Forus Health
Technology delivering care

3nethra aberro Product Demo and training

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Product Description

Handheld Auto Refractometer

- Automatic capture within a few seconds
- Based on advanced wavefront aberrometry technology
- Works for children to adults (above 5years)
- Simple and intuitive UI
- Capture in normal ambient lighting conditions
- Lightweight and easily transportable

Product specification

Spherical Measurement Range	-14D to +14D, increments (0.25D)
Cylindrical Measurement Range	-7D to 0D, increments (0.25D)
Axis Measurement Range	0 to 180 degree, 1 degree increment
Min Pupil Diameter	2.5 mm
Vertex Distance	19.5 mm
Patient Age Range	Above 5 years
Accommodation control	Low spatial frequency sinusoidal grating with Gaussian envelop
Technology	Wave-front Sensing
Measurement Time	<5 seconds per eye
Battery Life	8 hours, fully charged (to charge 4 hours)
Power source	5V DC Micro USB A ,Li-ion battery
Display / Connectivity	3.5” Color touch screen / USB and Bluetooth
Weight / Dimension	650 g / 8.9” X 7.5” X 2.9”
Internal Storage Memory	100 measurements (After 100 Measurements the data will erase automatically)

Instruction to the Operator

- Ensure the below points before taking readings
- Place the target(provided with the package) at 4 meter distance.
- If there is a space constraint use the mirror at 2 meter distance(target will be behind patient max possible distance)
- Avoid bright light above patient.
- Aviod sun light direct exposer to patient eye
- Place the target at centre of the device with 4 meter distance(while doing measurement with stand)
- Don’t block left eye while taking measurement with Right eye(vice versa)

Instruction to the Patient

Non-Dilated Eye:

- Don’t look into the device
- Look straight
- Look far to see the target
- Wide open the eye

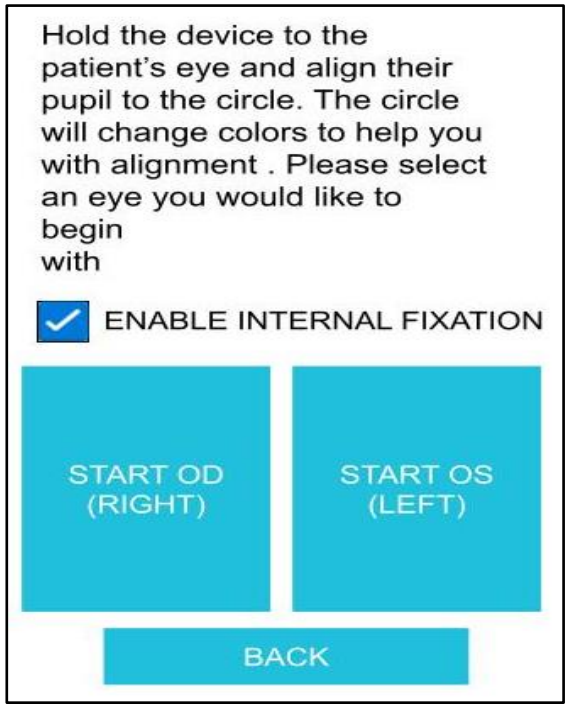
- This instruction is important to get patient cooperation and accuracy of reading.
- Especially for Patient below 20 years, their eye can accommodate easily.
- For patient with small pupil – wide opening of eye will help

Dilated Eye

- Enable internal fixation for the dilated Eye's before taking reading.
  (make sure to un check the box while normal use)

- Inform the patient to look inside the internal fixation target and Close the other eye using hand as per the below image

- Look into the device
- Look inside the internal fixation of the centre
- Look into the red dot
- Wide open the eye



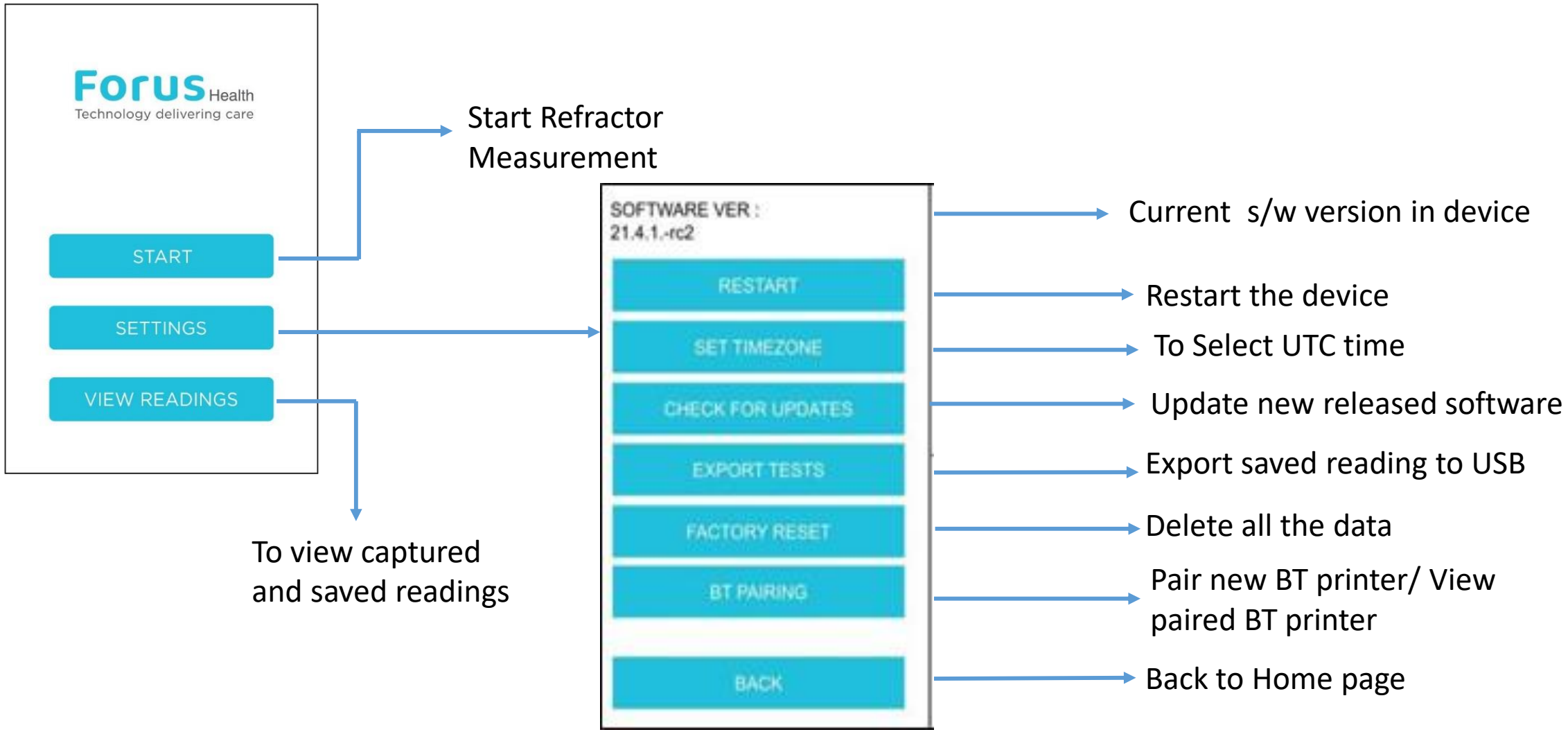
Accuracy based on clinical evaluation

- 3nethra aberro achieves 95% accuracy compared with desktop auto refractor.

