

The Urist Version Light Reflex Test

“The Chicago Way”

Martin Urist

(1905-1977)

- Founded and lead "Chicago School " of ocular motility for 30 years
- Legacy today survives in A and V pattern and oblique dysfunction
- Also responsible for the margin to reflex distance measurement in ptosis
- Was a private practice MD and did not train any outside of Chicago
- But In Chicago and Midwest he was massively influential

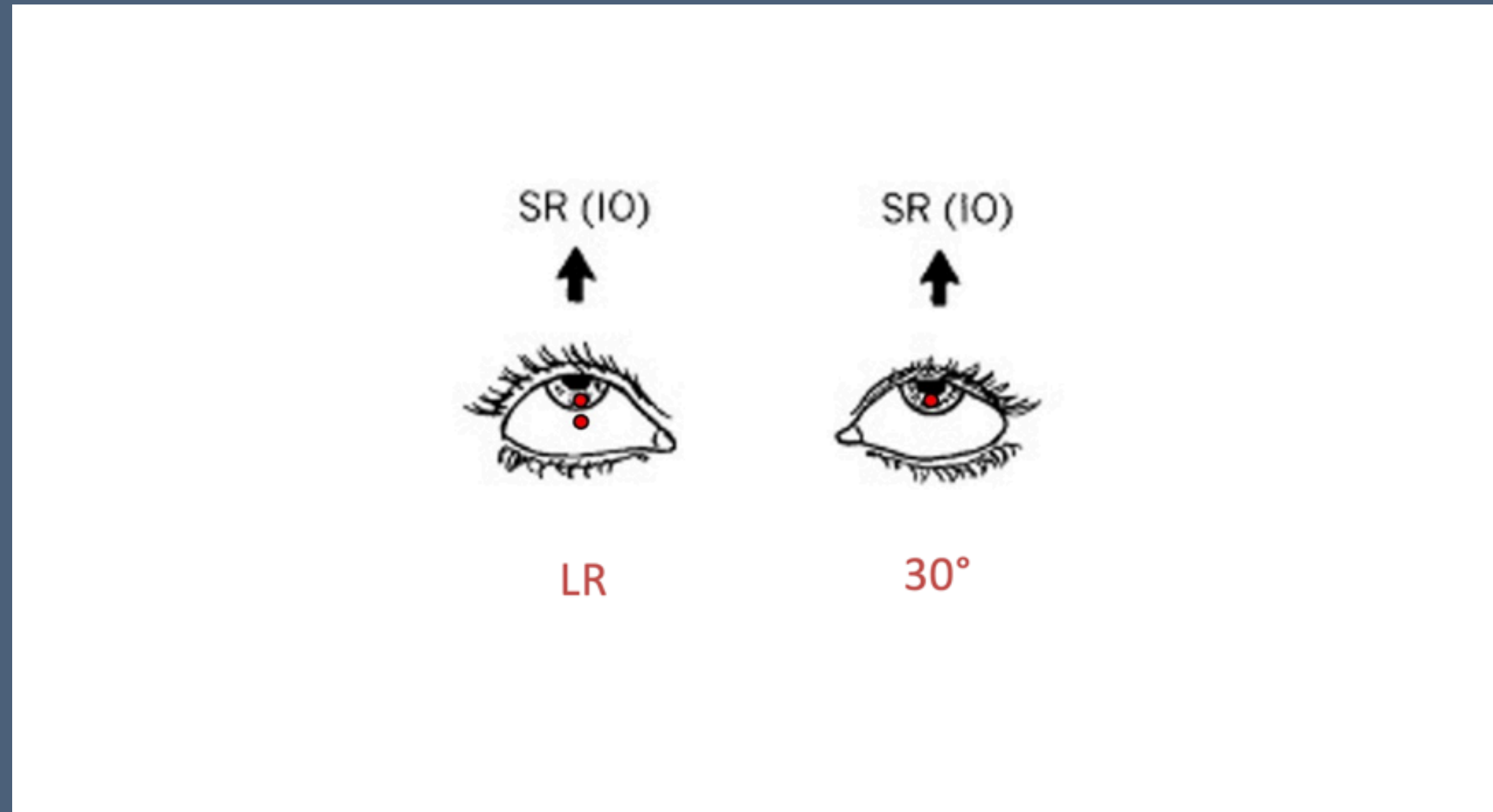


Dr. Urist was a home-grown physician from the University of Illinois. He graduated from UI medical school as a GP, returned at an ENT resident in 1936, then as an ophthalmology resident in 1941. He remained on as an unpaid volunteer 2+ days a week commuting from Michigan where he lived and had his private practice until his death in 1977.

