range of nursery-lighting conditions is remarkably uniform. The association we find between parental myopia and nursery night-time lighting suggests that Quinn *et al.*'s study should have controlled for parental myopia.

Another possible difference is that Quinn *et al.*'s sample is not representative of juvenile myopes. It was drawn from a tertiary referral, paediatric ophthalmology outpatient clinic, and the sample had a median age of eight (young for a sample of myopes) with a very high proportion of myopia (30%). Our sample had fewer myopes and fewer hyperopes, and the children were older. Also, the proportion of parents reporting that their infants slept under full lighting is different in our study: more than 15% of their clinic-based sample had full nursery lighting, whereas only 3.7% of our representative, school-based sample had full room lighting at night.

Our results indicate that myopia is unlikely to develop in children as a result of exposure to night-time lighting as infants.

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Quinn *et al.* report a strong association between myopia in children and their exposure to night-time lighting during their first two years[1]. We have been unable to confirm this surprising result, but we find that myopic parents are more likely to employ night-time lighting aids for their children. Moreover, there is an association between myopia in parents and their children[2,3].

We acquired child and parent refraction information as part of a 24-year longitudinal study of visual development in children. These children were research subjects and are not a clinical population. Refractions from 213 children and their parents are included; all children were refracted in the laboratory by non-cycloplegic retinoscopy.

One limitation of Quinn *et al.*'s study is a lack of information about the refractive status of the parents. Parents in our study were either tested in the laboratory or their spectacle prescriptions were used; if they had never worn glasses and could see clearly at a distance, they were classed as non-myopic.

Subjects (100 females and 113 males) ranged in age from 2 to 24 years, with a mean of 11 years. The data were divided into two groups: myopes, with a spherical equivalent refractive error ranging from −9.0 to −0.5 dioptres (mean, −2.50 dioptres), and non-myopes, with a spherical equivalent refractive error more positive than −0.5 dioptres (range, −0.38 to +4.38 dioptres; mean, +0.87 dioptres). Answers to questionnaires on nursery lighting conditions at night were collected from parents over the telephone, using the questions of Quinn *et al.* and a few extra ones. One asked parents to rate their confidence in the reliability of their recall of night-time lighting conditions from years earlier: 98% were confident in their responses.

The prevalence of myopia in our sample of children was not associated with ambient light exposure at night during their first two years, or later in life: 20% of those who slept with night lights before age 2 were myopic — the same incidence as in children who slept in the dark. There were no myopes among the small group who slept with full room illumination. This result was not related to either age of onset (mean, 10.5 years) or the severity of myopia.

Families with two myopic parents, however, reported the use of ambient lighting at night significantly more than those with zero or one myopic parent ($\chi^2 = 7.42$, $P < 0.025$). This could be related either to their own poor visual acuity, necessitating lighting to see the child more easily at night, or to the higher socio-economic level of myopic parents, who use more child-monitoring devices. Myopia in children was associated with parental myopia, as reported previously[2,3]. The proportion of myopic children with two myopic parents was significantly greater than the proportion of myopic children with zero or one myopic parent ($\chi^2 = 4.42$, $P < 0.05$).

Based on these results, we question whether parents need to be concerned about causing myopia in their children by lighting their nurseries at night.

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Quinn et al. *reply* — In not being able to find the strong association reported by us[1] of childhood myopia with night-time ambient lighting before age 2 years, Zadnik *et al.* and Gwiazda *et al.* ascribe our results to a tendency of myopic parents to illuminate their children's rooms at night. Family studies of myopia typically have difficulty separating environmental from genetic factors, however, as sib–sib correlations for myopia decrease with increasing age difference[2] and within-family refractive similarities decrease with adjustment for the 'classic' environmental factors of education and close work[3]. Thus, shared inter-generational behaviour (such as use of night lighting) cannot be excluded *a priori* as contributing to any familial association for myopia.

There are major differences among the studies. Our subjects were younger (mean age, 8 years) and had a considerably higher myopia prevalence of 28% — itself quite high for a United States population of this young age. Accordingly, early-onset myopes, who ultimately tend to become more severely affected, are overrepresented in our tertiary-care population. Thus, it remains to be determined whether the lack of a daily period of darkness during infancy either accelerates myopia onset or provokes the condition in a subset of children who may be predisposed to a more severe form of the condition.

Neither of the subsequent studies considers possible reporting bias. Our findings received widespread publicity, and parents of myopic children might not accurately report or may even under-report a behaviour they fear could have harmed their children. Misclassification errors may also have been introduced into the later results, from non-cycloplegic childhood refractions in one and from self-reported parental refractions[4] in the other.

Our results[1] and others demonstrating the influence of lighting on ocular development in animals[5] support the notion that disrupting the daily light–dark illumination cycle may affect eye development in children. Rather than offering reassurance to parents at this time, the disparities in the available clinical reports are better directed to guiding the design of future research into the interactions of light, dark and refractive development.

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