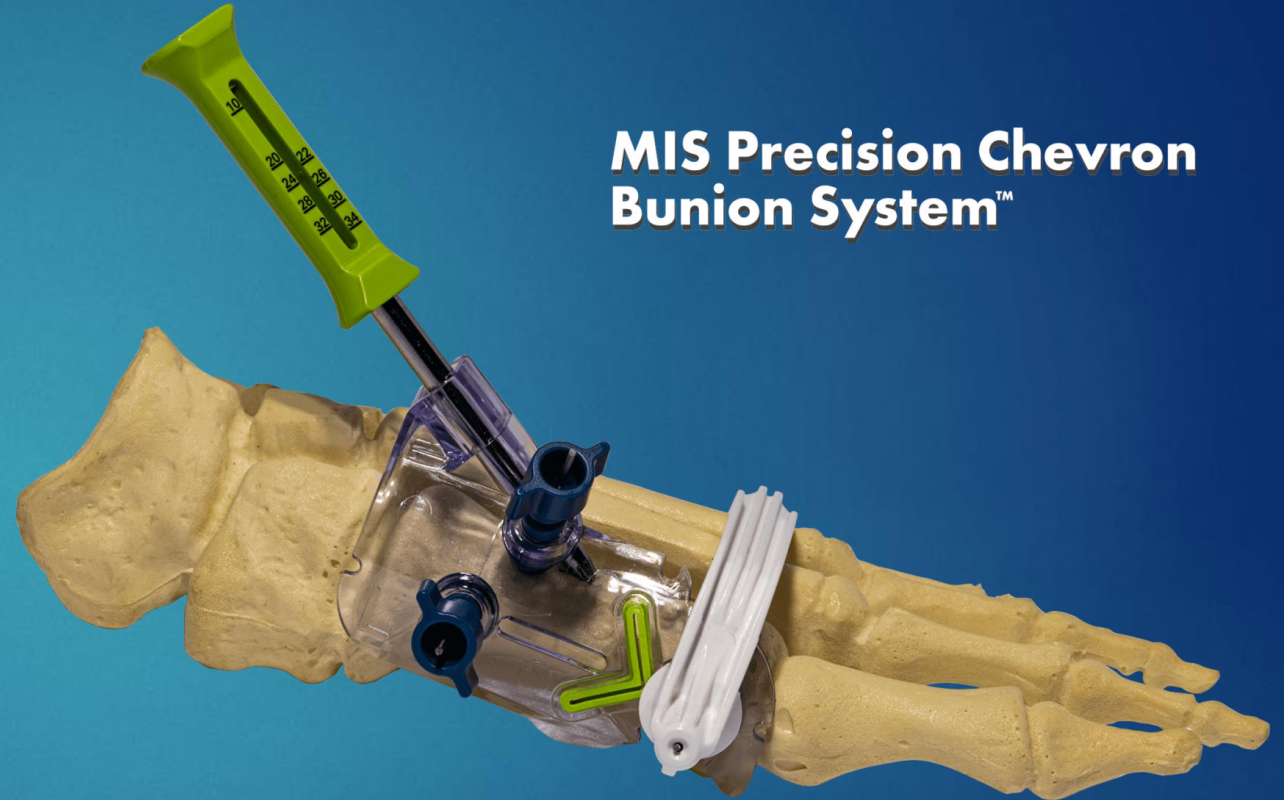




MIS PRECISION CHEVRON BUNION SYSTEM

MIS Precision Chevron Bunion System - New

- Based off a traditional method
- Chevron Osteotomy Guide
- Sagittal Saw
- Screw guide for placement of a 3.5mm cannulated screw
- 1cm incision
- Indications
 - Mild to moderate bunion
- Correction in transverse and sagittal plane
- More cost effective



MIS Chevron – RELJA Innovations

- ▶ Features and Benefits
 - ▶ Minimally Invasive
 - ▶ Stable Chevron Osteotomy
 - ▶ Less Opioids
 - ▶ Faster transition to tennis shoe
 - ▶ As early as 6-7 weeks
 - ▶ Higher patient patient satisfaction
 - ▶ Lower learning curve
 - ▶ 45 – 70 minutes duration 1st case
 - ▶ 45 minutes or less for the 3rd case
 - ▶ Based on 11 surgeons experience
 - ▶ RELJA will train surgeons and support first cases

Traditional open chevron bunionectomy

- ▶ Old procedure has been performed since the 1970s
- ▶ Still very popular
- ▶ Stable / Predictable
- ▶ 4-5cm open incision
- ▶ Patients have scar tissue
- ▶ Patients have joint stiffness
- ▶ Patients experience pain after surgery



MIS Bunion system benefits

- ▶ Extracapsular osteotomy = no 1st MPJ joint stiffness
- ▶ Better cosmetic result
- ▶ Decreased trauma to soft tissues
- ▶ Limit damage to blood supply
- ▶ Faster healing osteotomy
- ▶ Less post op pain and swelling
- ▶ Quicker recover and earlier return to activities
- ▶ Higher patient satisfaction
- ▶ Patients desire MIS

MIS Precision Chevron Bunion System

- Targeted, sterile procedure kit (One SKU)
- 1cm incision
- Indication for use:
 - Mild to Moderate bunion deformity
 - Limited hypermobility of the 1st ray
 - Limited frontal plane rotation
- 50-70% of bunions performed today are still chevron procedures
- Product is FDA approved

This sawblade is required (or Hall equivalent)



RELJA MIS Precision Chevron Bunion System

- The MIS Precision Chevron Bunion System allows surgeons to perform a Chevron bunion surgery through a small 1 cm incision
- “familiar” to the way surgeons perform a chevron bunionectomy now
- Uses a traditional sagittal saw blade



RELJA MIS Precision Chevron Bunion System

- Precision aiming guide for placement of a cannulated screw.
- Quick, accurate and repeatable
- Sterile packed kit with precision osteotomy guide, all instrumentation, and 2 screws



RELJA





MIS PRECISION CHEVRON TECHNIQUE

MIS Lateral Release:

