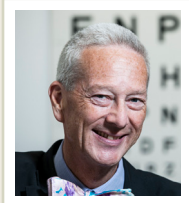


Contact Lens Update

CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

Why aren't we fitting everyone with daily disposables?

February 3, 2016



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I lecture extensively world-wide on contact lens related topics, and over the past few years my most requested lecture is on daily disposable lenses. I usually start by asking my audience this simple question: If there was no difference in the cost to the patient between daily, two-weekly or monthly replacement lenses, can you think of any reason why you would prescribe anything other than daily disposables? This question is typically met with a stony silence

Of course, the reason for this silence is that it is self-evident that daily disposable lenses are the safest and most convenient form of lens wear. However, we also believe that there is a difference in the cost of these products ... but is this really the case? Are daily disposable really that much more expensive than other lens replacement modalities? This is a pivotal question, so let me begin with a 'cost-per-wear' analysis¹ that I have devised which addresses this question head on. The result might surprise you ...

Considering the cost

My 'cost-per-wear' model¹ describes the daily cost of wearing any specified lens brand in relation to the number of times lenses are worn, on average, each week. The model, which assumes that the patient is compliant with the specified schedule of lens replacement and solution usage (if reusable lenses are being worn), takes into account all direct costs, including the cost of the lenses, lens care solutions and professional fees. The primary outcome of the model is that daily disposables are less expensive than reusable lenses when worn ≤ 5 days per week, but a little more expensive when worn 6 or 7 days per week.¹

"How much more expensive?" I hear you shout. The answer is about 50 cents per day, which is equivalent to the price of one espresso coffee served up at your local café each week. I would argue to that this is a price worth paying for the sheer convenience, improved vision² and superior ocular health³ of this form of lens wear.

The advantages of eliminating solutions

Daily disposable lens wear eliminates the potential for solution-related complications, including solution-induced corneal staining⁴ and lid effects stemming from solution sensitivities.⁵ The question of patient compliance with proper use of lens care systems and hygienic handling of lenses also becomes a non-issue with daily disposable wear. Without the need for overnight storage, the risk of case contamination disappears. Lens case contamination can result from poor lens case hygiene,^{6, 7} including infrequent replacement⁶ and failure to air dry,⁸ and has been identified as a risk factor for microbial keratitis.^{8, 9}

The packaging of daily disposables also has potential to further decrease the risk of contamination due to lens handling, with the advent of innovations designed to minimize handling. Utilizing novel, proprietary technology,

Menicon's 1-day Miru lens is stored in its packaging with the outer surface face-up, making the lens easier to pick up and insert with no need to touch its inner surface.¹⁰ This novel concept results in reduced contamination following removal of the lens from the blister pack.¹¹

On the question of safety

Perhaps the most sensitive indicator of an adverse ocular reaction to contact lens wear is the appearance of corneal infiltrative events (CIEs), which represent a pro-inflammatory reaction. Using this measure, Chalmers and colleagues³ have demonstrated the distinct health advantages of daily disposables. Cases of symptomatic CIEs were identified in a retrospective, multicentre case-control study at five academic eye care centres in the USA. The investigators reported that daily disposables carry a 12.5X lower risk of CIEs compared with reusable lenses.³

Microbial keratitis is another serious concern associated with contact lens wear. Although studies show that disposing of lenses on a daily basis does not necessarily lower the risk of developing microbial keratitis,¹²⁻¹⁴ the resulting infection is more likely to be less severe.^{12,13}

There are many possible reasons for this, including no long-term deposit build-up, the absence of adverse reactions associated with the use of lens care solutions, greater compliance with a simple regimen and readiness to remove and discard the lens if it is not feeling right.

