



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 2

The following key clinical peer reviewed journals will be reviewed:

JOURNAL	VOLUME
American Journal of Ophthalmology	148 (6)
Archives of Ophthalmology	127(11)
British Journal of Ophthalmology	93(12)
Clinical and Experimental Optometry	92(6)
Contact Lens and Anterior Eye	32(6)
Cornea	28(10)
Investigative Ophthalmology and Visual Science	50(12)
Journal of Optometry	2(3)
Journal of Refractive Surgery	25(11)
Ophthalmic and Physiological Optics	29(6)
Ophthalmology	116(12)
Optometry and Vision Science	86(12)



More in depth differences in contact lens prescribing

Tim Bowden and colleagues compared contact lens practice in Germany and the UK. As expected, the Germans prescribed more RGPS. However, although hydrogen peroxide was more commonly used and patients rubbed their lenses as part of the cleaning process, the use of tap water was also more common.

[Contact Lens and Anterior Eye \(2009\) 32; 273-282.](#)

Link between Glaucoma and Alzheimer's Disease due to Reduced CSF?

Wostyn leads a review suggesting the growing evidence of a link between glaucoma and Alzheimer's disease may be due to a reduced cerebrospinal fluid in both groups.

[British Journal of Ophthalmology \(2009\) 93; 1557-1559.](#)

A new rapid test for Acanthoemba differential diagnosis

A new rapid detection test for Acanthamoeba cysts within 1 hour of a cornea scrape is presented by Shiraishi et al. The editorial picks up on the significance of this as acanthamoeba are notoriously difficult to diagnose without expensive polymerase chain reaction (PCR) techniques which are expensive, require a skilled technician and hence are not widely available. The scrapes are frozen in liquid nitrogen, sectioned and stained with Fungiflora Y. Early detection and treatments has been previously shown to result in better patient outcomes.

[British Journal of Ophthalmology \(2009\) 93; 1563-1565.](#)

Dry eyes is a significant risk factor for microbial keratitis in Care Homes

Jhanji et al studied the microbiological and clinical profiles of patients with microbial keratitis in care homes, identifying the main cause as staphylococcus associated with dry eyes and often linked to rheumatoid arthritis and ocular surface surgery. High resistance to antibiotics in this population was found.

[British Journal of Ophthalmology \(2009\) 93; 1639-1642.](#)



Brief questionnaire for Cataract Impact Assessment

Gothwal and colleagues validated a 9 question cataract questionnaire using Raasch analysis that identifies mobility and visual disability issues (not symptoms)

[British Journal of Ophthalmology \(2009\) 93; 1652-1656.](#)

Relative Effectiveness of Artificial Tears / Ocular Lubricants

Doughty and Glavin usefully review dry eye artificial tear / ocular lubricant treatments using Rose Bengal staining as an indicator of ocular surface damage. Overall the greatest improvement (on average 42% over 1 month) was associated with hyaluronic acid, with carbomer gels (38%) and saline/hypromellose (26%) offering less improvement although the results were variable between studies and only approached significance.

[Ophthalmic and Physiological Optics \(2009\) 29; 573-583.](#)

Larger treatment zone in Orthokeratology for hypermetropia Enhances Outcome

Gifford and Swarbrick showed increasing the treatment zone in hypermetropic orthoK led to better visual acuity

[Ophthalmic and Physiological Optics \(2009\) 29; 584-592.](#)

Oculomotor Disorders lead to poor Academic Performance

Shin and colleagues used a 19 item questionnaire (COVD-QOL) to screen children for non-strabismus accommodative/vergence dysfunction, showing a high specificity. These children were found to perform poorly academically in all subjects highlighting the need for early detection and intervention.

[Ophthalmic and Physiological Optics \(2009\) 29; 615-624.](#)

Proof that Intraocular Pressure affects Ocular Blood Flow

A team from Greece altered the pressure within eyes during cataract surgery while monitoring ocular pulse amplitude and flow. They showed that ocular pulse amplitude to increase 91% and pulse volume and pulsatile ocular blood flow to decrease by ~30% with an IOP increase from 15-40mmHg.

[Investigative Ophthalmology and Visual Science \(2009\) 50; 5718-5722.](#)



Endothelial cells appear not to be affected by LASIK or PRK

Patel and Bourne compared the endothelial cells of 29 eyes nine years after LASIK or PRK to normal corneas and showed no detectable difference.

[Archives of Ophthalmology \(2009\) 127; 1423-1427.](#)

Binocular function is maintain with Multifocal Intraocular Lens Implantation

Spanish researchers showed stereoacuity was unaffected by implantation of a multifocal intraocular lens in hyperopic eyes, suggesting binocular perception was maintained.

[Journal of Refractive Surgery \(2009\) 25; 1000-1004.](#)

Longterm graft success

Examination of corneal transplants in Sweden showed an overall success rate of 71% at 10 years with those for keratoconus being the most successful (88%) and bullous keratopathy being the least (<50%).

[Cornea \(2009\) 28; 1124-1129.](#)

A similar study in France found similar results over 5 years although in these grafts there was a 53% reduction in endothelial cells. However this had reduced to 64% at 10 years with a further 61% reduction in endothelial cells. Hence they estimated graft survival of 27% at twenty years and 2% at thirty years, making penetrating grafts a good short to mid-term therapeutic option, but deep anterior lamellar keratoplasty may be better for younger patients.

[Ophthalmology \(2009\) 116; 2354-2360.](#)

Deep Anterior Lamellar Keratoplasty (DALK) may not be as much of an improvement as was hoped

Unfortunately a team from the UK reviewed the success of corneal grafts and showed that despite the recipient's endothelium remaining in place and the anterior chamber not being penetrated with DALK, the risk of failure is almost twice penetrating keratoplasty, mainly due to early failures which appear to be related to surgeon's experience.

[Investigative Ophthalmology and Visual Science \(2009\) 50; 5625-5629.](#)



Descemet Stripping Automated Endothelial Keratoplasty also has significant risks

A New York team reviewed the success of 126 DSAEK cases finding serious complications were relatively rare (~5%), but less serious complications such as graft detachment were common (~18%).

[American Journal of Ophthalmology \(2009\) 148; 837-843](#)

MOST INTRIGUING JOURNAL ARTICLE TITLE

Half top hat wound configuration for penetrating keratoplasty: 1-year results.

[British Journal of Ophthalmology 2009; 93: 1629-1633.](#)

MOST FASCINATING FINDING

A novel technique of creating an intrastromal pocket with a femtosecond laser in which to administer riboflavin and higher fluence UVA appears to be an effective way of achieving cross-linking for keratoconus with reduced pain.

[Journal of Refractive Surgery \(2009\) 25; 1034-1037.](#)

Next report

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