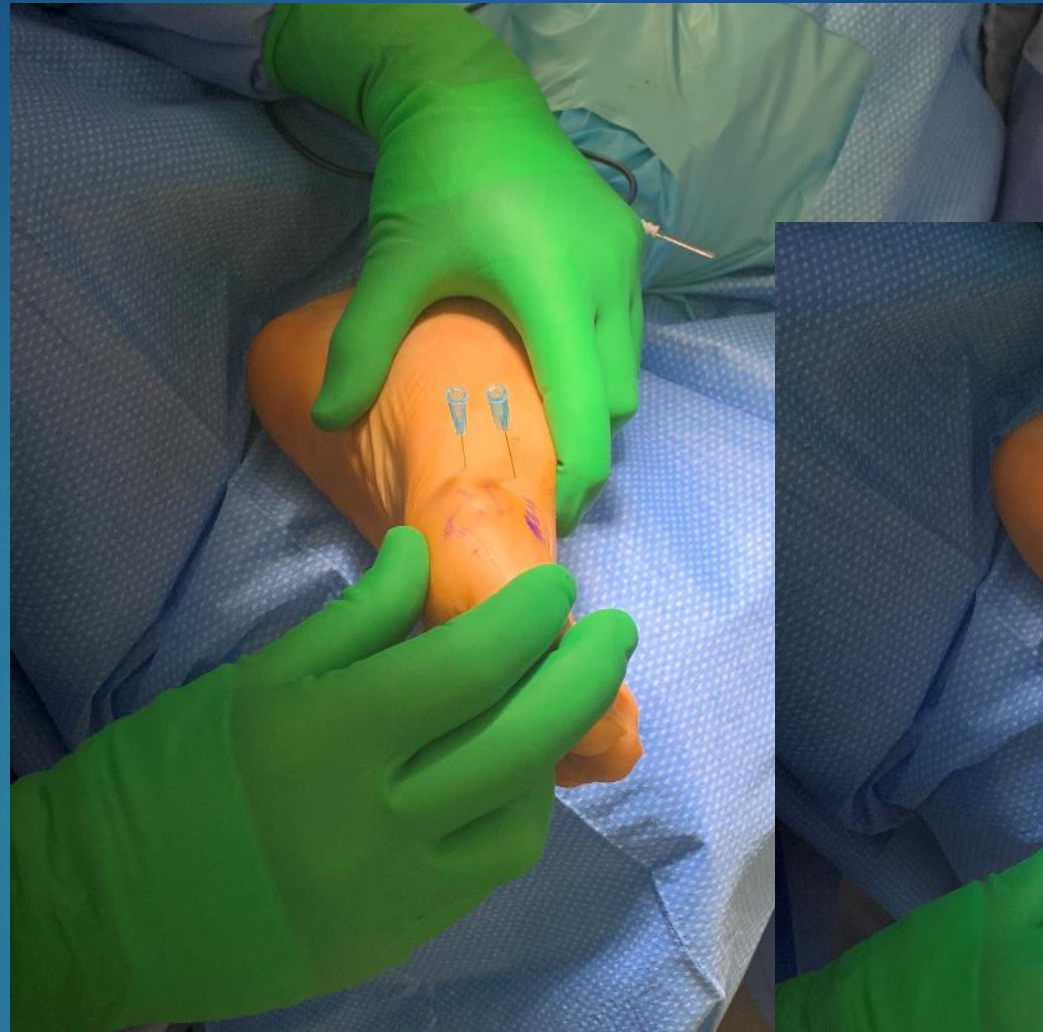


Mark Midshaft of the 1st metatarsal just proximal to the medial eminence

Place 25G needles above and below the 1st metatarsal. Needles should stand parallel on their own

Needles start in center of the bone and work up / down to get correct position

Place a Mark between the two needles



Repeat Midshaft

approx. 2cm
proximal to the
previous mark

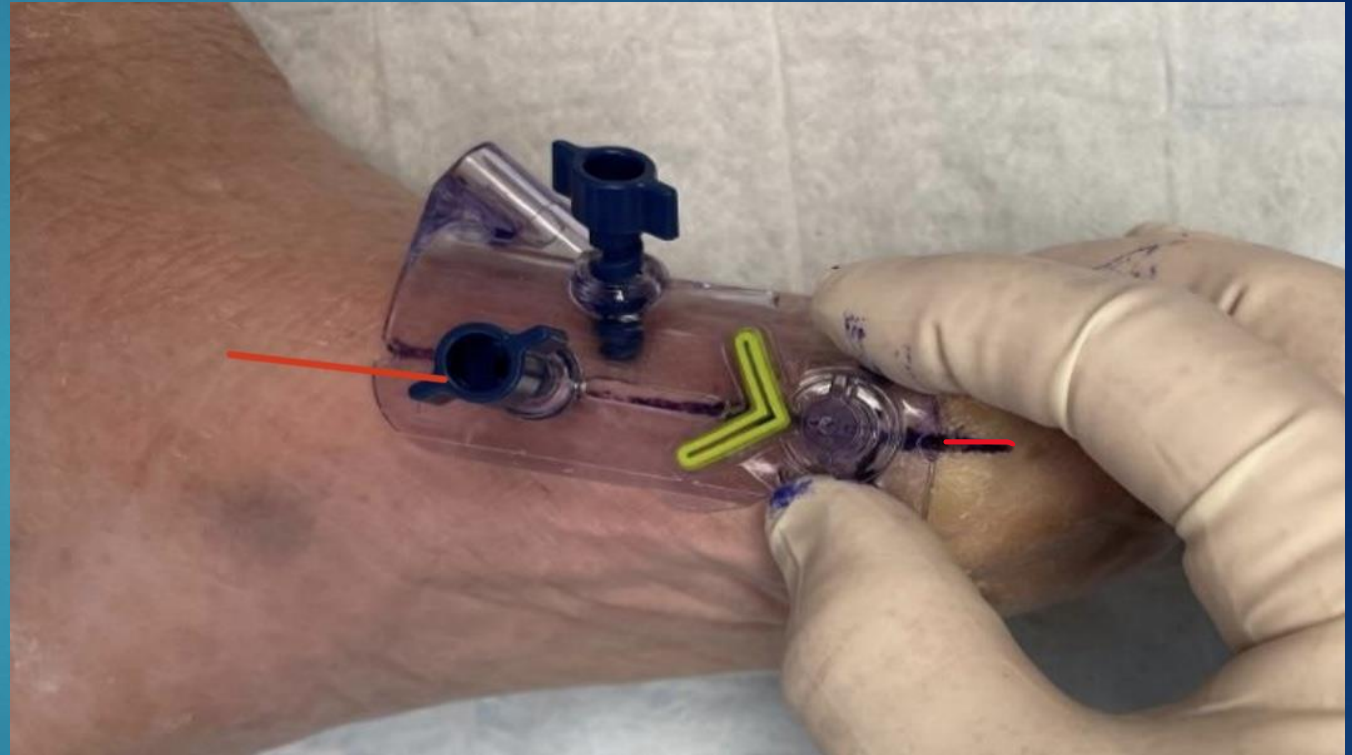


Place the guide wire
over the two marks
and draw a line

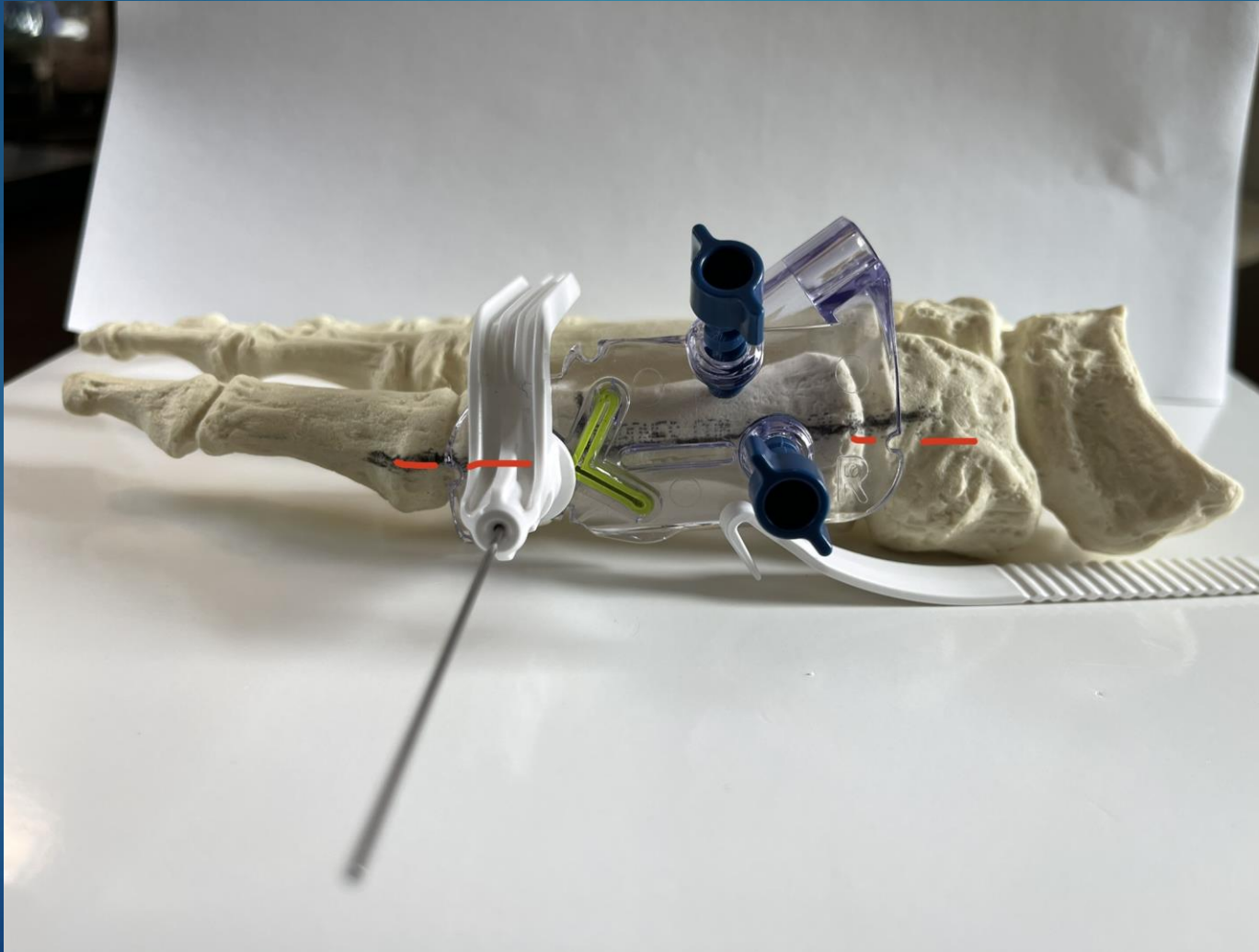
Draw line long
enough to go past
the osteotomy guide



- Place the Osteotomy Guide on the foot in line with the first metatarsal markings
- Always hold the Osteotomy guide at the distal portion as shown.



