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Why do research?

An illustrated personal guide

Philip B. Morgan

Eurolens Research
Division of Pharmacy and Optometry
University of Manchester

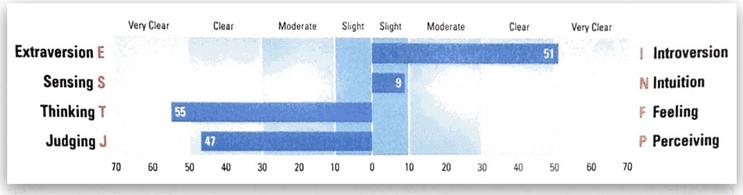
mbti.

Myers-Briggs Type Indicator®

Profile European Edition

PHILIP MORGAN / INTJ
28 September 2015

Clarity of Reported Preferences: INTJ



PCI Results Introversion 51 Intuition 9 Thinking 55 Judging 47

Your type professional can give you more insight into your Profile results as well as elaborate on the type description provided for you in the chart below. Does the description of your reported type seem to fit you? Many people find that their MBTI results describe them quite well. For others, changing a letter or two may help them discover an MBTI type that more accurately captures their personality. If you feel the characteristics do not fit you quite right, the person who administered the MBTI instrument can help you identify a better-fitting type.

Type Description: INTJ

ISTJ	ISFJ	INFJ	**INTJ**
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

- Insightful, conceptual and creative
- Rational, detached and objectively critical
- Likely to have a clear vision of future possibilities
- Apt to enjoy complex challenges
- Likely to value knowledge and competence; apply high standards to themselves and others
- Independent; trust their own judgements and perceptions more than those of others
- Usually seen by others as private, reserved and hard to know

Each type, or combination of preferences, tends to be characterised by its own interests, values and unique gifts. Whatever your preferences, you may use some behaviours that are characteristic of contrasting preferences. For a more complete discussion of the sixteen types, see the *Introduction to Type®* booklet by Isabel Briggs Myers. This publication and many others to help you understand your personality type are available.

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who

is the stakeholder?

what

do you want to happen?