Marilyn Miller MD

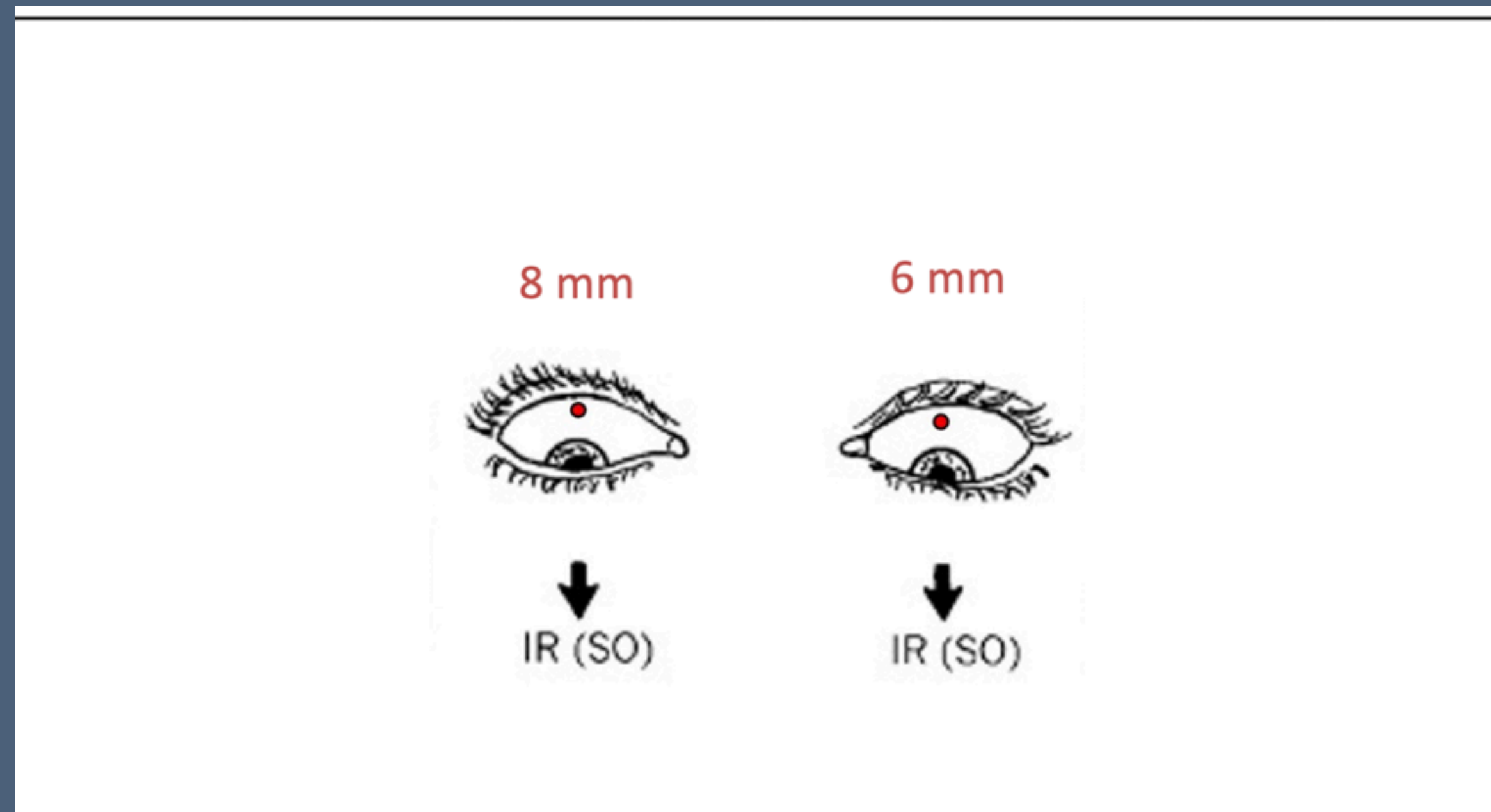
Documenting:

- In secondary gaze, the corneal light reflex can fall 3 places. (over the iris, at the limbus, or over the sclera)
- If the light reflex falls on the iris
 - Measure in degrees from pupil center, just like Hirschberg light reflex
 - Each mm is 7-8 degrees, pupil margin is 15 degrees and mid iris is about 30 degrees
- If the light reflex falls on the Limbus it is indicated Limbal Region (LR)
- If the light reflex falls on the sclera it is described in mm from limbal border

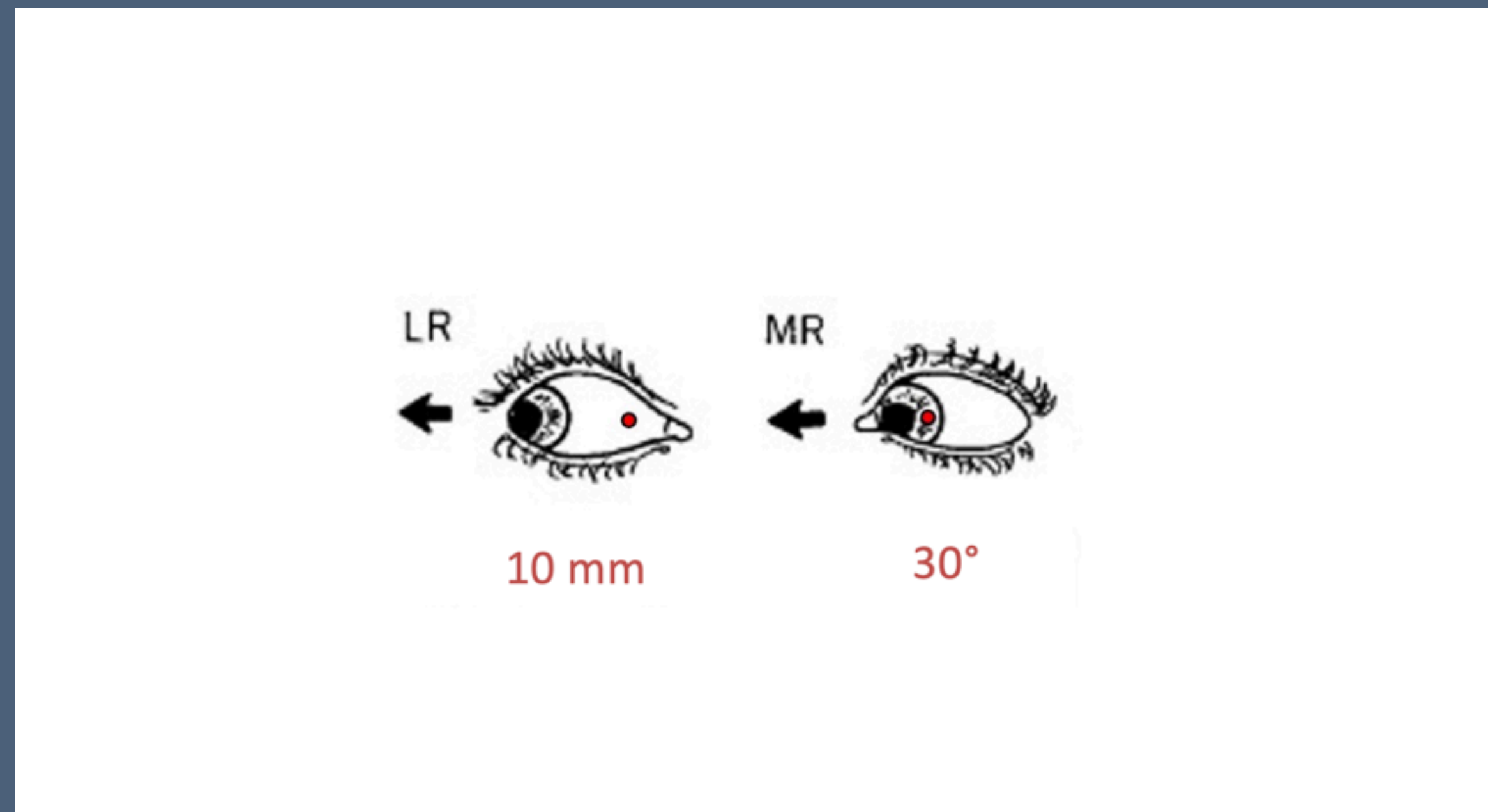


Normal Elevation : 30 degrees to limbal region in children.