- Distal markings (red) line up with distal notch. Proximal notch 3 mm below skin marking line.
- Targeting guide aim directly across the foot as shown (not dorsiflexed or plantarflexed unless desired by surgeon).



- ▶ Aim targeting guide (Red) to 4th MPJ / base 4th digit.



- ▶ Utilize the Targeting Guide (white) to assist with alignment.



- ▶ Utilizing live fluoroscopy, align the osteotomy guide on the medial side of the foot.
- ▶ Utilize K wire #1
 - ▶ (insert into the targeting guide and osteotomy guide but not in the foot)
- ▶ Obtain a true lateral for this image with the k wire looking like a BB
- ▶ Align the osteotomy guide midline on the 1st metatarsal in the area of the 1st metatarsal neck



Align the osteotomy
guide until you
achieve this position.

Next insert K wire #1 in
the 1st metatarsal



Confirm the osteotomy guide is in the correct position.

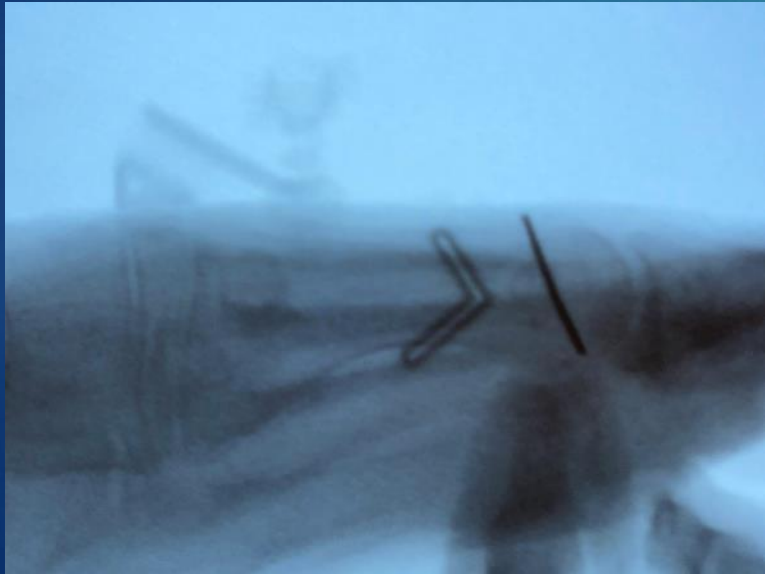
Place the medial side of the foot against the x ray tube.