example

please

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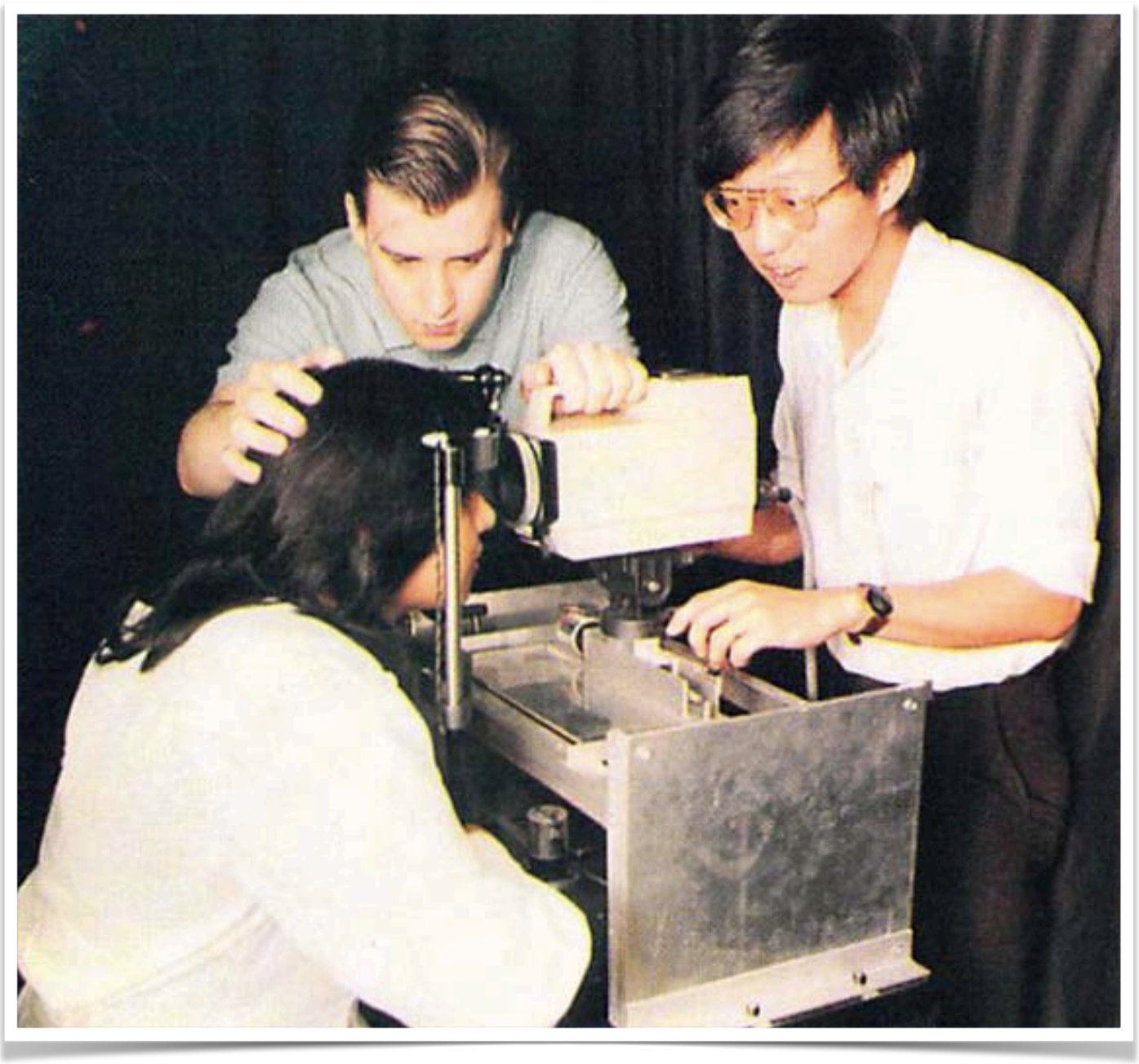
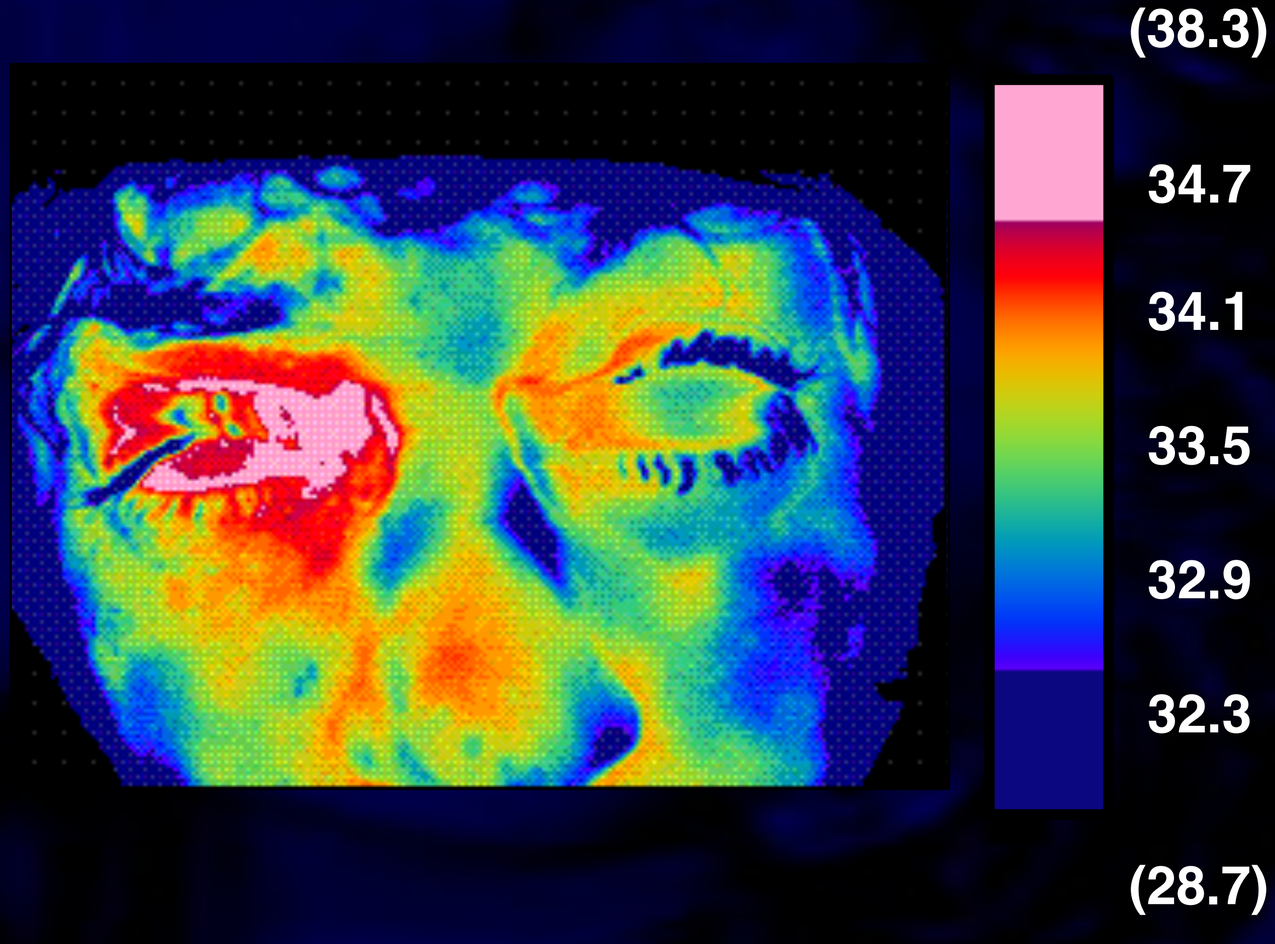


