

PHOTOPHOBIA AND CONTRAST POLARITY EFFECT IN PATIENTS WITH ALBINISM AND ANIRIDIA((Chikako Arai¹, Hitomi Nakamura², Koichi Oda³))¹National Institute of Special Education, Yokosuka; ²Low Vision Specialist, ³Tokyo Woman's Christian University, Japan.

Purpose: Patients who show photophobia or glare frequently show contrast polarity effect in which performance changes with contrast polarity of reading materials, ie, black letters on white sheet or white letters in dark background. It is thought that the light reflecting from the reading materials causes scatter at the cloudy ocular media in these patients, resulting better performance in white-on-black or reversed contrast. There are types of patients who do not have cloudy media but show photophobia, such as patients with albinism and aniridia. The purpose of this study is to test the contrast polarity effect in these patients. **Method :** Four patients (2 with albinism and 2 with aniridia) served as subjects. MNREAD-J(Oda et al, 1998) and MNREAD-JK were used to measure reading performance of the patients. MNREAD-JK is a version of reading acuity charts consisting of 2, 3 or 4 letter Hiragana words. One set of charts were printed in black letters on white background (B/W) , and the other set was printed in white letters on black sheet(W/B). Print size varied from 1.3 logMAR to -0.5 logMAR in 0.1 step. Subjects read reading materials aloud while reading time and errors recorded. Reading acuity (RA), maximum reading speed (MRS), critical print size (CPS) were calculated and compared. **Result :** As shown in Table 1, we could not find any clear indication of contrast polarity effect in all four patients. T-test of reading speed gave no statistically significant difference for two polarities in any patient.

Table 1 . Summary of the result

subject	chart	RA logMAR	CPS logMAR	MRS cpm
A (albinism)	B/W	0.5	-	323
	W/B	0.5	-	274
B(albinism)	B/W	0.7	-	118
	W/B	0.7	-	85
C(aniridia)	B/W	0.7	1.0	143
	W/B	0.7	1.1	183
D(aniridia)	B/W	1.2	1.7	46
	W/B	1.3	1.5	34

Conclusion : If we were allowed to generalize from this small sample, there is a type of patients who have photophobia but no contrast polarity effect. In other words, photophobia does not necessarily accompany with contrast polarity effect. Patients with albinism or aniridia but without cloudy ocular media are considered in this category.

---- submitted to Vision '99, 1998/11/28