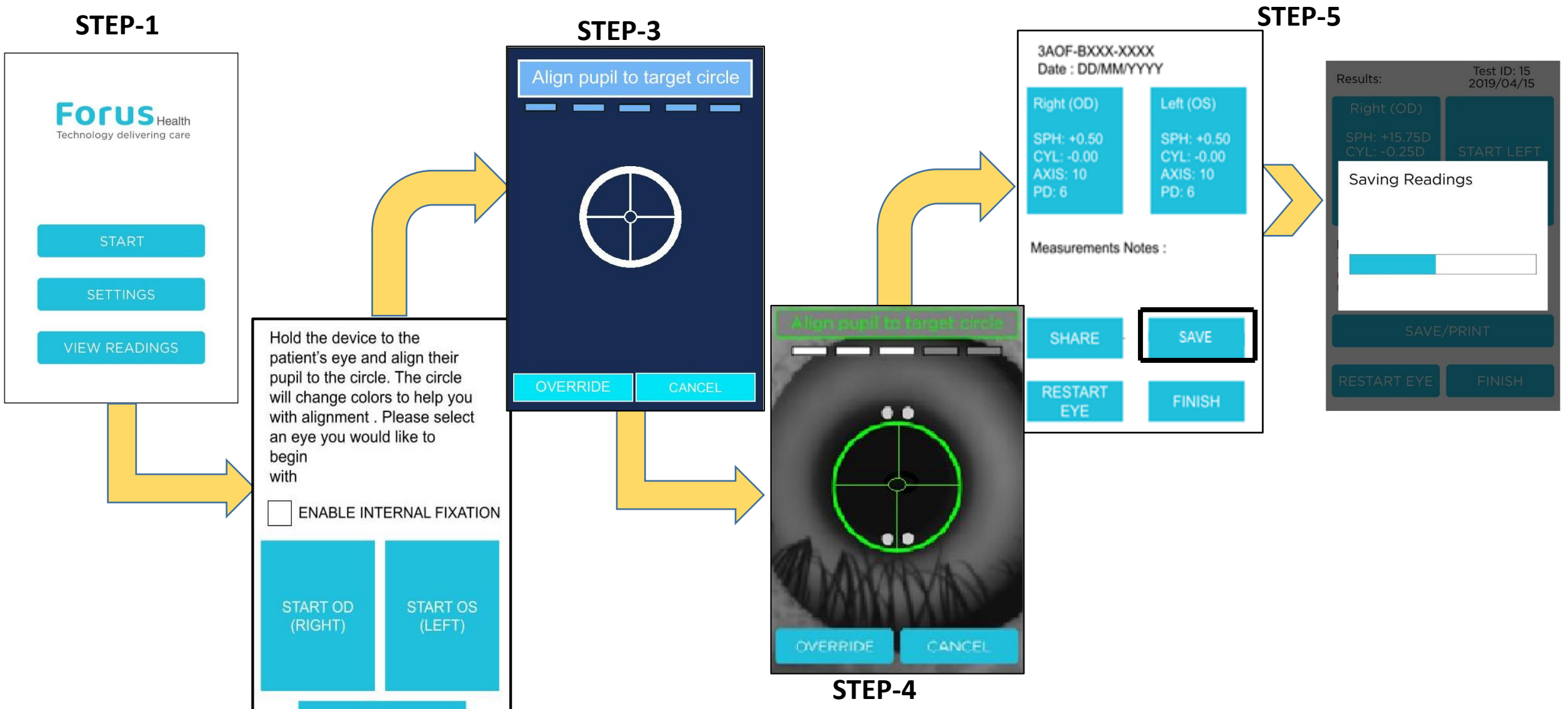
- 3nethra aberro achieves 90% accuracy compared with subjective refraction.

- Publication – Clinical Evaluation of 3nethra aberro handheld autorefractrometer(JOVR-Journal of ophthalmic vision and research)