(in adults elevation reduces to about 15-20 degrees)



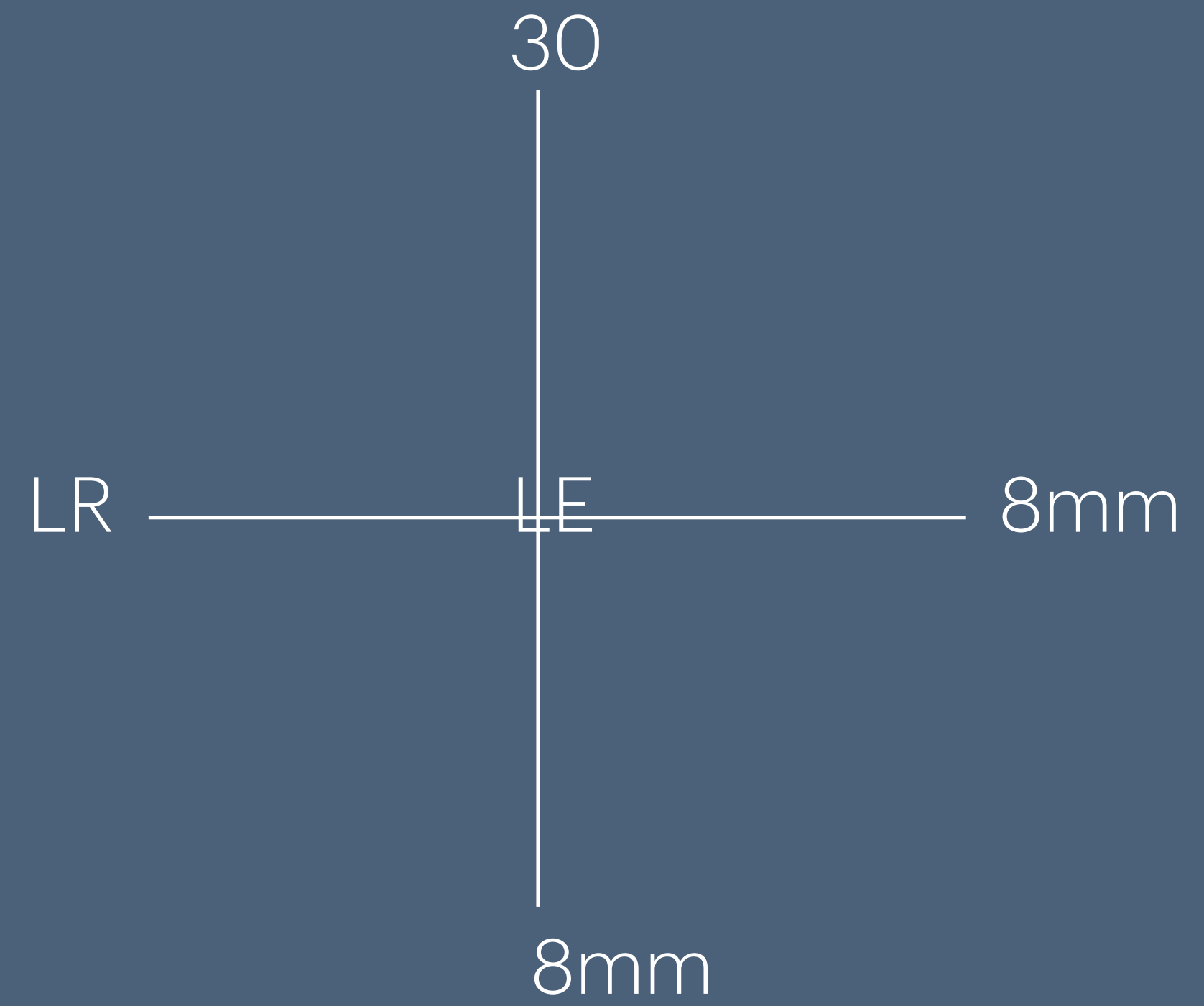
