



Welcome to Bausch and Lomb’s monthly research update.

With my background in clinical ophthalmic research, mainly of the anterior eye, Bausch and Lomb have asked me to produce an independent report of some of the interesting findings coming out of the research journals each month. As a busy practitioner, this should allow you to keep more up-to-date with cutting edge clinical research and allow you to locate the articles when you want to know more about a topic highlighted.

Professor James Wolffsohn is Head of Optometry at Aston University. James’ research and teaching interests mainly revolve around intraocular lenses, contact lenses, low vision and the measurement of accommodation. He has published over 90 peer reviewed academic papers, written books on Low Vision and Imaging and has given numerous international presentations. James is also a past President of the British Contact Lens Association.

Issue 3

The following key clinical peer reviewed journals will be reviewed:

JOURNAL	VOLUME
American Journal of Ophthalmology	149(2)
Archives of Ophthalmology	128(2)
British Journal of Ophthalmology	94(2)
Clinical and Experimental Optometry	93(1)
Contact Lens and Anterior Eye	33(1)
Cornea	29(2)
Investigative Ophthalmology and Visual Science	51(2)
Journal of Optometry	2(4)
Journal of Refractive Surgery	26(2)
Ophthalmic and Physiological Optics	30(2)
Ophthalmology	117(2)
Optometry and Vision Science	87(2)



Do multipurpose contact lens solutions work against a broad spectrum of pathogens?

Examining a much wider group of bacteria and fungi than required by international standards, it was found that all the multipurpose solutions tested were effective against bacteria, their ability to kill fungal isolates was more variable. This is of concern considering the recent outbreaks of microbial keratitis, a sight threatening infection.

[Ophthalmic and Physiological Optics \(2010\) 30: 12-19.](#)

Dehydration of hydrogel contact lenses

This study confirmed that ionic characteristics, but mainly high water content are association with hydrogel contact lens dehydration.

[Ophthalmic and Physiological Optics \(2010\) 30: 160-166.](#)

Photorefractive keratectomy can treat refractive accommodative esotropia

PRK was used to treat low to moderate hypermetropia resulting in the neutralisation of purely accommodative esotropia in all cases, which was stable over the 1 year follow-up, eliminating the need for spectacle correction.

[British Journal of Ophthalmology \(2010\) 94: 236-240.](#)

Explaining solution related staining with certain multipurpose solutions

A study by AMO showed that contact lenses cleaned with polyhexamethylene biguanide hydrochloride (PHMB), particularly ionic and non-silicone hydrogel lenses, release the care solution more slowly into the tear film than Aldox cleaned contact lenses, potentially explaining the peak in solution induced staining with a peak around 2 hours. The release of Aldox was greater for silicone-hydrogel materials and typically occurs over the first 20 minutes following insertion.

[Contact Lens and Anterior Eye \(2010\) 33: 9-18](#)



The contact lens population is ageing

More data from the yearly survey of contact lens practice across the world led by Manchester University shows the increasing age of wearers in all markets, with the Japanese wearers being the most youthful. There has been a general decline in the proportion of new fits, but this is accompanied by an increase in the proportion of refits. The authors reflect that this may be due to the growing conversion of wearers to superior products such as toric designs and lenses of silicone-hydrogel material.

[Contact Lens and Anterior Eye \(2010\) 33: 27-29.](#)

Corneal adaptation to mechanical cooling and chemical stimuli

A group from the university of Waterloo investigated the corneas sensitivity to repeat stimulation, finding that adaption occurred with mechanical and cooling stimuli. However, repeated chemical exposure affected the threshold, but not the scored intensity by participants.

[Investigative Ophthalmology and Visual Science \(2010\) 51: 876-881.](#)

What affects eye tracking during LASIK

In a study on 142 patients, age, gender and the duration of the LASIK pulses were found to affect intraoperative cyclotortion, but there was no difference between femtosecond, microkeratome and epi-LASIK flap creation methods.

[American Journal of Ophthalmology \(2010\) 149: 229-237.](#)

Endophthalmitis rates after cataract surgery in Canada

The rate of endophthalmitis within 90 days after nearly half a million cataract operations was 1.5 per 1,000. Risk factors were ≥ 85 years of age, male sex, cataract surgery longer ago and surgery in certain regions.

[Archives of Ophthalmology \(2010\) 128: 230-234.](#)



Infective keratitis rates following LASIK

The rate of infective keratitis in just over two hundred, thousand eyes was 0.035%, mainly occurring in the first week after the procedure.

Ophthalmology (2010) 117: 232-238.

Contact lens management of infantile aphakia

Richard Lindsay and Jessica Chi review how the detection and prompt surgical removal of cataracts have improved over the last couple of decades, improving visual outcome by the fitting of contact lenses.

Clinical and Experimental Optometry (2010) 93: 3-14.

Compliance with Contact Lens wear schedules in North America

Canadian eye care practitioners tended to prescribe more 1 month replacement than US practitioners whose preference was for 2 week replacement. Canadian practitioners were also most likely to recommend longer replacement frequencies than stated by the manufacturers for 2 week replacement lenses. Daily disposables were about 17% of both markets.

Non-compliance by patients was highest (around 50%) with 2 week replacement with patients and still around 30% with 1 month replacement with patients reporting "forgetting which day to replace their lenses". Non-compliance was least with daily disposables (~12%), the main rationale being "to save money"

Optometry and Visual Science (2010) 87: 131-139.

Corneal sensitivity as an assessment of dry eye damage to the ocular surface

Mechanical sensitivity of the ocular surface was found to be reduced in dry eye compared to healthy patients, but improved with the topical immunosuppressant cyclosporine, as did the signs and symptoms of dry eyes.

Cornea (2010) 29: 133-140.



MOST INTRIGUING JOURNAL ARTICLE TITLE

Animal-eyeball vs. Road-sign retroreflectors.
[*Ophthalmic and Physiological Optics \(2010\) 30: 76-84.*](#)

MOST FASCINATING FINDING

Corneal tattooing (keratopigmentation) has been used since about 200AD for cosmetic treatment of corneal opacities. Jorge Alio and his team demonstrated the use of a new micronized mineral pigment for severely impaired patients, reporting that most patients were happy with the results.

[*British Journal of Ophthalmology \(2010\) 94: 245-249.*](#)

Next report

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