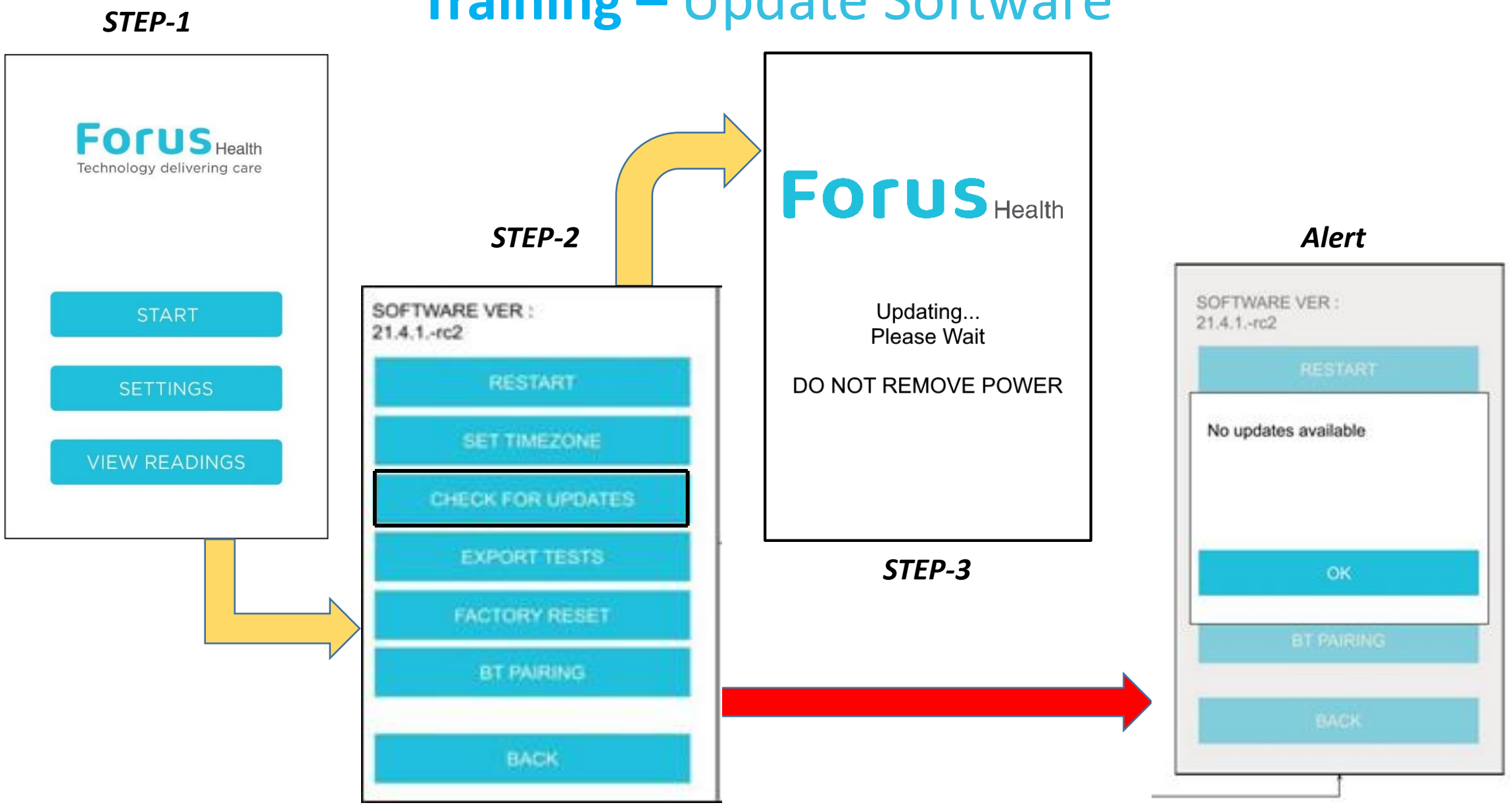
Training - UI Features



Training - How to take, save and print the readings?