The statistics speak for themselves

Irrespective of what pundits like me have to say about the benefits of daily disposables, practitioners are 'voting with their prescribing habits'. Together with Professor Philip Morgan at the University of Manchester, UK and an international consortium of collaborators, I have been conducting annual surveys of contact lens prescribing in over 60 nations for the past 20 years, and the statistical trends speak for themselves. In 2015, daily disposables represent 30% of all contact lenses fitted globally. This might not sound like a high number, but the upward trend in virtually all nations continues unabated (Figure 1). When considering only spherical soft lenses, daily disposables represent over 50% of lenses prescribed in six of the 34 nations surveyed in 2015 (Figure 2) – Australia, Italy, Taiwan, United Kingdom, Denmark and Japan.¹⁵

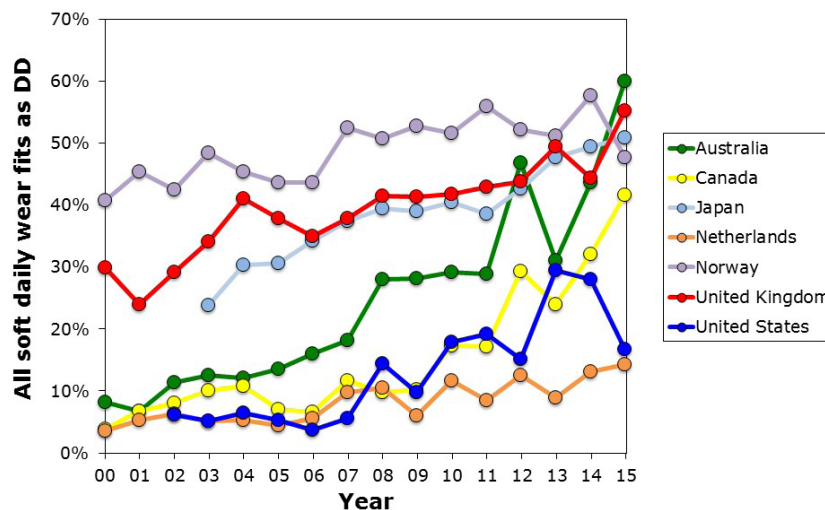


Figure 1: Daily disposable fits as a percentage of all daily wear spherical soft lens fits recorded in 34 nations in 2015.

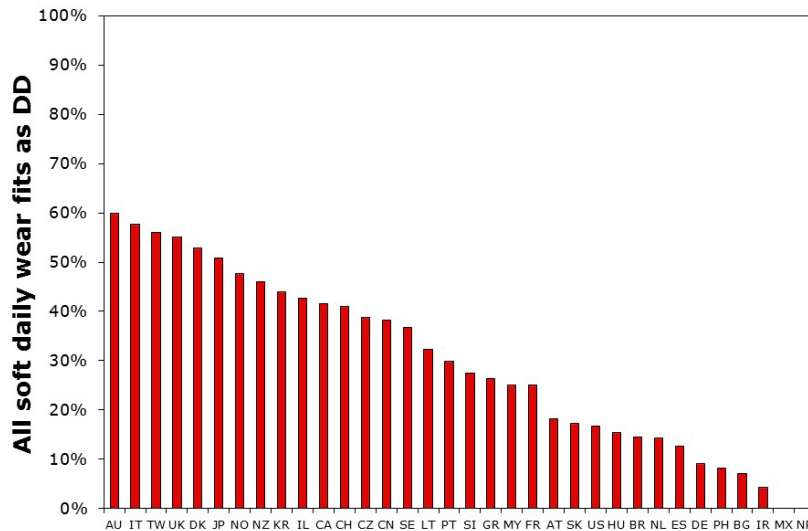


Figure 2: Trends in daily disposable fits as a percentage of all daily wear spherical soft lens fits recorded in 7 nations between 2000 and 2015. Country codes: AT Austria; AU Australia; BG Bulgaria; BR Brazil; CA Canada; CH Switzerland; CN China; CZ Czech Republic; DE Germany; DK Denmark; ES Spain; FR France; GR Greece; HU Hungary; IL Israel; IR Iran; IT Italy; JP Japan; KR South Korea; LT Lithuania; NL Netherlands; NO Norway; MX Mexico; MY Malaysia; NP Nepal; NZ New Zealand; PH Philippines; PT Portugal; SE Sweden; SI Slovenia; SK Slovakia; TW Taiwan; UK United Kingdom; US United States.

Some 'crystal ball gazing' to finish off

I can see myself having a conversation with an optometric colleague in the year 2025 that would go something like this: "Do you remember, towards the end of the 20th century, when people used to remove their contact lenses, clean them with special solutions, place them in a little container, and put those very same lenses back into their eyes the next day? Yeuch!!"

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