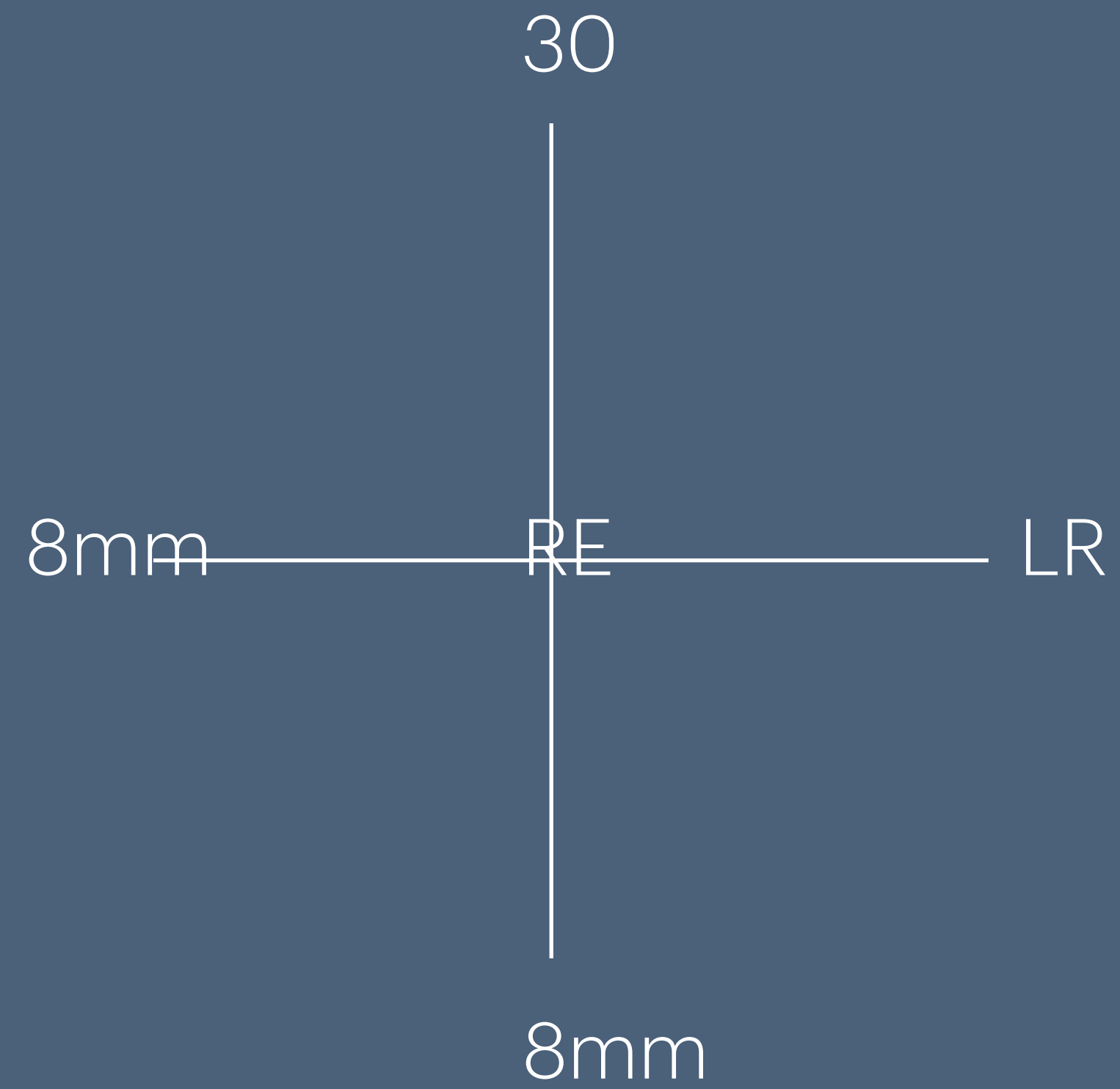
Normal Depression: is 8-10mm from Limbus onto sclera