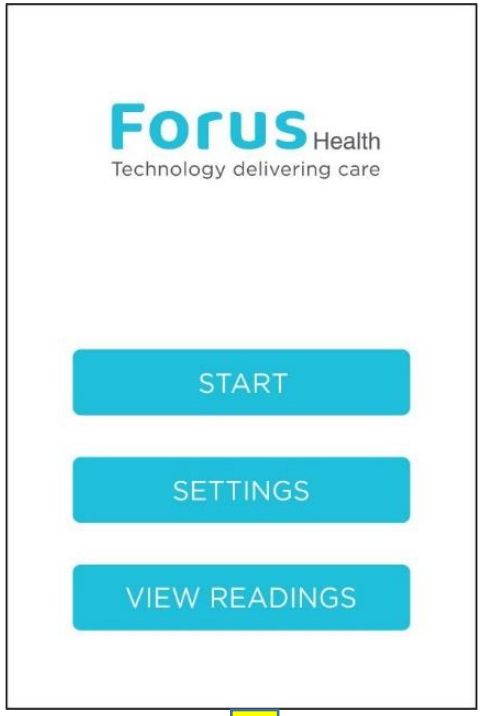


Training – Update Software

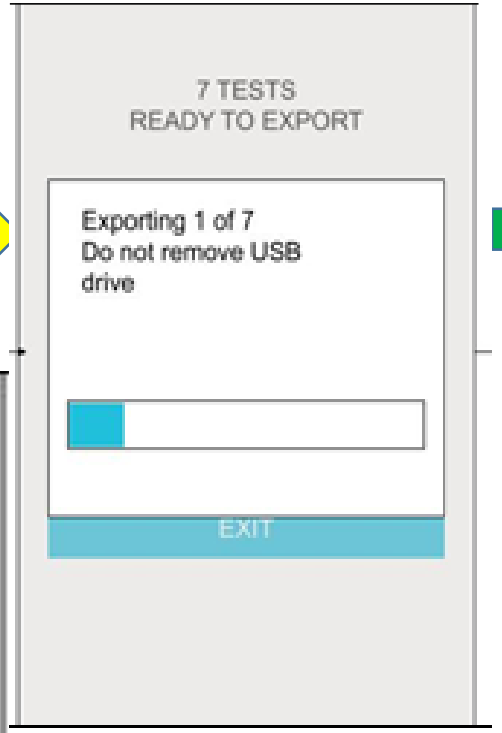


Training – Export Tests/Saved Data

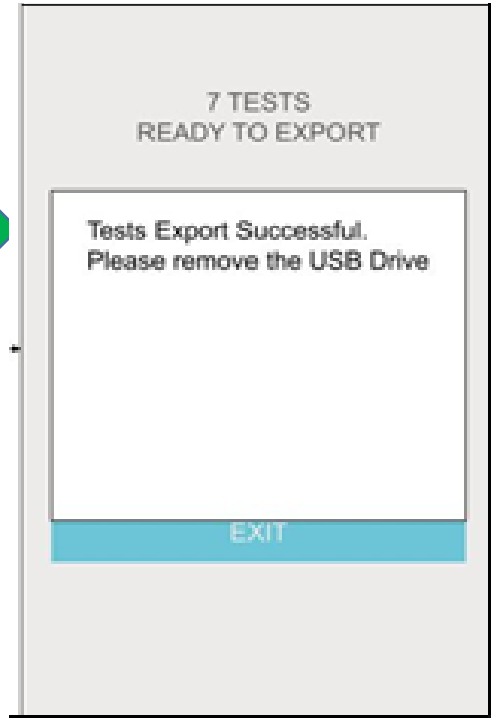
STEP-1



STEP-2



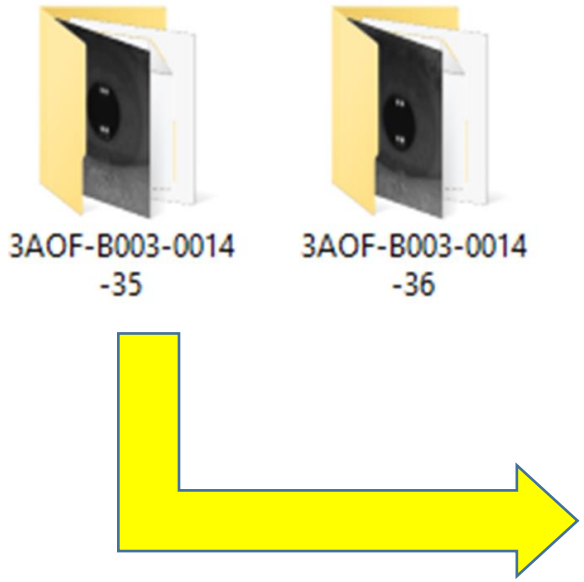
STEP-3



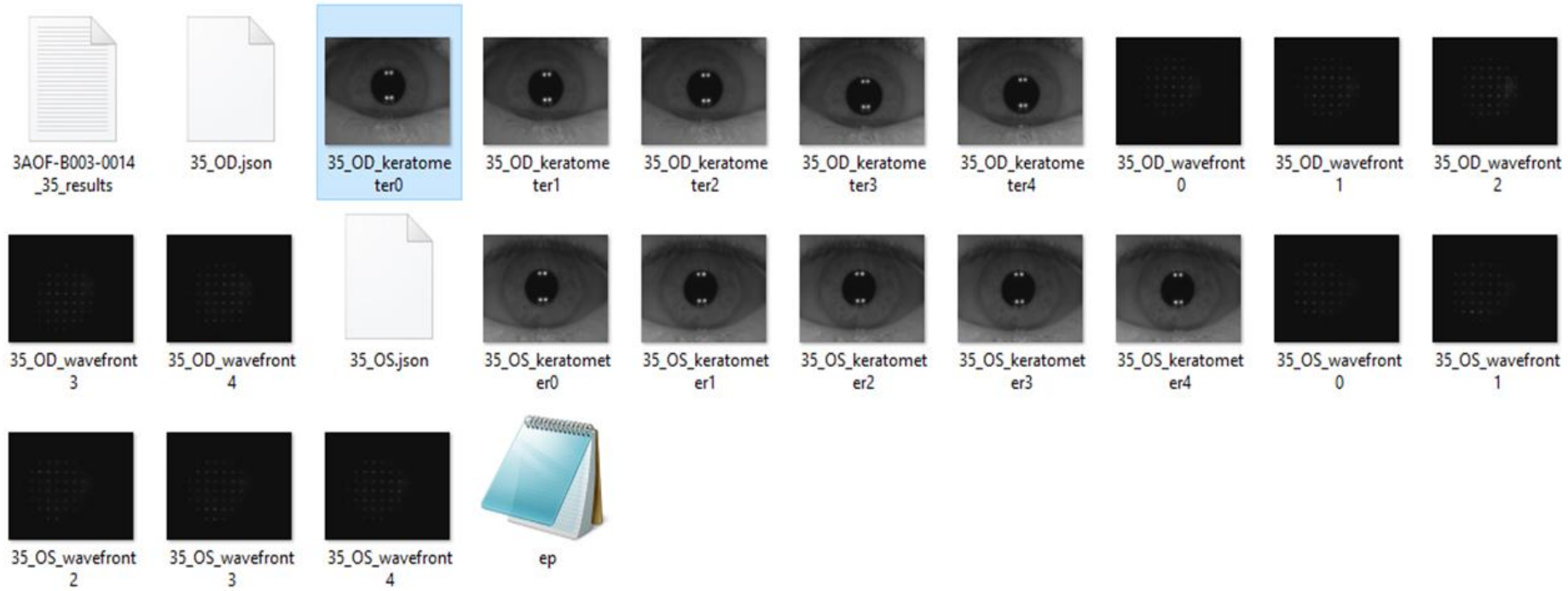
STEP-4

Training – Export Tests/Saved Data

STEP-1



STEP-2



Note: The device will capture five images for each eye. Device shall be considered best three images out of five images for the refractive error calculation

Training – Exported Tests

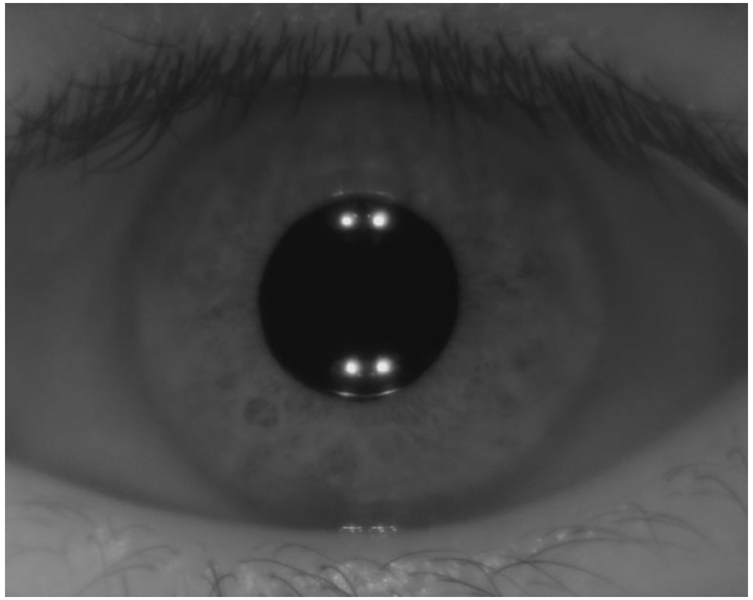
STEP-1

FORUS HEALTH

Device ID: 3AOF-B003-0014
Test ID: 35
UTC Date/Time: Sat Jan 1 00:16:54 2000

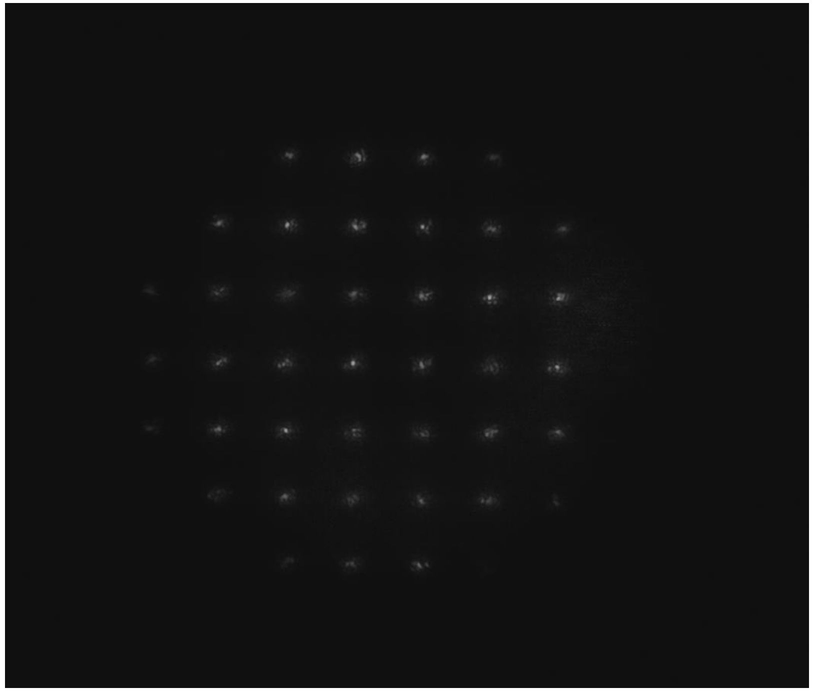
Eye	Sphere	Cylinder	Axis	Pupil Diameter
Right (OD)	-2.75 D	-1.00 D	41 degrees	5.0 mm
Left (OS)	-2.50 D	-0.25 D	135 degrees	4.8 mm

