

"Reconsidering Cycloplegia: Evaluating Agreement Between Near, Dry, and Cycloplegic Retinoscopy in Young Adults"

Sudha Prasad¹, Chiranjib Majumder¹, Pallabi Manik¹

1. Brainware University, 398, Ramkrishnapur Rd, near Jagadighata Market, Barasat, Kolkata, West Bengal

700125

Purpose: The study aims to compare spherical equivalents (SE) of refractive errors in young adults using near, dry, and cycloplegic retinoscopy, and to assess the agreement and bias among these techniques.

Method: A cross-sectional study of 52 university students (mean age 20.98 ± 2.13) compared spherical equivalents from dry, near, and cycloplegic retinoscopy using a streak retinoscope. Cycloplegia was induced with 1% cyclopentolate and tropicamide. Data were analyzed using Wilcoxon signed-rank tests and Bland-Altman plots, with $p < 0.05$ considered significant.

Results: Analysis of 52 participants (104 eyes) showed that Wet Retinoscopy (WR) produced the least myopic readings, while Near Retinoscopy (NR) gave more hyperopic results than Dry Retinoscopy (DR). Significant differences were found between the techniques ($p < 0.05$), and Bland-Altman analysis indicated moderate bias and wide agreement limits between NR and WR, emphasizing the impact of accommodation.

Conclusion: The study found significant differences in SE measurements among NR, DR, and WR, with WR providing the most accurate results by minimizing accommodation. NR showed more hyperopic values than DR, but both non-cycloplegic methods differed significantly from WR.

Key Words: Cycloplegic retinoscopy, Mohindra retinoscopy, Dry retinoscopy, accommodation.