



All about Static Retinoscopy

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Authors' contributions

This work was carried out in collaboration between both authors. Author PHC had wrote the introduction and conclusion part of this article. Author BHS had managed the abstract and literature review along with the formatting of the article. Both authors had read and approved the final manuscript.

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ABSTRACT

This paper explains about introduction, procedures and optics of streak Retinoscopy.

Keywords: Static retinoscopy; cyclodemia; bracketing technique.

1. INTRODUCTION

1.1 Static Streak Retinoscope

It objectively determines the refractive status of the eye "Relative to the point of fixation." It is an objective method and by this method, "Starting point of the subjective refraction" is

being assessed. Eg. During Retinoscopy, if the neutralization is achieved by +4.00 Dsph, on that time, the patient is instructed to look at 6/60 target with +4.00 Dsph and then consequently reduce the power to achieve the ultimate vision.

This procedure is called CYCLODEMIA. It should be remembered that this method is applicable for

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MINUS refractive error purpose. Eg. If neutralization is achieved by -4.00 Dsph, on that time patient is instructed to look at 6/60 target with -4.00 Dsph, then remove the -4.00 Dsph at first and then again place -4.25 Dsph lens. Continue this process until good visual acuity is achieved.

Working distance must be added with the retinoscopic value. The definition of working distance is "Negative Reciprocal". Eg. If neutralized point is achieved with +5.00 Dsph lens, then it will be $+5.00 + (-2.00 \text{ Dsph})$. If working distance is 50 cm, then it will be $(-1/50) = -2.00 \text{ D}$.

1.2 Bracketing Technique

It is a technique by which we can achieve about the working distance lens perfectly. Eg. If during neutralization, we get with movement with +4.00 Dsph and against movement with +4.50 Dsph, then working distance lens will be $(+4.00 \text{ Dsph} + 4.50 \text{ Dsph})/2$. i.e. +4.25 Dsph. This technique is also known as straddling technique [1,2].

2. STREAK RETINOSCOPE: INSTRUMENT

It consist of a plane surface. This plane surface is perforated centrally. Here originating light is situated at below and slight behind. From here the light is originated and reflected from the reflecting surface to the eye. Most of the time, by this Streak Retinoscope, diverging rays are reflected to the pupil. It is a modern instrument by which vergence can be changed by changing sleeve up and down. It means vergence may be from divergence to convergence. But actual basic optical design do not change [3].

2.1 Procedure

Spot Retinoscope create circular point and Streak Retinoscope creates Streak light. So, clinical Significance of Streak Retinoscope is more as compared to Spot Retinoscope. The distance from spectacle lens to far point is always considered in meter and its reciprocal is "Refractive Ametropia in Diopter". Far point is the point which is in contact to the fovea when accommodation is relaxed.

In case of Myopia, far point is located in front of the Retina and in Hyperopia, far point is located

behind the Retina. In Astigmatism, two far points are present.

Streak Retinoscopy is a binocular procedure. The eye level of the patient and clinician should be same. When performing Retinoscopy of Right Eye, patient will be asked to look 6/60 letter with his/her Left eye and vice versa for Left eye. When performing Retinoscopy of Right eye, Right hand should be used and Left hand for Left eye [4].

3. NEUTRALIZATION

It is a particular point actually when fastest movement is achieved by the clinician, as if clinician is thinking that, there is no movement. For neutralization, far point position is very essential. In case of high refractive error, far point distance is high as compared to Low Refractive error. In case of Neutralization, Far point is present on the peephole of the Retinoscopy. Towards Neutrality, brightness and speed of reflex will be highest, because far point will be towards the Neutrality.

4. DISADVANTAGES

- Variation of the working distance
- Accommodative status of the patient
- High against the rule astigmatism
- Angle between patient's eye to clinician's eye.

5. CONCLUSION

By this technique, we can conclude that during Static Retinoscopy, patient is always asked to look at 6/60 letter, otherwise whatever result is obtained will be a misnomer. Working distance must be "added" not "deducted" as the definition of working distance is Negative Reciprocal". Without Static Retinoscopy, fogging technique is impossible because neutralizing point of Retinoscopy is the starting point of Fogging Technique. This technique is applied in both the cases of Myopia as well as Hyperopia [2].

CONSENT

Written consent was obtained from patient as well as from tertiary eye care centers.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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