STEP-2



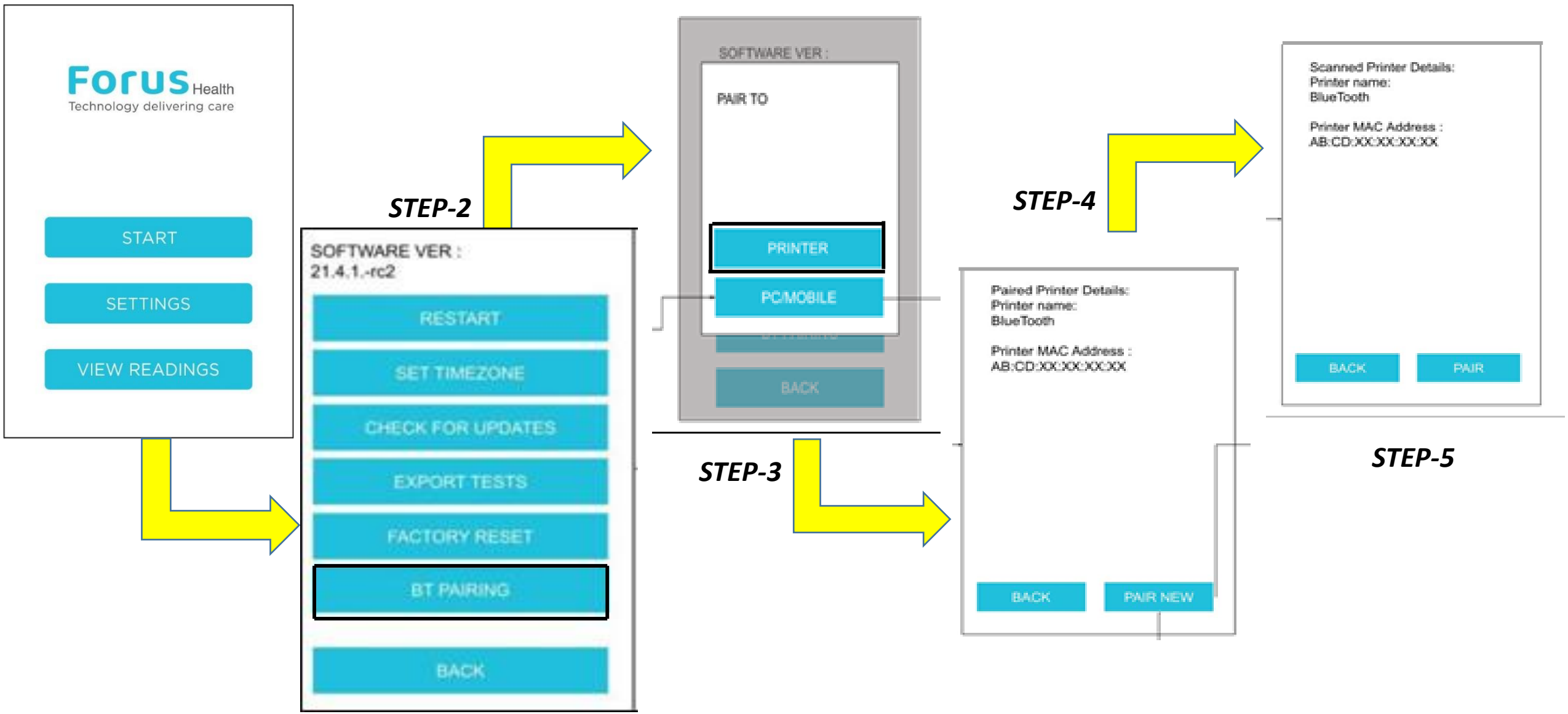
Keratometer

STEP-4

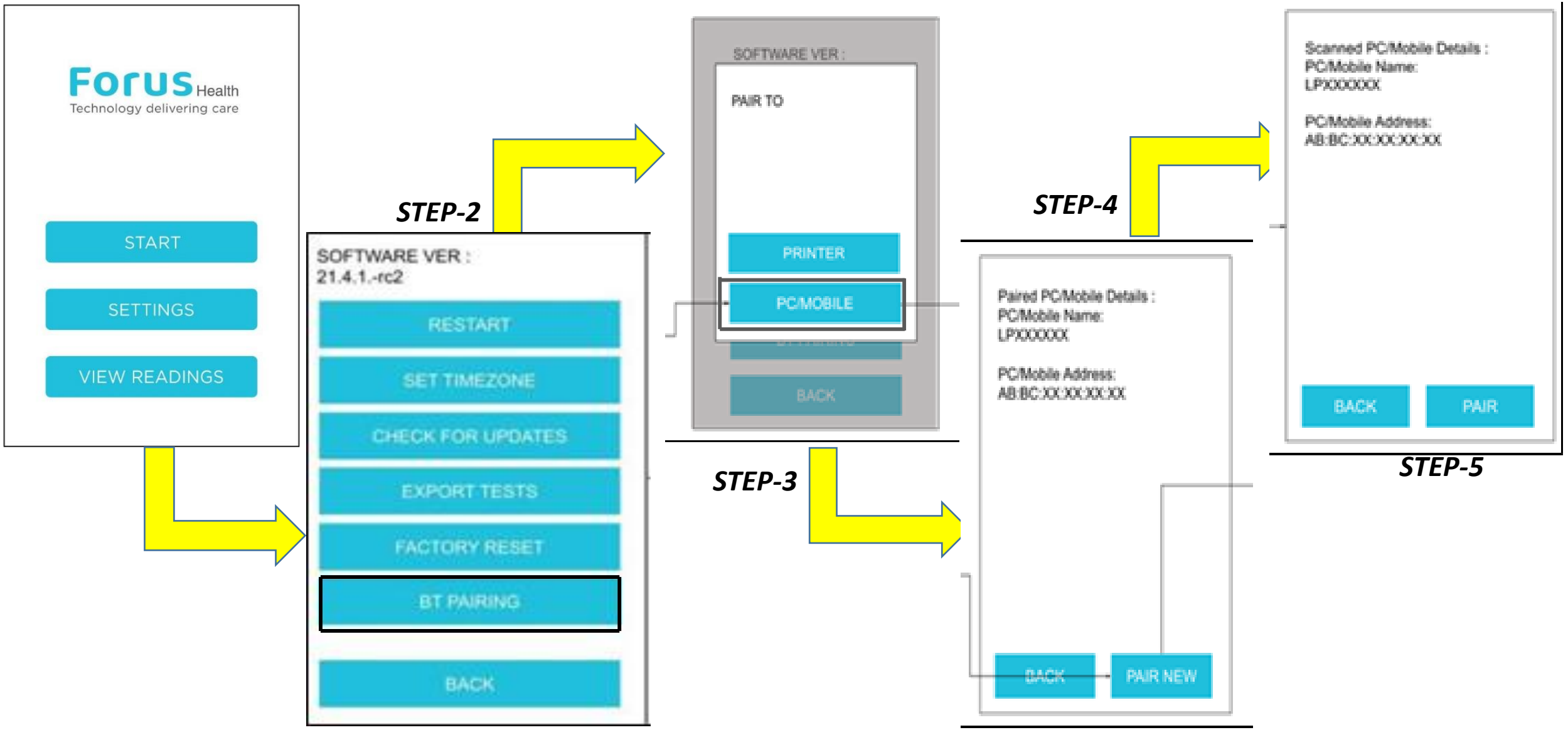


Wave front pattern

Training –Connecting Printer to the Device

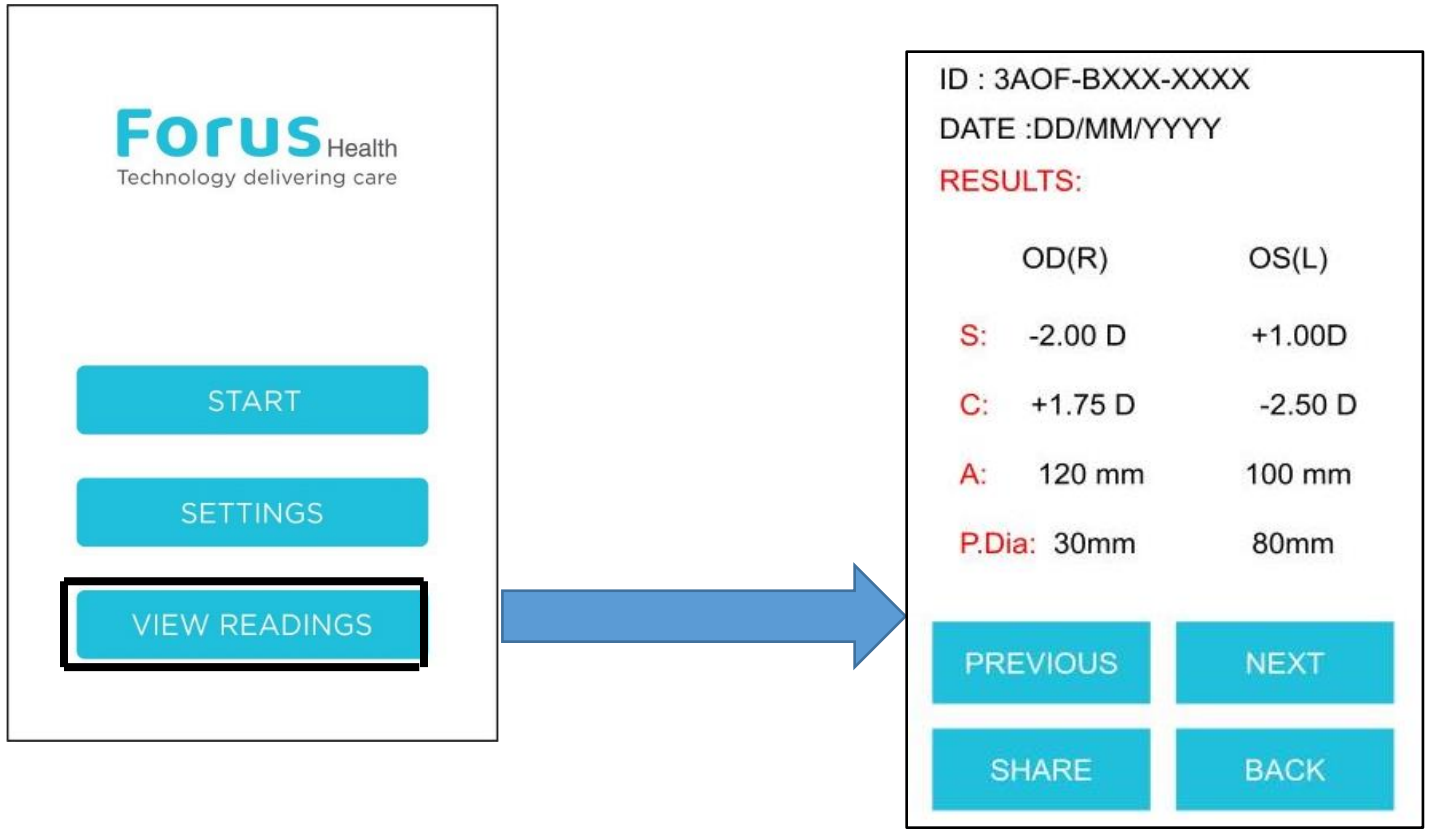


