



the refraction letter

A Monthly Informational Service for the Eye Care Professions from
Bausch & Lomb

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LETTER TO THE EDITOR.

The Refraction Letter has received several requests from readers for more information regarding the determination of the exact null angle for a child who has congenital nystagmus. This determination was briefly mentioned by Dr. L. F. Dell'Osso in his article "Improving the Visual Acuity of the Nystagmic Child." (TRL, February 1975.) Dr. Dell'Osso's elaboration appears below:

The determination of exact null angles (version and vergence) for an individual with congenital nystagmus is accomplished by electronically measuring eye position and motion while the individual views targets of known visual angles. These measurements are made using an infrared reflection technique associated with electronic measurement of eye position. The targets used are light-emitting diodes spaced around an arc.

The subject is seated with the head in a fixed position at the center of the arc. Continuous recordings document the changes in nystagmus intensity as each target is first illuminated and then viewed by the patient. Targets over the central 60° of version are used (from 30° left gaze to 30° right gaze).

Convergence is tested by bringing the target towards the patient from the 0° position on the arc while continuously recording the binocular eye oscillations. If the nystagmus intensity decreases with convergence, base out prisms are added to the version prisms as shown in the following example from "Improving Visual Acuity of the Nystagmic Child."

Desired version shift = 4° left.
Desired vergence shift = 14Δ.

	O.D.	O.S.
Version	4 ^Δ BR	4 ^Δ BR
Vergence	7 ^Δ BR	7 ^Δ BL
Composite	11 ^Δ BR	3 ^Δ BL

Total Version $(11-3)/2 = 4^{\Delta}$ left.
Vergence $11 + 3 = 14^{\Delta}$.

The amount of vergence added is occasionally limited by the patient's fusional ability and frequently by the resultant size of the prisms.



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