Acanthamoeba keratitis



*Right eye 33.86°C *IOD 0.75°C

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1040-5488/93/7007-0568$03.00/0
OPTOMETRY AND VISION SCIENCE

Vol. 70, No. 7, pp. 568–576

Potential Applications of Ocular Thermography

PHILIP B. MORGAN,* MENG POEY SOH,† and NATHAN EFRON‡
Department of Optometry and Vision Sciences, University of Manchester Institute of Science and Technology, Manchester, United Kingdom

ANDREW B. TULLO§
Department of Ophthalmology, University of Manchester, Manchester, United Kingdom

ABSTRACT

Thermography is an investigative technique which allows rapid color-coded display of the temperature across a wide surface by means of infrared detection. We describe an ocular thermographic study of a normal population and present case studies describing the application of this technique for patients with ocular disease. We found that 95% of the normal population have an interocular temperature difference (temperature of center of right cornea minus temperature of center of left cornea) of 0.60°C or less. There appears to be a greater difference in temperature between the limbus and the center of the cornea in patients with dry eyes. This technique has potential for evaluating tear film disorders and inflammatory conditions, for monitoring the progress of such conditions, and for evaluating the efficacy of various treatments.

Key Words: thermography, infrared, cornea, tear film, inflammation

After the Second World War, rapid advancements were made in infrared detection equipment as governments recognized the potential of night sight technology in military conflicts. These developments were adapted by medical researchers and, by the 1950s, infrared detectors were being used to diagnose and manage patients with breast cancer. The technique of infrared temperature measurement is used today for conditions such as deep vein thrombosis of the legs[4,5] and the management of rheumatic conditions.[6,7] Infrared temperature measurement has also been used in research on headache,[8,9] dental,[10,11] and facial conditions.[12,13]

Modern infrared temperature measurement usually employs a scanning system to provide information of the surface temperature across a large area. The data can be rapidly transformed into a color-coded image which is displayed on a monitor and can be interpreted easily. Measurement and color-coded display of temperature is referred to as *thermography*.