This is easier to get a true lateral

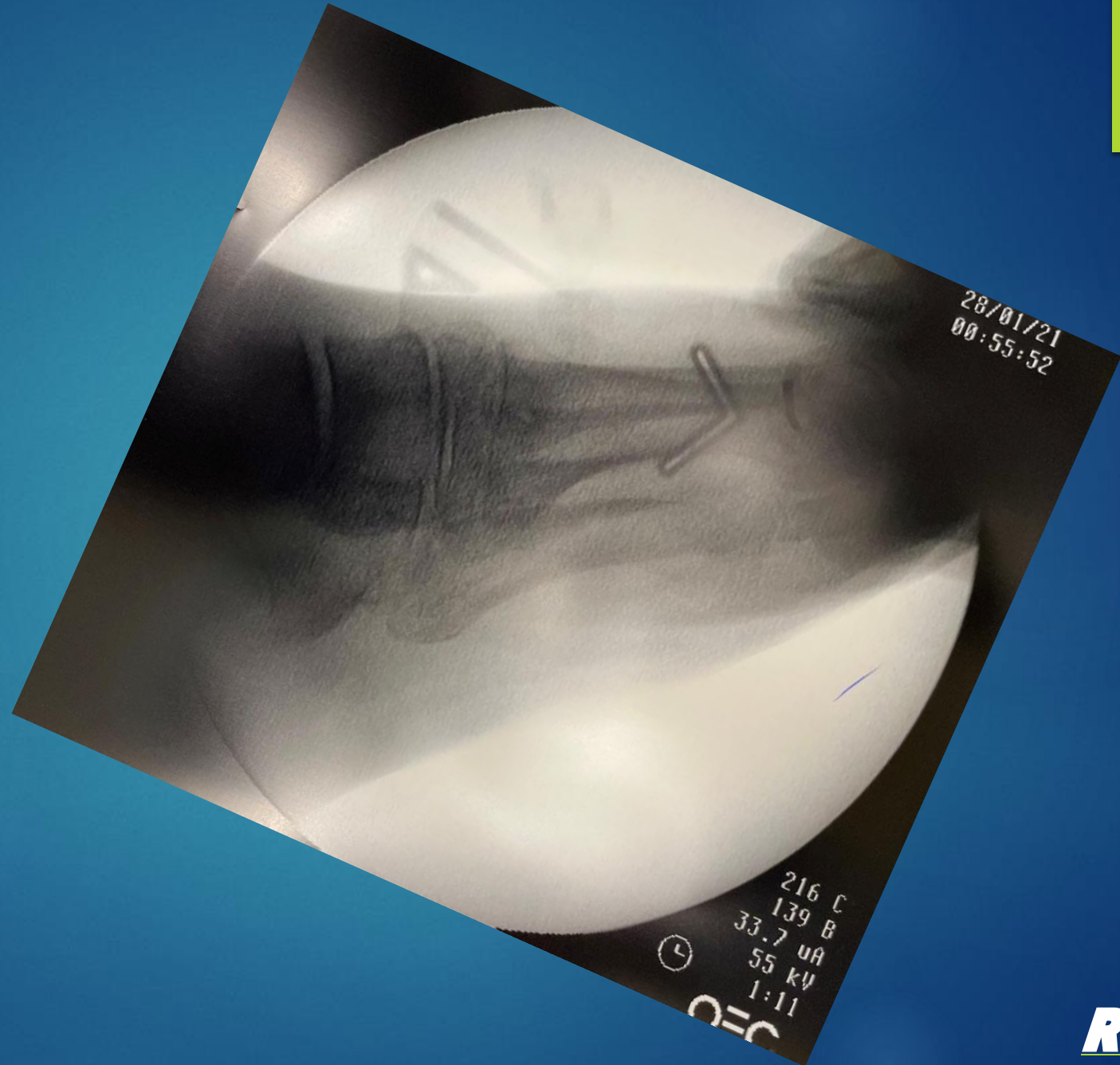


- Ensure the apex of the osteotomy is midline of the 1st metatarsal

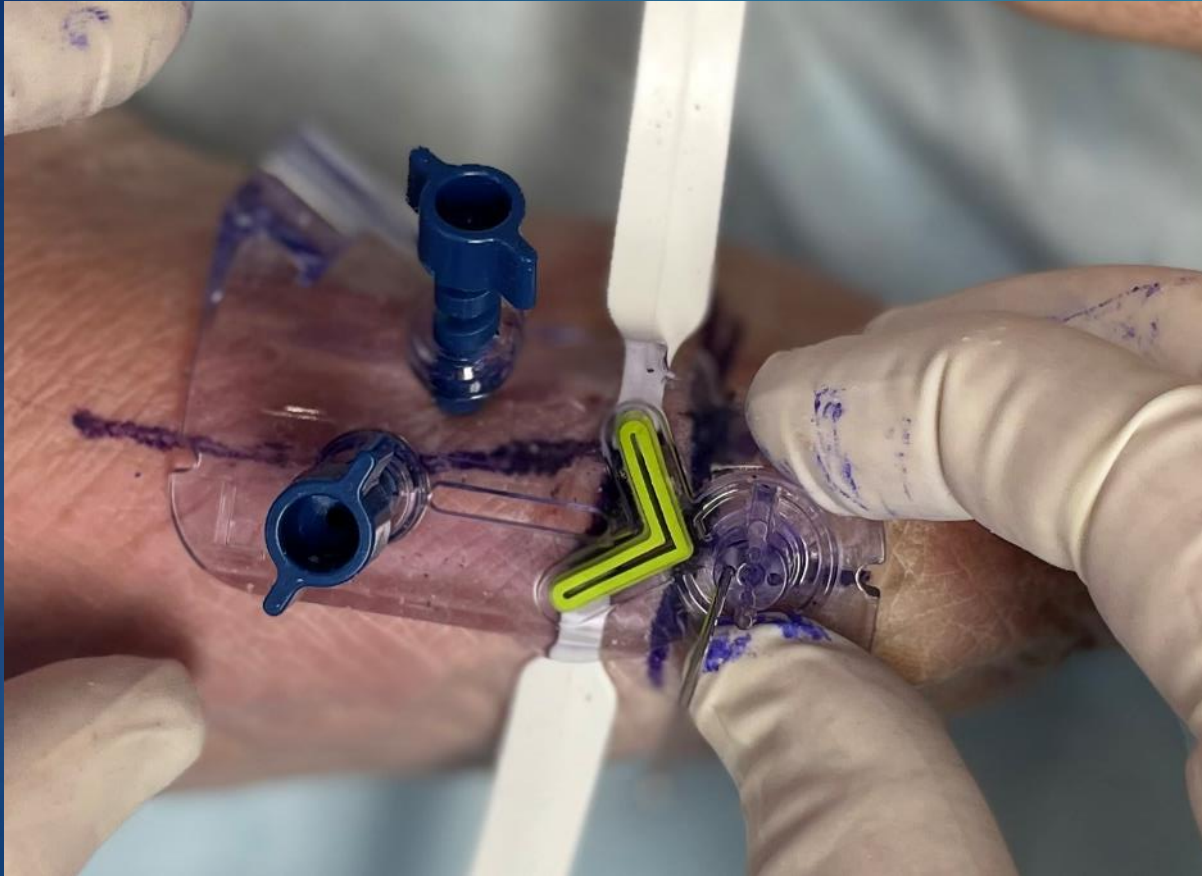
- ▶ X rays should be shooting down the line of the K wire
 - ▶ K wire should look like a BB
- ▶ Point the K wire directly down the line of the tube on the fluoroscopy
- ▶ NO NO YES



Confirm Position of
Osteotomy Guide with
Fluoroscopy
-Osteotomy here is
too proximal



Adjustment holes - allows fine adjustment of the guide on K-Wire #1.



- Rotate or Remove the Chevron Osteotomy Guide and mark the incision
- Make an incision
 - Horizontal first cases
 - Then transition to Vertical
- Perform dissection



Insert the Dorsal Retractor (longer) to protect the soft tissues and EHL.

Insert the Plantar Retractor (shorter) to protect the soft tissues.



While retracting the skin, utilize a freer to confirm that K wire #1 is midline of the metatarsal