Training – Connecting to PC/Mobile to the Device



Training – View Readings

STEP-1



STEP-2

Do’s and Don’t – Operator Position

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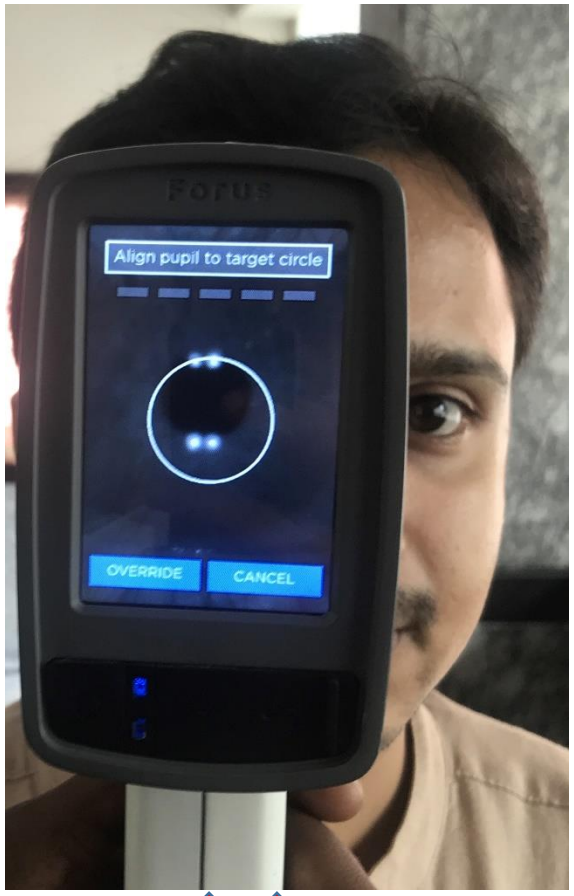