‘Let’s get it in the mailbag, Phil’
The thrill of the chase

me
to write
to publish

Fax: (519) 746-7937
E-mail: optjourn@sciborg.uwaterloo.ca

Manuscript number: 92245

Manuscript title: Potential Applications of Ocular Thermography

1. What is the scientific (basic or clinical) contribution? Please elaborate. Yes. This is probably the finest paper that I have ever reviewed for any journal

2. Are there clinical implications? ☑ Yes ☐ No Are they clearly identified? ☑ Yes ☐ No

3. Is the purpose, problem or hypothesis clearly stated in the introduction? ☑ Yes ☐ No
   If not, how could it be clarified?

4. Would the methodology be readily understood by the average reader interested in this subject? ☑ Yes ☐ No
   Is the methodology appropriate to address the problem? ☑ Yes ☐ No

   The grammar is exquisite.

5. Are the results clearly presented? ☑ Yes ☐ No If not, please suggest improvements.

6. Is the discussion relevant to the purpose of the study and does it interpret the results of the context of previous scientific knowledge? ☑ Yes ☐ No

7. Are the tables and figures all necessary? ☑ Yes ☐ No If not, please suggest deletions.

   They are beautiful

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The grammar is exquisite.

5. Are the results clearly presented? ☑ Yes ☐ No If not, please suggest improvements.

8. Are the tables and figures clearly presented? ☑ Yes ☐ No How could they be improved?

9. Are the references relevant, complete and properly cited? ☑ Yes ☐ No Please detail any deficiencies.

10. Where treatment is indicated, is the treatment plan consistent with generally-accepted modes of therapy for this condition?
☐ Yes ☐ No Please elaborate.

N/A

11. Are the conclusions justified from the results and analysis? ☑ Yes ☐ No If not please indicate how the analysis could be strengthened.

12. Are the statistics appropriate and correctly used? ☑ Yes ☐ No Do you recommend a separate evaluation of the statistics by another reviewer? ☐ Yes ☑ No

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Contact Lens and Anterior Eye, Vol. 21, No. 1, pp. 3–6, 1998
Printed in Great Britain

THE OXYGEN PERFORMANCE OF CONTEMPORARY HYDROGEL CONTACT LENSES

Philip B. Morgan and Nathan Efron†*

(Received 31st July 1997; in revised form 11th September 1997)

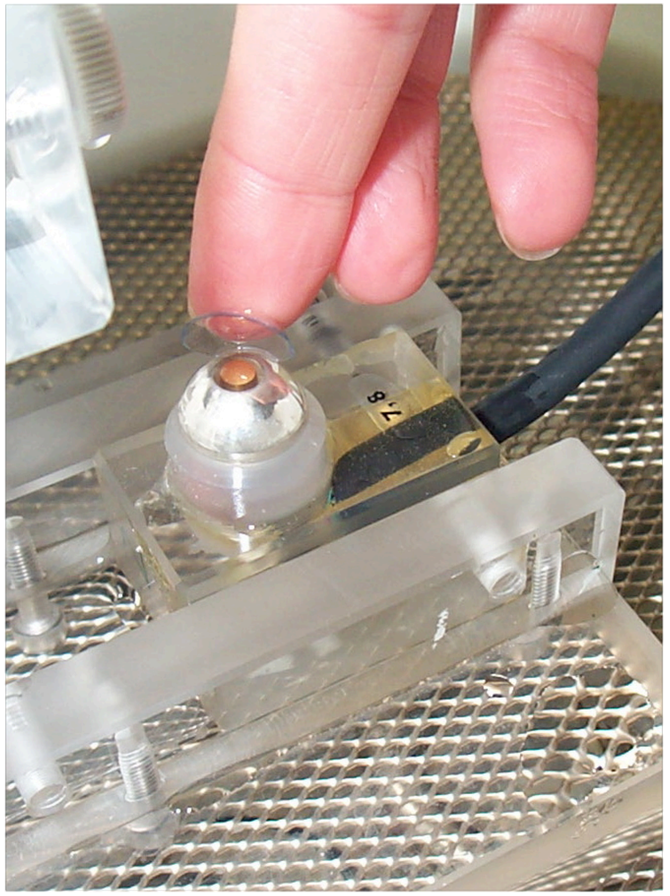
Abstract — *The oxygen performance of a hydrogel contact lens is arguably its most important property when considering the possible physiological response of the eye. However, information about this aspect of a contact lens can frequently be difficult to obtain, and there are numerous pitfalls in the interpretation and application of the available data. This paper presents the oxygen permeability and oxygen transmissibility of 17 different lens types as measured by one technician in one laboratory across a short time interval. The clear relationship between water content and oxygen permeability is confirmed, and the transmissibilities of three lens types across a wide power range are reported.*