Rotate Guide back into position

Gently adjust blue alignment screws to rest on the skin if needed

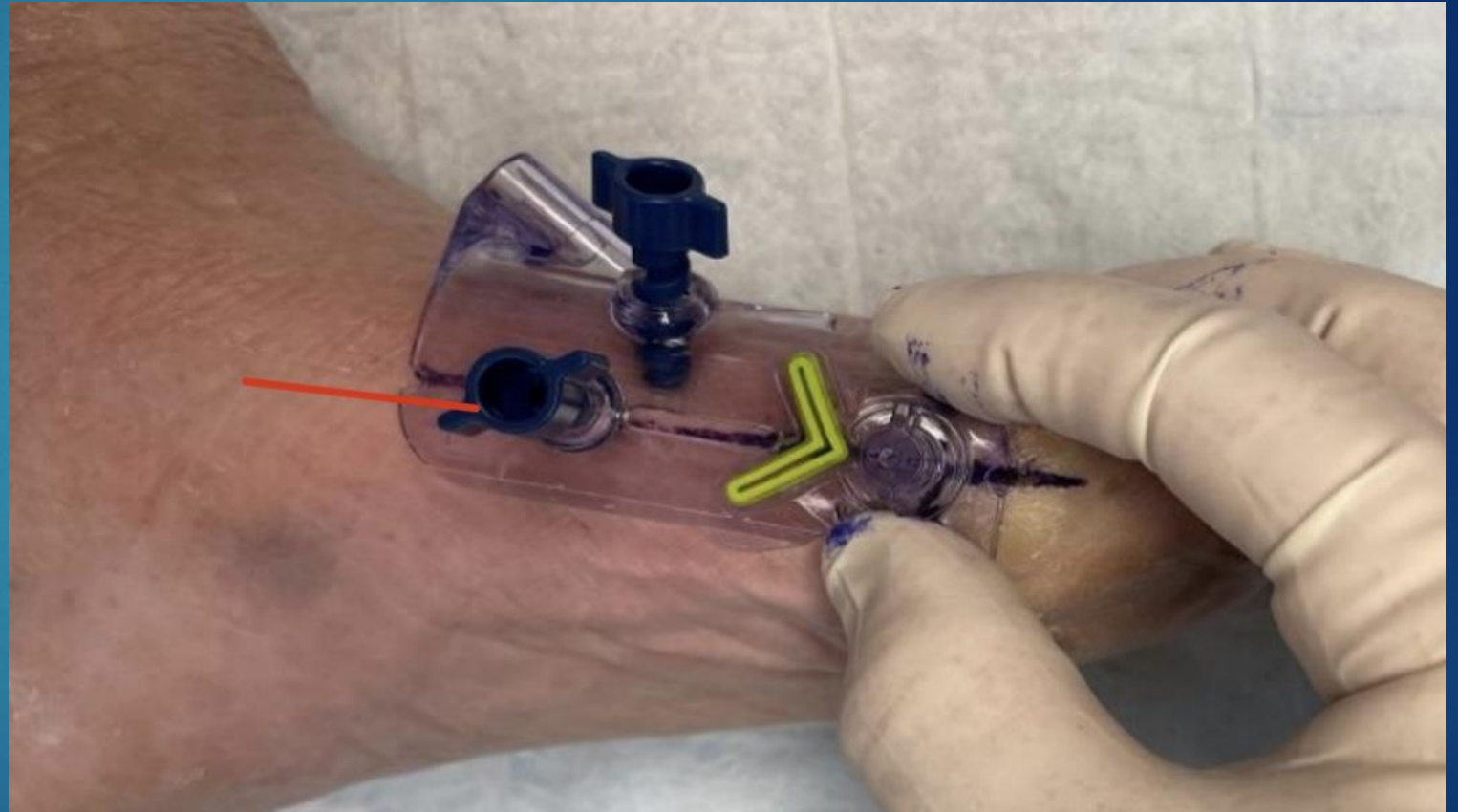


Apply Jurgens Ball with
distal guide held against
the skin on K wire #1



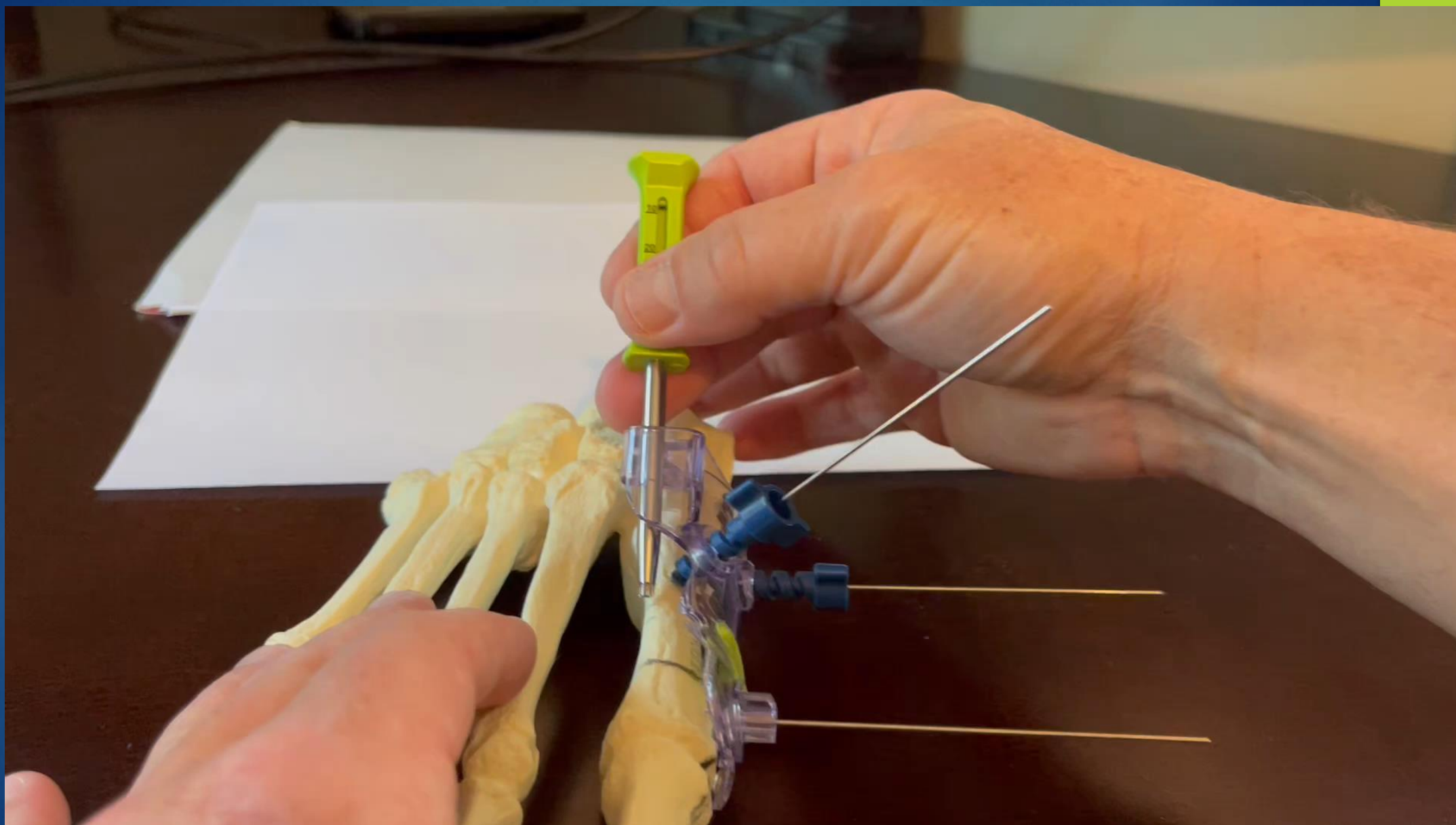
Proximal portion of the guide should be 3mm below the skin marking line

This will ensure the guide wire enters the 1st metatarsal in the best position in a later step



- ▶ Insert K Wires 2 and 3
- ▶ Insert the Screw Guide





- ▶ Insert the 1.1mm Guide Wire through the Screw Guide
- ▶ Don't allow the screw guide to skive distal while inserting
- ▶ Stop just short of the 1st MPJ



- Confirm screw guide doesn't slide distal when inserting guide wire.

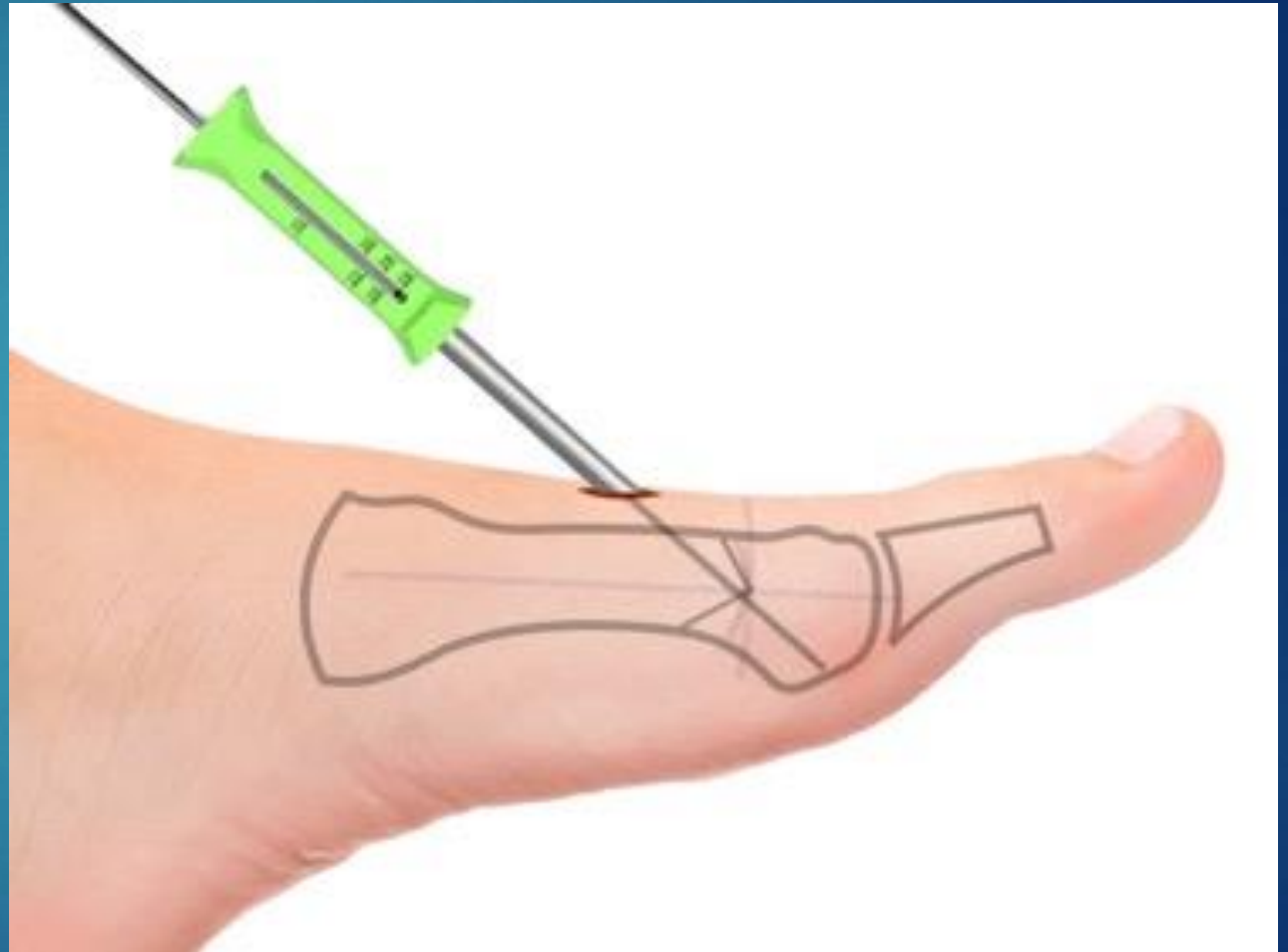
Apply gentle pressure in direction of arrow to keep k wire from skiving distally. Don't change the angle of entry of the guide wire.