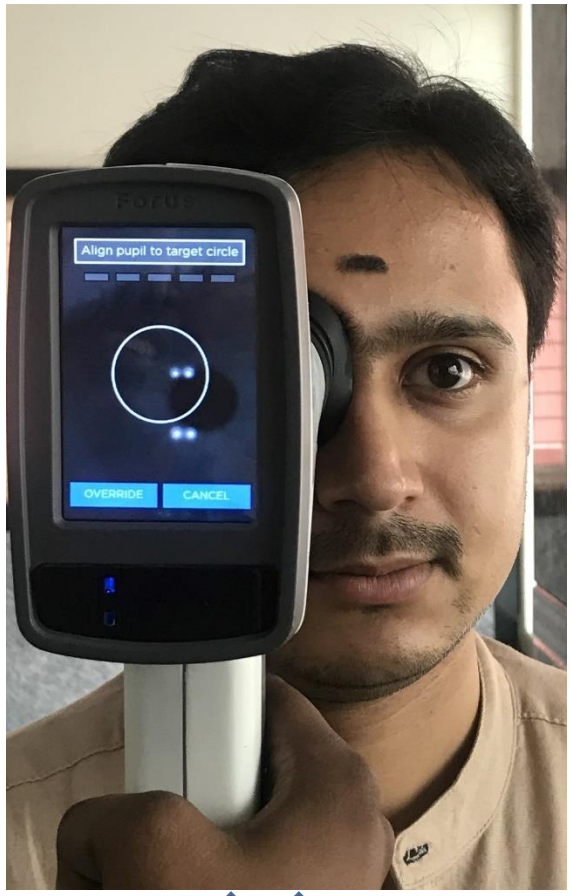
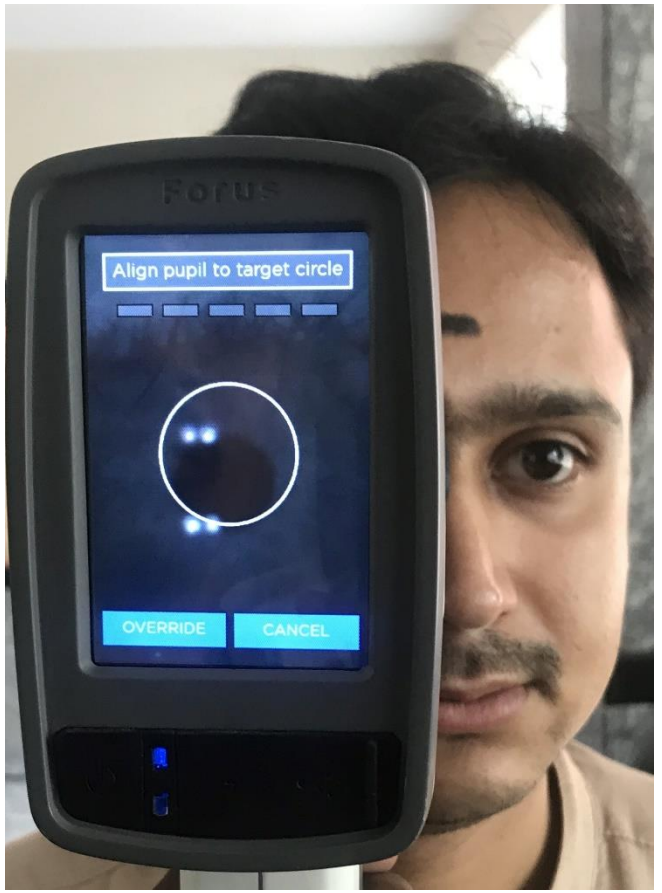
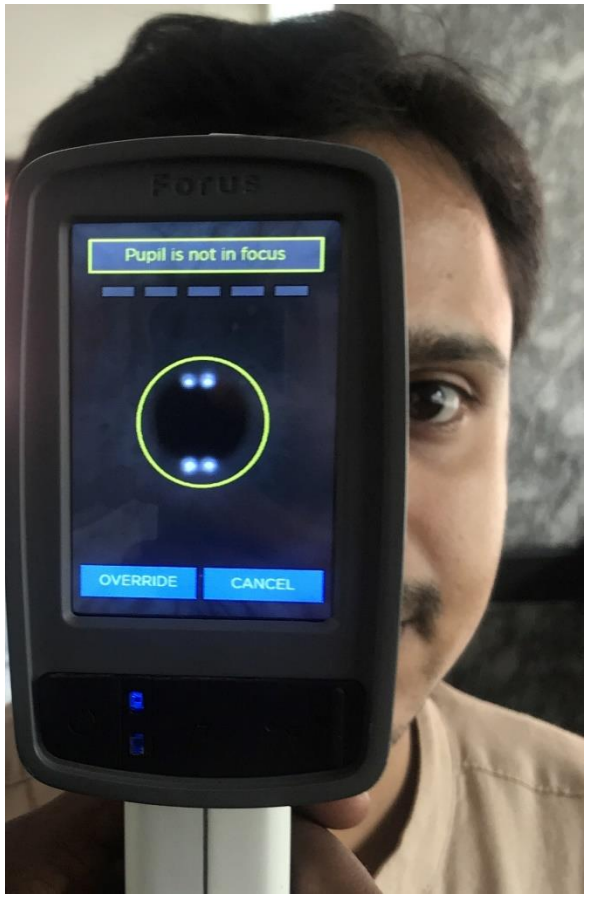
- Operator should not block the long distance view of patients.

