

RESEARCH UPDATE



Welcome to our monthly research update

Welcome to Research Update, a new resource available to IACLE and BCLA members to support your teaching and practice. Each month we will send you a summary of some of the interesting findings appearing in peer-reviewed journals that month. Our aim is to help you keep up to date with the latest contact lens and anterior eye research, and to locate articles when you want to know more about a particular topic.

More information on Research Update and how to use it in your contact lens teaching [here](#).



Issue 1 – January 2017

Myopia progression continues to be an area of concern for all eye care practitioners and researchers. In this issue, a research group in Denmark reviews whether physical activity has a definite role in myopia development, and a meta-analysis from China evaluates the effect of soft bifocal and multifocal contact lenses on controlling myopia. Other papers seek answers

to key questions explored by recent research. Does CL purchase route influence wear and care behaviours? What are the psychological effects of dry eye on our patients? And does inflammation have a role in CL discomfort? We also include a study examining the ocular response to environmental variations in CL wear. Finally we report new findings on anterior segment parameter changes in keratoconus.

Enjoy our first issue!
The IACLE Education Team

Journals reviewed in this issue (and link to Table of Contents)

JOURNAL	VOLUME AND ISSUE NUMBER
Acta Ophthalmologica	Early view
Ophthalmic & Physiological Optics	37:1
Contact Lens & Anterior Eye	39:6
Eye	30:12
Eye & Contact Lens	43:1

MYOPIA Physical activity and myopia

Thykjaer *et al* conducted a systematic review of the correlation between physical activity and myopia. Out of 263 identified papers, 9 studies with a total of 17,634 subjects were included. While a consistent relationship was observed between more physical activity and less myopia, there was no evidence for physical activity as an independent risk factor for myopia. Interventions to prevent myopia should be based on outdoor exposure rather than physical activity, and future studies should clearly differentiate physical activity and outdoor exposure.

Acta Ophthalmol 2016. DOI: 10.1111/aos.13316 Click [here](#) for abstract

MYOPIA Bifocals vs multifocals for myopia control

In this meta-analysis, Li *et al* evaluated the effect of soft CLs with concentric ring bifocal and peripheral add multifocal designs on control of myopia progression in 6-18 year old myopic children. Of 536 publications, 8 (5 randomised controlled trials, 3 cohort studies) with a total of 587 children were analysed. Follow-up ranged from 10-24 months. While both designs were effective for controlling myopia progression, with overall control rates of 30-50% over 2 years, concentric ring bifocals showed greater effect than peripheral add multifocals.

Ophthalmic Physiol Opt 2017;37:1 51-59. Click [here](#) for abstract

INTERNET PURCHASE Habits of CL wearers and where they buy

This study by Chalmers *et al* compares the behaviour (related to lens wear and care) of soft lens wearers who purchased lenses from their eye care practitioners (ECP), at retail (not where they were examined) or on the internet/telephone. Purchase sources of 968 respondents were: ECP 646 (67%), retail 104 (11%) and internet/telephone 218 (23%). Internet purchasers reported less frequent eye examinations and purchased more hydrogel lenses (vs SiHys). Napping in lenses was reported more often by wearers buying from retail.

Cont Lens Anterior Eye 2016;39:6 435-441. Click [here](#) for abstract

DRY EYE Depression and anxiety in dry eye

To evaluate the association between depression and anxiety with dry eye disease (DED), Wan *et al* conducted a systematic review and meta-analysis of 22 studies involving 2,980,026 patients. DED was associated with increased prevalence of depression and anxiety. Those suffering from primary Sjögren's syndrome had higher prevalence and severity of depression. Eye care practitioners should be aware of potential psychiatric problems in patients with dry eye.

Eye 2016;30:1558-1567. Click [here](#) for abstract

DISCOMFORT Inflammation and contact lens discomfort

This literature review by Willcox explores the role of inflammation in contact lens discomfort (CLD). Weak evidence was found for a direct relation between inflammatory signs such as limbal or conjunctival redness and CLD. Few studies have investigated the role of inflammation in CLD. From the available information, there seems to be no major inflammatory response associated with CLD. The strongest association found was with tear lipid degradation processes.

Eye Contact Lens 2017;43:1 5-16. Click [here](#) for abstract

ENVIRONMENT Ocular response in adverse conditions

Lopez-de la Rosa *et al* assessed the influence of two simulated indoor environmental conditions – found in office buildings (standard) and aircraft cabins (adverse) – on 54 soft CL wearers using either hydrogel lenses or SiHys. The adverse condition had a greater negative impact on ocular surface than the standard condition for variables such as pre-lens tear breakup time, limbal and bulbar hyperaemia, and CL dehydration. Lens type influenced comfort, vision and staining. Blink rate was affected by environment, lens type and time.

Ophthalm Physiol Opt 2017;37:1 60-70. Click [here](#) for abstract

KERATOCONUS Anterior segment changes in keratoconus

Are structural changes in keratoconus predominantly corneal, limbal/scleral or a combination of both? Mas-Aixala *et al* used the Pentacam system to analyse anterior segment parameters of 44 keratoconic eyes and 44 healthy eyes. The results suggest keratoconus changes scleral shape adjacent to the limbus, as well as changing the central and peripheral cornea. This finding may help in monitoring disease progression and in contact lens design and fitting.

Cont Lens Anterior Eye 2016;39:6 466-470. Click [here](#) for abstract

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