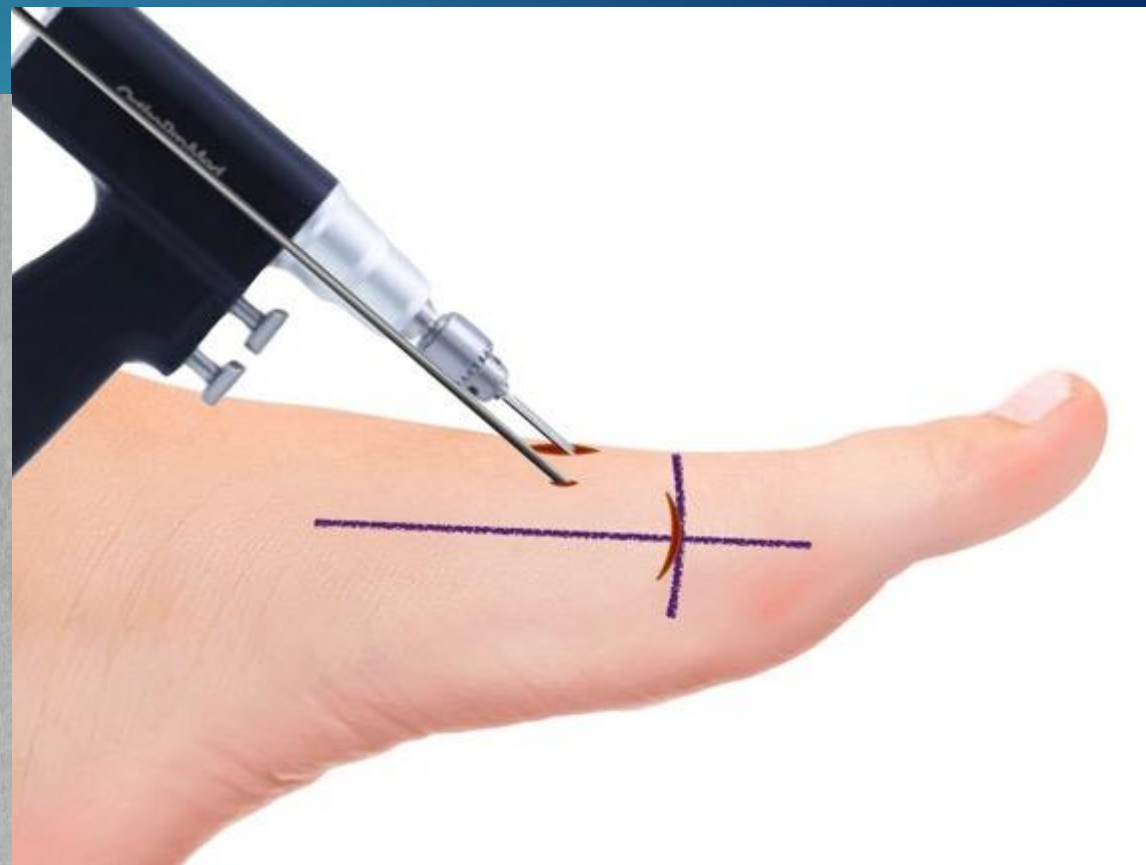
Guide wire should enter dorsal aspect of 1st metatarsal at least 1cm proximal to the osteotomy



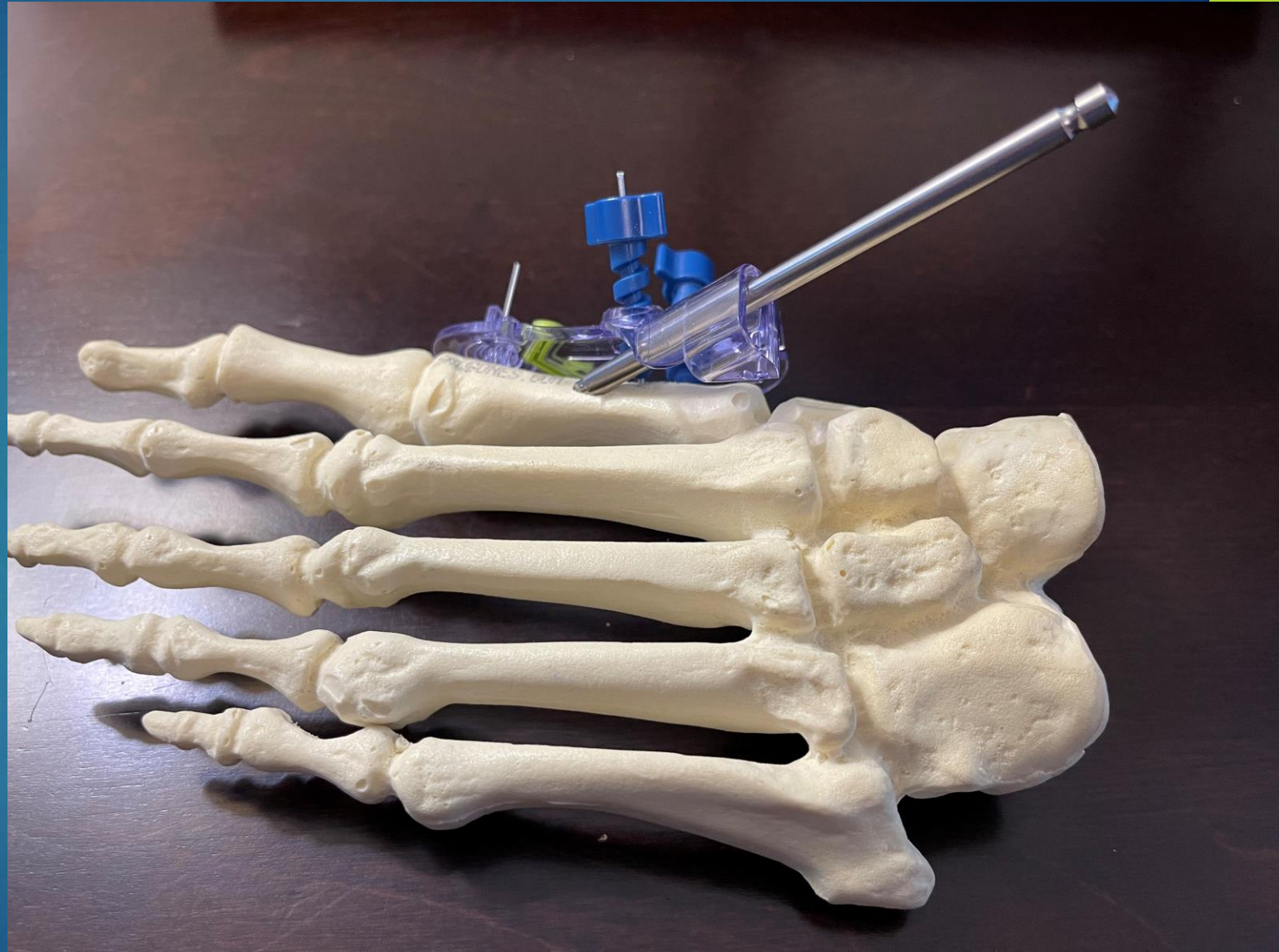
- ▶ Measure the screw length
- ▶ 32mm or greater = 27mm screw
- ▶ <32 mm = 24mm screw
- ▶ Screw guide should be on the bone when measuring.
- ▶ <27mm then need to move the osteotomy guide more proximal



