

A randomized controlled trial comparing soft contact lens and rigid gas-permeable lenswearing in infantile nystagmus.

[Jayaramachandran P](#)¹, [Proudlock FA](#)¹, [Odedra N](#)¹, [Gottlob I](#)¹, [McLean RJ](#)².

[Author information](#)

Abstract

OBJECTIVE:

To perform the first randomized controlled trial comparing soft contact lens (SCL) with rigid gas-permeable lens(RGPL) wearing in infantile nystagmus (IN), using spectacle wear as a baseline.

DESIGN:

Randomized, controlled cross-over trial with an intention-to-treat design.

PARTICIPANTS AND CONTROLS:

A total of 24 participants with IN (12 idiopathic, 12 with albinism).

METHODS:

Participants were randomized into 1 of 2 treatment arms receiving the following sequence of treatments (2-3 weeks for each treatment): (A) spectacles, SCL, RGPL, and spectacle wear; or (B) spectacles, RGPL, SCL, and spectacle wear.

MAIN OUTCOME MEASURES:

The main outcome measure was mean intensity of nystagmus at the null region viewing at 1.2 m.

Secondary outcome measures included the same measure at 0.4 m viewing and across the horizontal meridian (measured over a $\pm 30^\circ$ range at 3° intervals) for distance and near. The nystagmus foveation characteristics were similarly assessed over $\pm 30^\circ$ and at the null region at 1.2 m and 0.4 m viewing.

Visual outcome measures included best-corrected visual acuity (BCVA) at 4 m and 0.4 m, gaze-dependent visual acuity (GDVA) (i.e., visual acuity when maintaining gaze angles over a $\pm 30^\circ$ range at 10° intervals) at 4 m, and reading performance at 0.4 m derived from the Radner reading chart.

RESULTS:

There were no significant differences between SCL and RGPL wearing for any nystagmus characteristics or compared with spectacle wearing. The BCVA, reading acuity, and critical print size were significantly worse for SCL wearing compared with RGPL and baseline spectacle wear ($P < 0.05$), although mean differences were less than 1 logarithm of the minimum angle of resolution (logMAR) line.

CONCLUSIONS:

Nystagmus was not significantly different during SCL and RGPL wearing in IN, and contact lens wearing does not significantly reduce nystagmus compared with baseline spectacle wearing. The wearing of SCL leads to a small but statistically significant deterioration in

visual function compared with both RGPL and spectacle wearing at baseline, although mean effect sizes were not clinically relevant.