KEY WORDS: permeability, transmissibility, oxygen, contact lens

Introduction

Twenty years of research into the effects of hydrogel lens wear on the ocular surface has clearly demonstrated that corneal hypoxia is implicated in the aetiology of many complications observed in contact

although recent evidence suggests that eye temperature does not reach this level.[6] Morgan[6] indicated that the mean ocular surface temperature in a normal population was 32.10 ± 0.53°C. The difference between this value and 35°C may have a modest effect on Dk measure-



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EXTENDED REPORT

Incidence of keratitis of varying severity among contact lens wearers

P B Morgan, N Efron, E A Hill, M K Raynor, M A Whiting, A B Tullo

Br J Ophthalmol 2005;**89**:430–436. doi: 10.1136/bjo.2004.052688

See end of article for authors' affiliations

Correspondence to: Philip B Morgan, Department of Optometry, The University of Manchester, PO Box 88, Manchester M60 1QD, UK; philip.morgan@manchester.ac.uk

Accepted for publication 29 August 2004

Aim: To determine the incidence of non-severe keratitis (NSK) and severe keratitis (SK) among wearers of current generation contact lenses.

Methods: A 12 month, prospective, hospital based epidemiological study was conducted by examining all contact lens wearers presenting with a corneal infiltrate/ulcer to a hospital centre in Manchester. A clinical severity matrix was used to differentiate between NSK and SK, based on the severity of signs and symptoms. The size of the hospital catchment population and the wearing modalities (daily wear (DW) or extended wear (EW)) and lens types being used were estimated from relevant demographic and market data.

Results: During the survey period, 80 and 38 patients presented with NSK and SK, respectively. The annual incidences (cases per 10 000 wearers) for each wearing modality and lens type were: DW rigid—NSK 5.7, SK 2.9; DW hydrogel daily disposable—NSK 9.1, SK 4.9; DW hydrogel (excluding daily disposable)—NSK 14.1, SK 6.4; DW silicone hydrogel—NSK 55.9, SK 0.0; EW rigid—NSK 0.0, SK 0.0; EW hydrogel—NSK 48.2, SK 96.4; EW silicone hydrogel—NSK 98.8, SK 19.8. The difference in SK between EW hydrogel and EW silicone hydrogel was significant ($p = 0.04$).

Conclusions: A clinical severity matrix has considerable utility in assessing contact lens related keratitis. There is a significantly higher incidence of SK in wearers who sleep in contact lenses compared with those who only use lenses during the waking hours. Those who choose to sleep in lenses should be advised to wear silicone hydrogel lenses, which carry a five times decreased risk of SK for extended wear compared with hydrogel lenses.

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CLINICAL AND EXPERIMENTAL
OPTOMETRY

ORIGINAL PAPER

Incidence and morbidity of hospital-presenting corneal infiltrative events associated with contact lens wear

Clin Exp Optom 2005; 88: 4: 232–239

Nathan Efron* PhD DSc
Philip B Morgan* PhD
Elizabeth A Hill* MOptom
Mathew K Raynor† FRCS(Ed)
Andrew B Tullo† MD FRCOphth
* Eurolens Research, The University of Manchester, UK
† Royal Eye Hospital, Manchester, UK

Submitted: 24 January 2005
Revised: 20 April 2005
Accepted for publication: 12 May 2005

Aim: To determine the incidence and morbidity (visual loss) of hospital-presenting corneal infiltrative events (CIEs) associated with the wearing of current generation contact lenses.