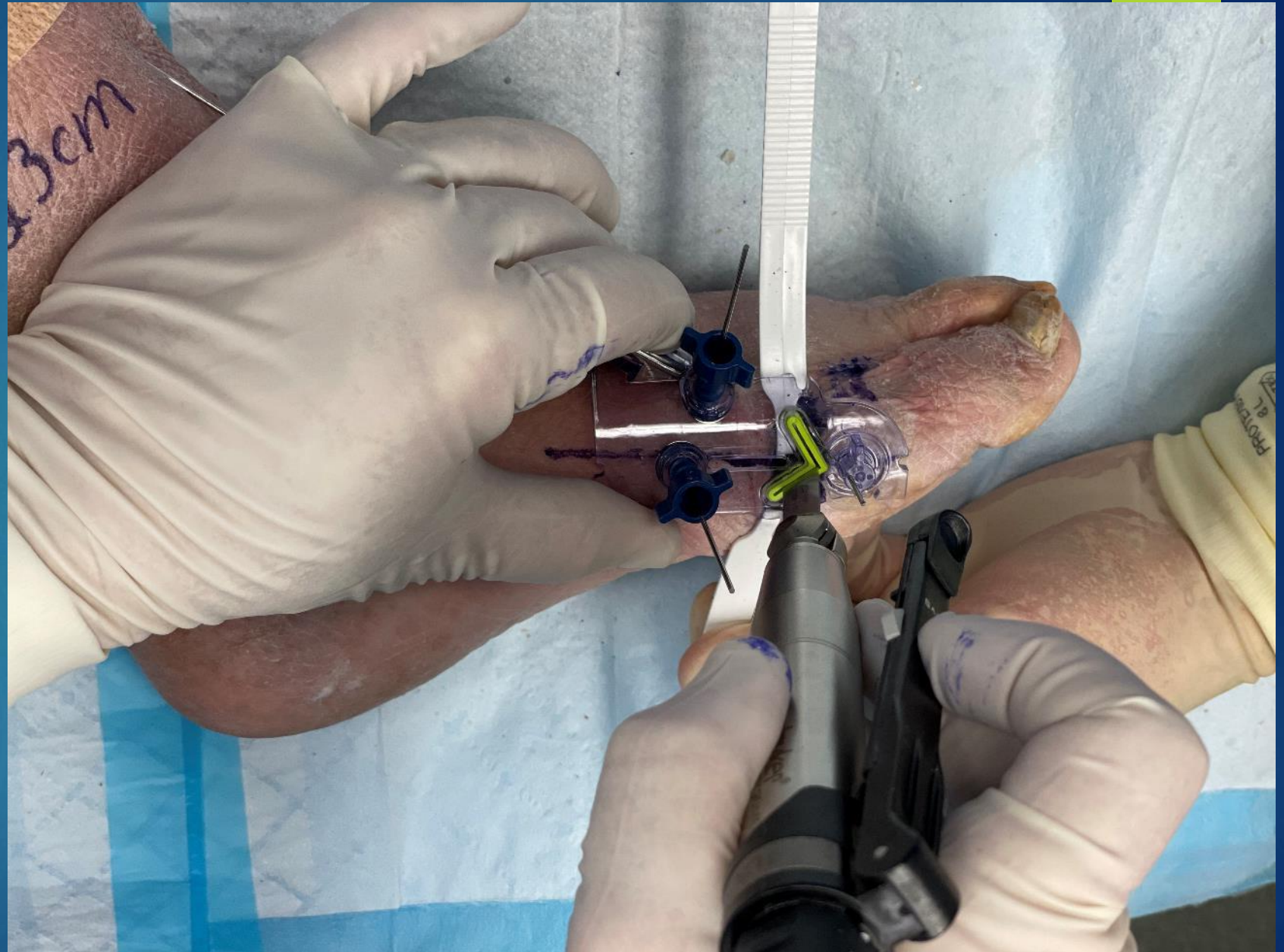
- ▶ Drill/Countersink
- ▶ Bury drill to positive stop



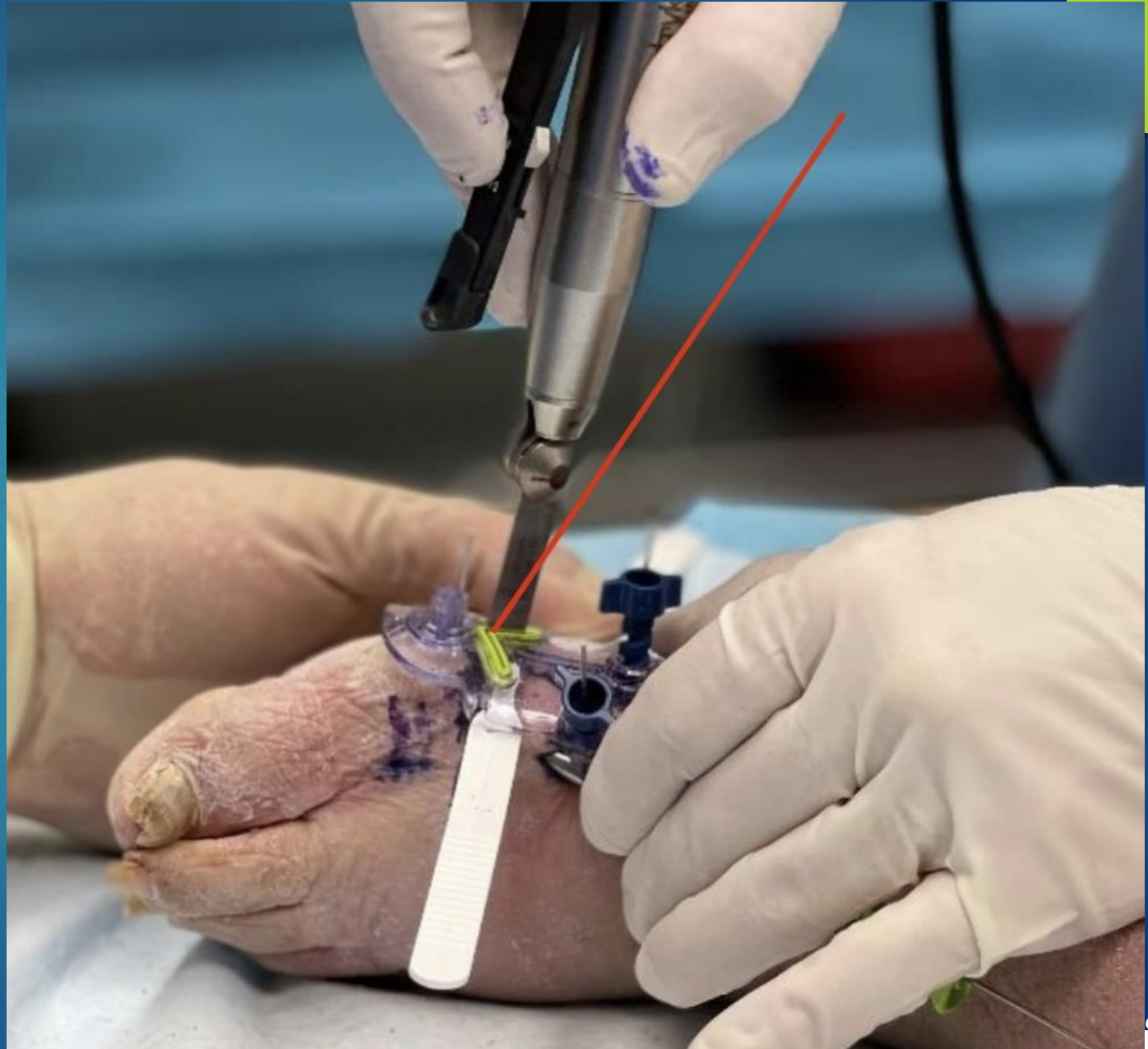
- ▶ Disconnect drill and leave drill in place
- ▶ Remove guide wire



