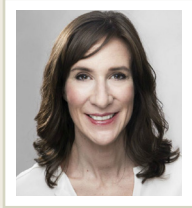


# Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

## Daily disposable contact lenses and adolescents

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Since daily disposable contact lenses first entered the market in the mid-1990s, there has been increasing evidence of their benefits – especially in the adolescent patient population. The definition of pediatric varies by governing agency but generally includes patients from newborn up to age 18 or 21 years of age. Even within the pediatric age range, there are significant differences in health concerns and treatment guidelines, thus this population is often further subdivided. For example, the United States Food and Drug Administration subdivides pediatrics into children (2 to 12 years) and adolescents (12 to 21 years). Similarly, Health Canada defines adolescence as age 13 to 19 years. The following review highlights the results of a study designed to evaluate the impact of daily disposable wear in adolescents.

*Plowright AJ, Maldonado-Codina C, Howarth GF, Kern J, Morgan PB. Daily disposable contact lenses versus spectacles in teenagers. Optom Vis Sci 2015;92: 44-52.*

The Plowright study enrolled 110 adolescent patients (age 13 to 19 years) and randomized them to either daily disposable contact lenses or glasses for a period of six months.<sup>1</sup> Clinical and quality of life indicators were assessed via slit-lamp examination, logMAR visual acuity, the Pediatric Refractive Error Profile and Quality of Life Impact of Refractive Correction surveys. Subjects were also asked about their perceptions of contact lens wear.

### Benefits of contact lenses in adolescence

The study showed self-reported improvements in appearance, satisfaction, activities and peer perception.<sup>1</sup> This work is in agreement with previous studies demonstrating that both children (8 to 11 years) and adolescents (13 to 17 years) can achieve improvements in quality of life from contact lens wear.<sup>2,3</sup>

Beyond immediate quality of life improvements, there is strong evidence that certain contact lens designs can slow the development of myopia in children and adolescents.<sup>4</sup> Decreasing the severity of myopia will have life-long ocular health benefits for these patients.<sup>5</sup>

### Benefits of daily disposable contact lenses in adolescence

Adolescence is a unique time accompanied by significant hormonal changes, increases in stress and psychological disorders, and increased susceptibility to certain inflammatory conditions such as acne. Specific to contact lens wear, there is an increase in the risk of complications and corneal infiltrative events in 14- to 25-year-old wearers.<sup>6,7</sup> The impact of systemic changes (stress, immune response) are not fully understood, but there is evidence of differences in patient behaviors and environmental exposures during adolescence.<sup>8</sup>

The Plowright paper reported that only four of the 47 patients who completed the six-month contact lens trial experienced an adverse event. None of the events resulted in a loss of vision, but all did result in a corneal scar. Many studies have demonstrated an improved safety profile of daily disposable contact lenses compared to reusable lenses.<sup>6,7,9</sup> Since a majority of non-compliant behaviors and exposures can be reduced or eliminated by the use of daily disposable contact lenses, this modality has clear benefits in this at-risk population.

Other benefits of daily disposable contact lenses include improvements in comfort and vision and a decrease in solution-related toxicity and allergic reactions.<sup>10</sup> This benefit is also supported by the present study. Subjects showed good visual acuity and less than grade 1 staining on the ocular surface following six months of daily disposable contact lens wear.<sup>1</sup>

Finally, the Plowright study and others demonstrate that children and adolescents are not only able to successfully wear contact lenses but, when given the opportunity, enjoy wearing daily disposable contact lenses. A short trial of daily disposable contact lenses improved teenagers' attitudes toward the vision, comfort, handling and safety of contact lens wear.<sup>1</sup> Similarly, the majority of children age 8 to 11 years reported that they "never had a problem" or "usually did not have a problem" applying, removing, or handling their daily disposable contact lenses.<sup>11</sup> Following completion of a study, 63% of children and 80% of teenagers continued wearing contact lenses, and over 80% of children and teenagers reported that they preferred contact lenses to glasses.<sup>12</sup> Cost was the primary reason parents provided for the reason teenagers discontinued contact lens wear.<sup>12</sup>

### Contact lens prescribing in adolescence

Based on these benefits, it is not surprising that daily disposable contact lenses are increasingly fitted for pediatric patients. An international survey of contact lens fitters indicated that the proportion of all contact lens fits for minors versus adults ranges from 1 to 25% worldwide.<sup>13</sup> About 25% of children and 20% of teenagers are fitted with daily disposable contact lenses, but this number also varies by country.<sup>13</sup> Given the increasing incidence of myopia worldwide, pediatric contact lens fitting represents a significant growth potential for practitioners.

### Conclusions

There is mounting evidence to support the benefits of fitting adolescent patients with daily disposable contact lenses. Practitioners should be aware of the potential for increased risk of complications in this demographic and strive to educate patients and parents on how to minimize risks and maximize benefits associated with contact lens wear.

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