Normal Abduction and Adduction in Right Gaze

- Abducting places light 6-10 mm behind the limbus on the sclera
- Adducting places light 30 degrees to Limbal Region of Cornea

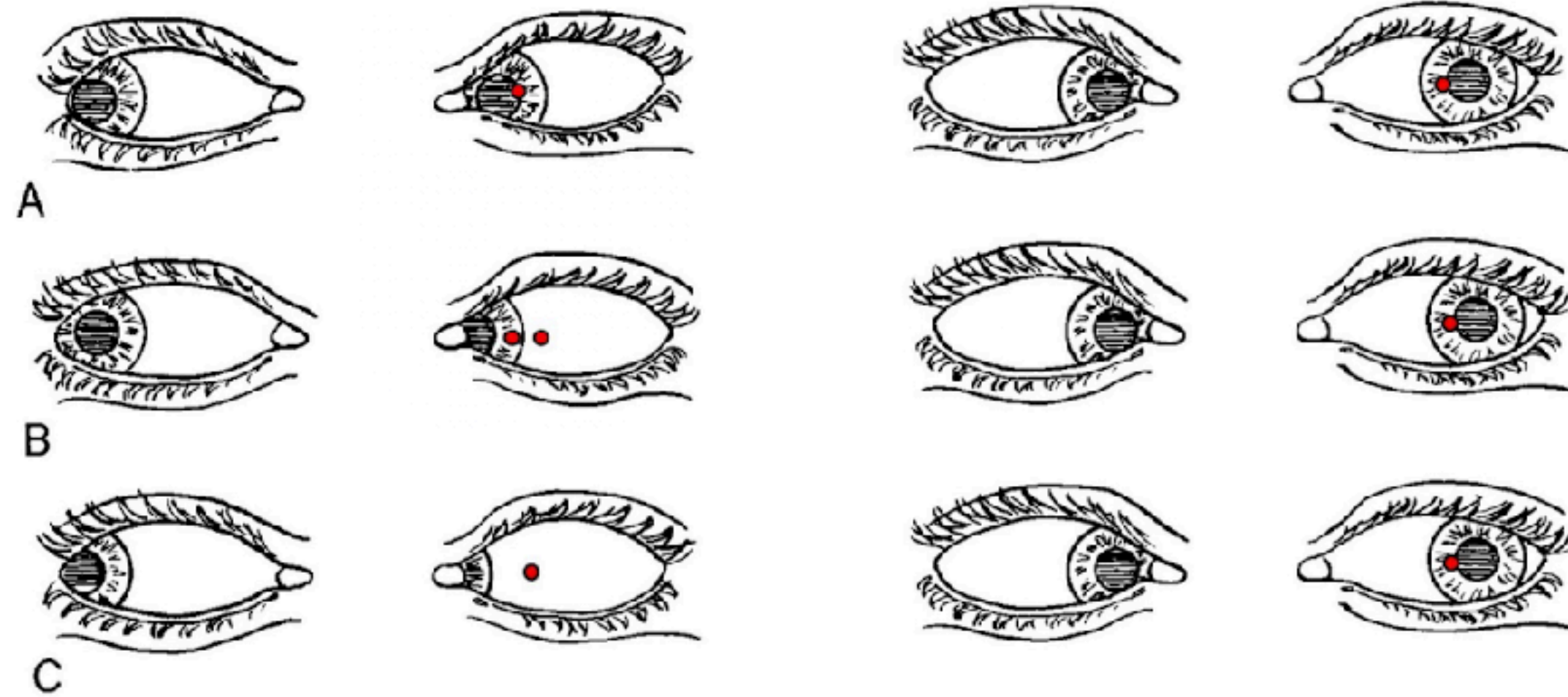
So this is the documentation for a normal exam.



Interpreting:

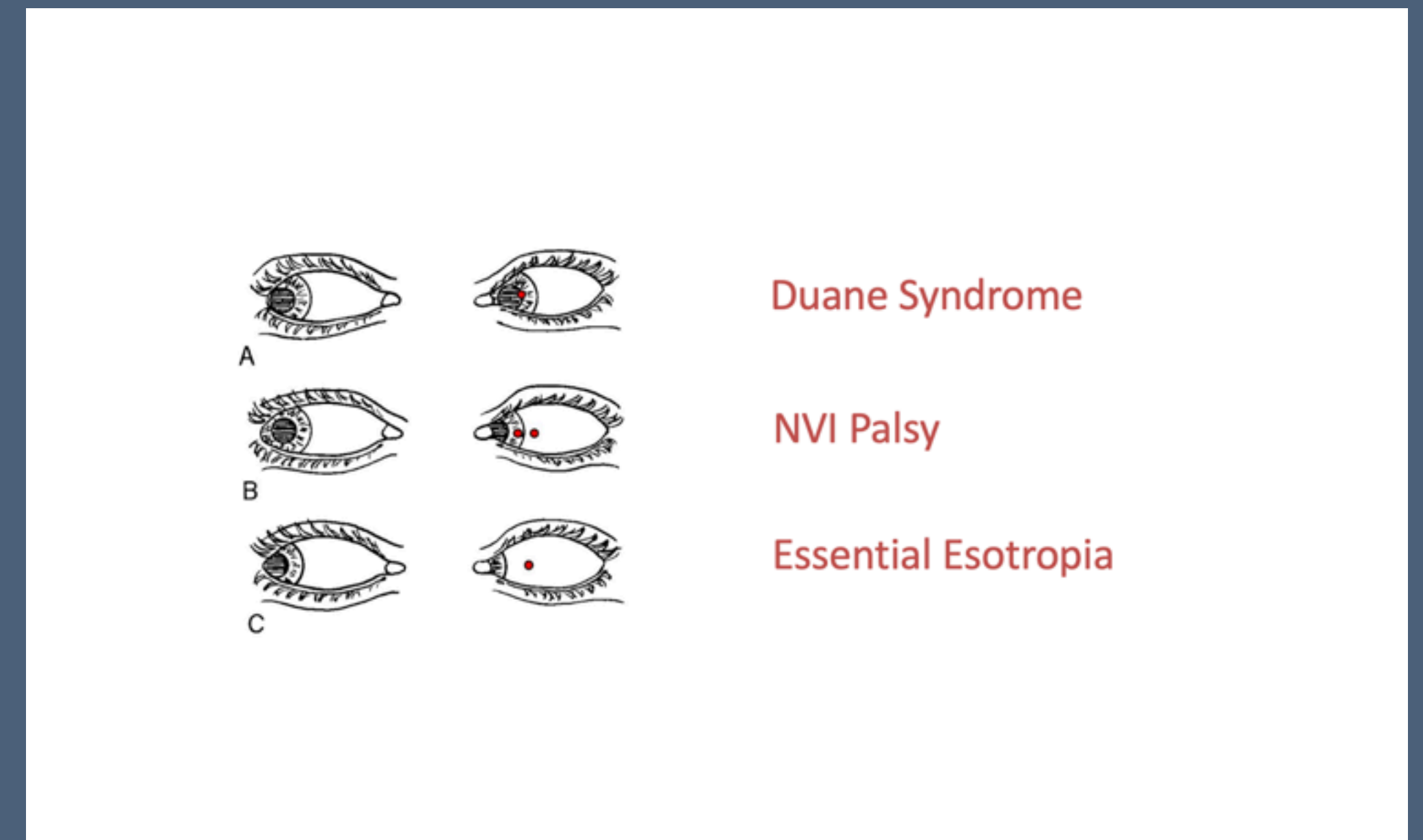
- Once you capture the data, you are not just comparing to normal range, but also comparing right to left and past to present.
- It provides an analog evaluation of the EOM that is surprisingly sensitive and reproducible.
- It is an extremely useful way of thinking about cases of incomitant strabismus often requiring less time and effort than traditional Parks prism cover testing while providing similar information.
- I use Urist for diagnostic evaluations, still using Parks alternate cover testing surgical planning.

It can be very useful to look at Adducting eye when interpreting complex incomitant strabismus.



Look at the Adduction in eye with Abduction limits

- Duane's syndrome will always show adduction limitations. This is often easier to observe than tissue narrowing, retraction or upshoots.
- Normal adduction is seen with any degree LR weakness, ie. CN6P
- Congenital Esotropia particularly with cross fixation typically shows super normal adduction



Surgical Planning

- Knowing the limitations of individual gaze can dictate what surgery to do.
- If abduction is severely limited, best not to weaken further or operate on antagonist muscle. Better to go to contra lateral eye.

- I have purposefully left oblique assessment from this lecture
- It is not something Urist specifically taught,
- Many thanks to Mark Greewald MD from University of Chicaco. His Costenvader lecture on Urist measurements in 2023 reminded me I should pass this knowledge along .
- The drawn von Noorden and Maumenee slides are from that talk.
- I will close with his final slide from that talk:

Finally, I have to acknowledge that you will probably encounter significant resistance from colleagues with whom you share Urist measurements if their tribal loyalties in strabismus lie elsewhere, which is to say, virtually everyone in the field. This has never discouraged me from using the test, and I hope it won't prevent you from giving it at least an open-minded trial. Though making a transition like this can be challenging in mid- or late career, I think experienced practitioners will be quick to appreciate the benefits. I truly believe that a small but enthusiastic cohort of new users could really turn the tide here.