

# Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

## Targeted Patient Education for Young Adult Soft Contact Lens Wearers

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Previous work suggests that young adult soft contact lens (SCL) wearers are at higher risk for corneal infiltrative events (CIEs) and other contact lens-related complications than their younger<sup>1-3</sup> or older<sup>1-8</sup> peers. Observational studies and clinical trials examining the frequency of CIEs in adult wearers showed that the frequency of events was highest in wearers younger than 25 years.<sup>5-8</sup> Age was also a risk factor in a prospective study of microbial keratitis in decorative SCL wearers.<sup>9</sup> Studies that included minors reported that the risk of events peaked in older teen and young adult wearers.<sup>1-3,8</sup>

Understanding how young adults wear contact lenses provides insight into modifiable risk factors. The associations between patient age and factors that may contribute to CIEs in young SCL wearers were assessed in a survey of SCL wearers aged 12-33 years.<sup>10</sup> Young adult wearers reported greater frequency of napping with SCLs as well as greater frequency of sleeping in SCLs after alcohol use, when traveling, and when away from home. In the same study, these young adult wearers were more likely to wear SCLs when showering and were less likely to wash their hands before applying their lenses. Younger wearers (less than 21 years) were more likely to replace lenses when they perceived a problem rather than to adhere to the prescribed replacement regimen. Wearers aged 18-21 years reported more recent nights with fewer than six hours of sleep, more colds/flu, and higher stress levels. These wellness factors were consistent with survey findings whereby both Canadian<sup>11</sup> and American<sup>12</sup> university students reported that anxiety, stress, sleep difficulties and cold/flu/sore throat were the top items impacting their academic success.

### What makes the young adult lens wearer unique?

Young adults face many unique exposures and demands.<sup>13</sup> While napping in SCLs is a predictable aftermath of erratic schedules, late night studying or socializing, it can be thought of as a smaller physiological dose of overnight wear and should therefore be discouraged.

Showering in SCLs, a likely consequence of time pressures, lack of hygienic spaces for lens removal in high-density living environments, or heightened self-consciousness about spectacle wear when away from the family home, is of concern because of the association between water exposure and Acanthamoeba keratitis.<sup>14,15</sup> Contact lenses should be never come into contact with water.

Less frequent hand washing and poor hygiene has been reported by college students wearing contact lenses.<sup>16</sup> In this study, over half of the participants identified themselves as poor lens wearers based upon self-described inadequate lens cleaning and non-compliance with medical advice. Low hand hygiene compliance among students living in high-density living environments has been attributed to outbreaks of upper respiratory illness,<sup>17</sup> conjunctivitis<sup>18</sup> and Norwalk-like viruses.<sup>19</sup> Proper hand hygiene can reduce lens case contamination<sup>20</sup> and promote healthy SCL wear.

Reactive replacement may be a consequence of limited access to lens supplies or eye care provider (ECP), lack of funds, reliance on parents to order and pay for contact lenses, inadequate patient education, impulsive lifestyle and/or failure to plan ahead. Reinforcement of the prescribed replacement regimen is merited.

### Anticipatory guidance

ECPs can utilize this information to deliver targeted patient education for young adult wearers. Age-related contact lens management could include refitting a young adult into a more streamlined care regimen as well as guidance on more proactive planning. Daily disposables have been associated with fewer adverse events<sup>3,21</sup> and, if worn as prescribed, could potentially eliminate the risks associated with overnight wear.<sup>22,23</sup> Previous investigators have described a “pantry effect” whereby patients who were in possession of an abundant supply of SCLs were likely to adhere to their replacement schedule.<sup>24</sup> Therefore, more proactive planning could include maintaining an adequate supply of lenses and lens care products as well as identifying a hygienic space for lens care and storage and ensuring that materials (lenses, lens care, spectacles) are accessible when away from home. Furthermore, ECPs should reinforce avoidance of water exposure, proper wearing and replacement schedules as well as what to do if the patient experiences an eye problem when away from home. Furthermore, education that decorative SCLs require the same vigilance as other SCLs is merited, given reports of abuse.<sup>9</sup>

Parents and ECPs should take a proactive role in guiding older adolescents and young adults to “health care independence”. Previous studies suggest that parents underestimate the frequency of their young adult children’s risk behaviors<sup>25</sup> and their need for guidance.<sup>26</sup> ECPs could help educate young adult wearers together with their parents to encourage additional direction during this transition period.

As students prepare for university, they need to learn how to self-manage their health, given that the percentage of young adults furthering their education while living outside the family home approximates 70% in Canada<sup>11</sup> and 90% in the US.<sup>12</sup> Self-management includes prevention and behaviors that promote wellness. Daily behaviors such as SCL wearing schedules and proper lens care have important implications for ocular health. Similarly, young adults need to learn how to interact with health care providers for both preventive and acute care; the shift in responsibility from parents to adolescents may cause confusion or anxiety, particularly for individuals who have previously relied on parental direction. Additionally, previous studies have reported that situational factors and emotional responses may be barriers to health compliance.<sup>27</sup> Situational factors for young adult SCL wearers potentially include time management, stress, inadequate finances and lack of social support. The academic demands and social pressures of college life may undermine timely procurement of contact lenses and lens care products and periodic eye examinations. In turn, the competing priorities in young adults’ lives may compromise the immune system and thus contribute the frequency of SCL-related adverse events. Emotional factors, such as denial or rebellion, have also been reported as detrimental to young adults’ health;<sup>28</sup> these factors may manifest as feelings of invincibility and the misperception of risks associated with SCL wear. Furthermore, a higher risk-taking propensity has been associated with less compliant lens behavior.<sup>29</sup>

### Conclusion

In summary, patient age is associated with unique lens wearing behaviors, environmental exposures, general wellness, access to care and other determinants of health that may contribute to increased adverse events in younger adult wearers. These findings support the need for targeted education and proactive planning to promote safe and healthy SCL wear during a period characterized by change and exploration.

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