Do’s and Don’t – Align the Pupil









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- Align the pupil to the centre of the white circle

Patient not cooperating – How to find it

Do’s and Don’t – Device position

✖ ✓ ✖

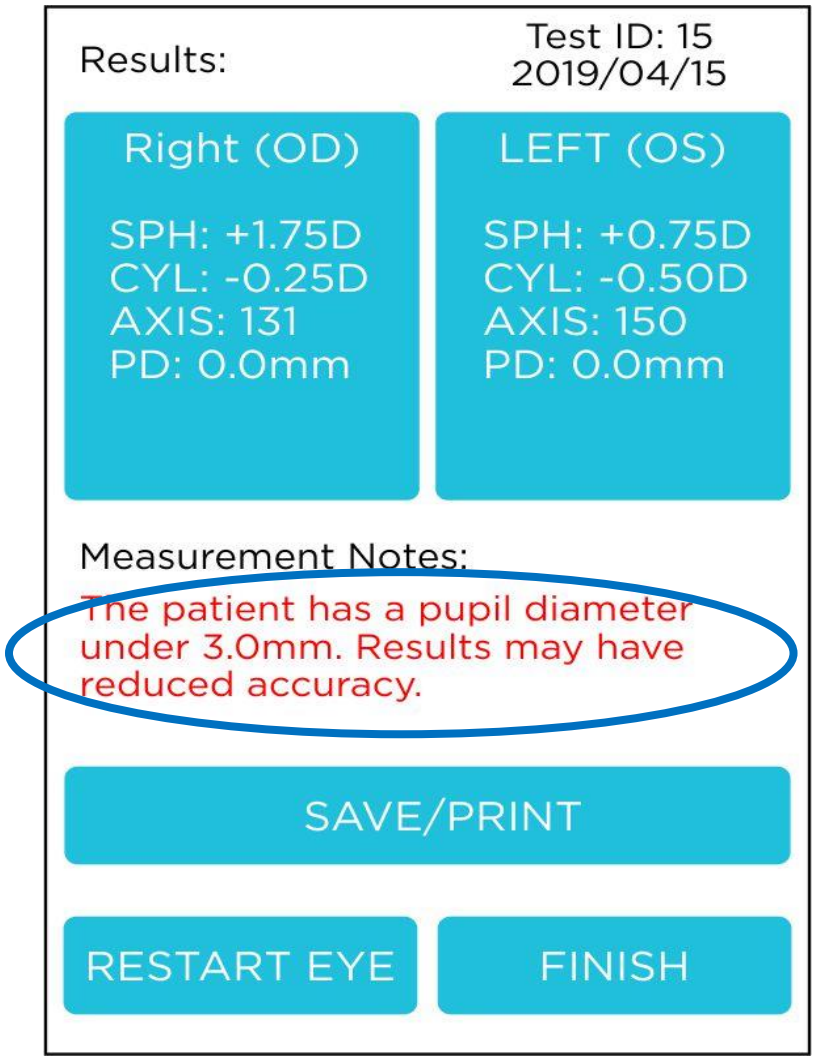
- Operator should position the device straight to the patient axis.

Special Note

- If the message appears as the circled are ,for the patient with pupil diameter less than 3mm dia results may have reduced accuracy of 0.5D to 1.5D – Spherical readings

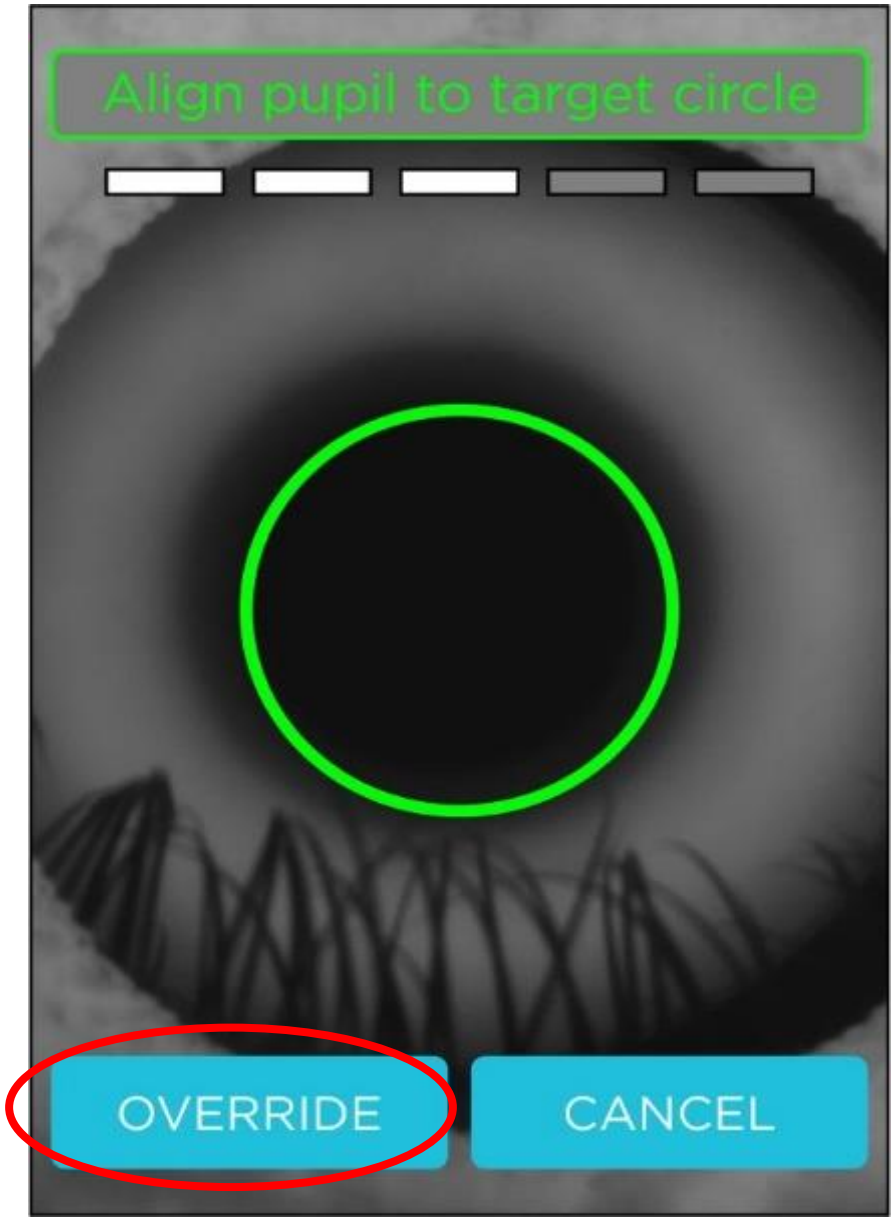
- During this time take the readings again by dimming the lights and ask patient to close the eye for sometimes (or using single dilation drop or short dilation mode, if needed)

- For diseased eye and very low pupil eyes – in case of not able to take readings, Pl use override mode with best pupil alignment position without shaking the hand. But the readings will be taken with errors (+/- 1D) and the pupil diameter reading will be Zero



Special Note

- For diseased eye or very low pupil eyes or some eye even after aligned properly not able to take readings, Pl use override mode with best pupil alignment position without shaking the hand. But the readings will be taken with errors (+/- 1D) and the pupil diameter reading will be Zero.



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Thank You

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