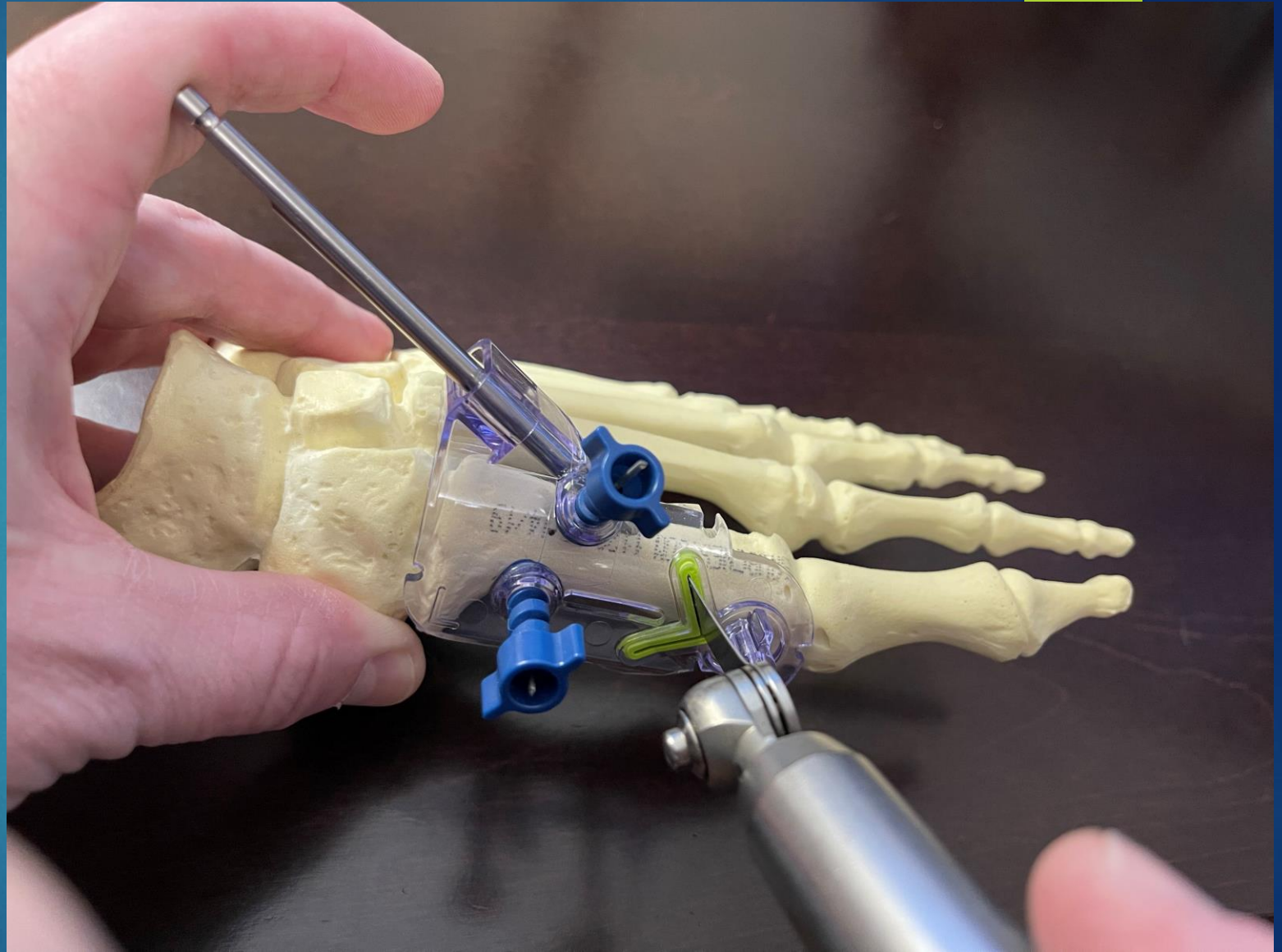
- Retract the skin
- Perform osteotomy



- When performing the osteotomy, stay parallel to k wire number #1 as shown.
- Don't angle the sagittal saw as shown in red
- Stay Dorsal with the Dorsal cut to limit damaging plantar bone shelf

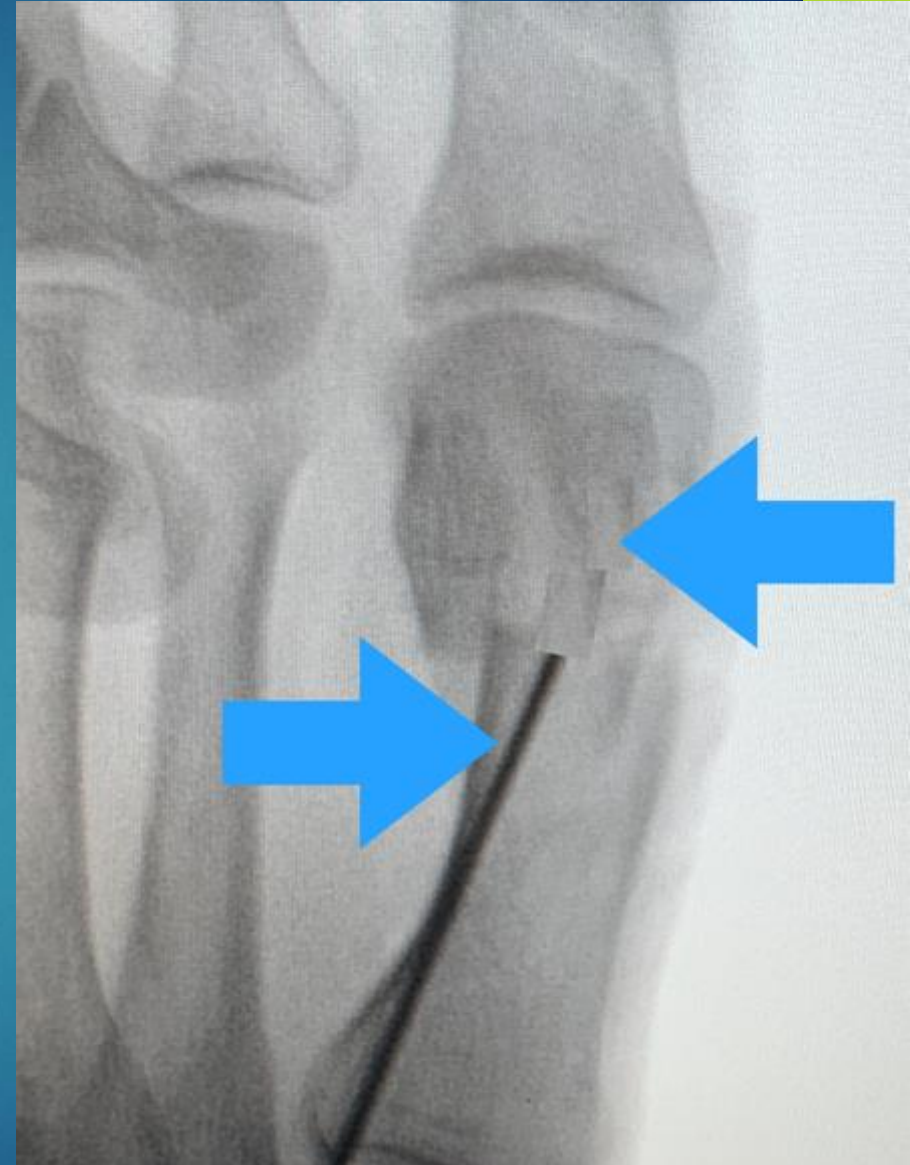


- When performing the osteotomy, hold the top of the drill to keep it from backing out.





- ▶ Correct the deformity by distracting the hallux and moving the 1st metatarsal head lateral while at the same time pushing medially on the midshaft of 1st metatarsal
- ▶ Utilize a freer to assist
- ▶ Confirm desired position under fluoroscopy.



- ▶ Insert the Guide Wire into the drill and advance just into the 1st MPJ.
- ▶ Insert temporary fixation medially



Confirm position and
no gapping of the
osteotomy

Remove Drill and
keep guide wire in
place



- Insert a 3.5mm screw
- Confirm the screw position with fluoroscopy



- ▶ Resect the medial bone shelf.
- ▶ Remove the Guide Wire and temporary fixation.
- ▶ Flush and close incisions.



Post op



Post op



Post op



6 weeks post op - Patient 1



6 weeks post op - Patient 2



6 weeks post op - Patient 3



6 Weeks Post op – Patient 1



6 weeks post op – patient 3





Packaging

Single SKU: RI-2427-C for left and right feet, any size foot



Outer tray = 10" L x 5.3" W x 1.75" H

Bottom inner tray – two osteotomy guides (L and R), cannulated T10 screwdriver



Upper inner tray – screw guide, targeting guide, retractors, implants, 3 K-wires, guidewire, drill bit

Surgeon Testimonials



- “The best part is the guide incorporates the osteotomy and guide pin for screw all in one”
- R. Lemmenes, DPM
- “Docs will use it. Patients will love it.” - J. Hilario, DPM
- “MIS is a big market. This is better than any other system out there.” - M. Rivera, DPM
- “The Guide will solve precision problems.” - E. So, DPM
- “A simple reproducible instrument guided MIS hallux valgus system.” - A. Ferguson, MD
- “Really like the product; it's very innovative.” - T. Holmes, DPM
- “Like the sagittal saw. Like the targeting guide.” - J. Shih, DPM

