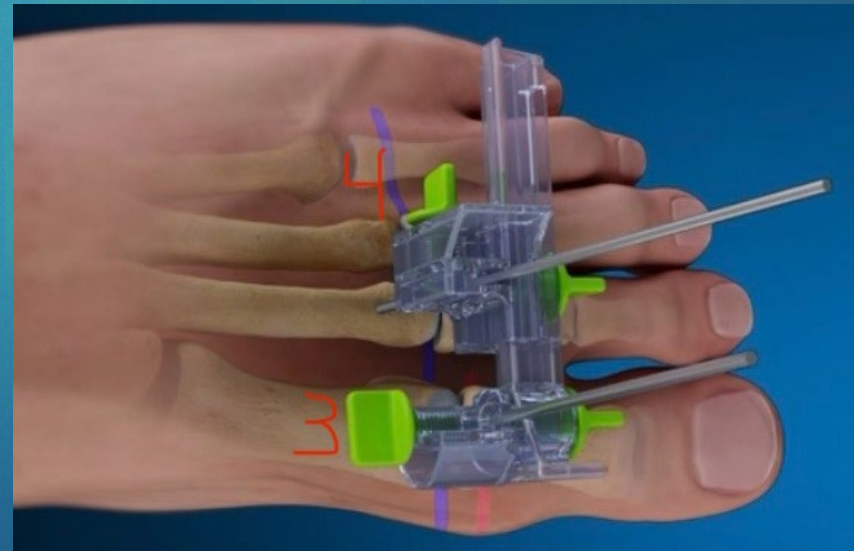
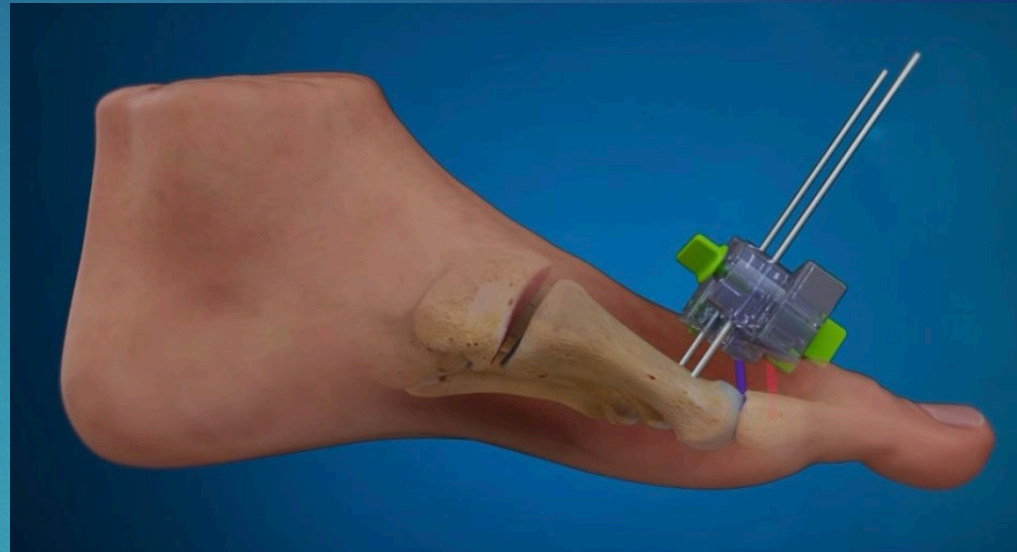
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- ▶ Confirm position with fluoroscopy



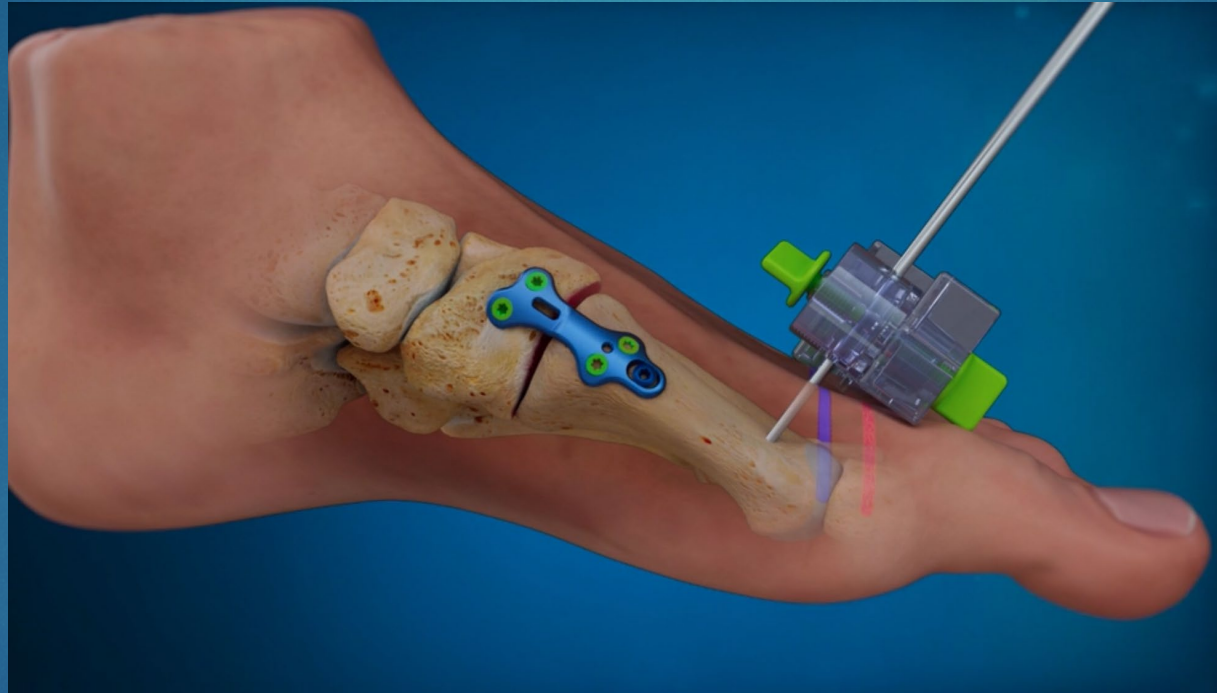
# The RELJA Clamp

- ▶ Plantarflex the 1<sup>st</sup> metatarsal as needed to achieve proper position. The slot in the 2<sup>nd</sup> 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 1<sup>st</sup> 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