Methods: All contact lens wearers presenting with any form of corneal infiltrate/ulcer to a hospital centre in Manchester, UK, were surveyed in this 12-month, prospective, hospital-based epidemiological study. A clinical severity matrix was used to quantify the overall severity of presenting signs and symptoms. The size of the hospital catchment population and the wearing modalities (daily wear [DW] or extended wear [EW]) and lens types used in that population were estimated from relevant demographic and market data to facilitate the calculation of incidence. We also attempted to ascertain, from their eye care practitioners, the visual acuity (VA) of patients suffering from CIEs prior to and at about six months following attendance at the hospital.

Results: During the survey period, 118 patients presented with CIEs of varying severity. The annual incidence (cases per 10,000 wearers) for all wearing modalities and lens

Risk Factors for the Development of Corneal Infiltrative Events Associated with Contact Lens Wear

Philip B. Morgan,[1] Nathan Efron,[1] Noel A. Brennan,[2] Elizabeth A. Hill,[1] Mathew K. Raynor,[3] and Andrew B. Tullo[3]

Purpose. To identify risk factors for the development of corneal infiltrative events (CIEs) associated with contact lens wear, and to report other relevant clinical characteristics.

Methods. A series of symptomatic contact lens wearers presenting consecutively to a large hospital clinic over a 1-year period were examined. The clinical severity of any CIE was determined with a scoring system, and general and lens-specific information was captured with a questionnaire. Logistic regression analyses were performed to investigate the association between a range of risk factors and the occurrence of any CIE and the subset of cases categorized as severe keratitis. Three quasi-independent control groups were used for this analysis: hospital, lens-matched, and population. The relationship between clinical severity and the delay in attending the hospital was investigated. The prevalence of symptoms and initial actions taken by patients are reported.

Results. Factors identified as being associated with an increased risk of development of a CIE include: wearing modality/lens type (greatest risk for extended-wear hydrogel lenses of 7.1 vs. daily wear hydrogel lenses), male gender (relative risk 1.4), smoking (1.4), the absence of relevant ocular (1.8) and general health (2.4) problems, and the late winter months (greatest risk in March of 3.6 vs. July). The overall predictive value of these risk factors for a given individual was low. Shorter time delays in hospital attendance were associated with increasing severity of keratitis. Eye soreness was the most common initial symptom (prevalence 69%), and the most frequent

1040-5488/05/8206-0519$0 VOL. 82, NO. 6, PP. 519–527
OPTOMETRY AND VISION SCIENCE

ORIGINAL ARTICLES

The Size, Location, and Clinical Severity of Corneal Infiltrative Events Associated With Contact Lens Wear

NATHAN EFRON, PhD, DSc, FAAO, PHILIP B. MORGAN, PhD, FAAO, ELIZABETH A. HILL, MOptom, MATHEW K. RAYNOR, FRCS (Ed), and ANDREW B. TULLO, MD, FRCOphth

Eurolens Research, (NE, PBM, EAH), and Department of Ophthalmology (MKR, ABT), The University of Manchester, Manchester, United Kingdom

ABSTRACT: ***Purpose.*** **The purpose of this study is to determine the relationship between the size, location, and clinical severity of corneal infiltrative events (CIEs) associated with contact lens wear.** ***Methods.*** **We examined a series of contact lens wearers, presenting consecutively to a large hospital clinic, who had any form of CIE. The severity of the CIE was quantified using a clinical severity matrix based on scores attributed to each of 10 signs and symptoms. The infiltrate was accurately drawn on a schematic diagram of the ocular surface, and from this, we determined its size (i.e., largest dimension) and distance from the limbus. Cartograms were constructed to illustrate the size and location of the corneal infiltrates according to wearing modality and lens type.** ***Results.*** **Useable data pertaining to 111 patients were analyzed. A significant positive correlation was found between the distance of the infiltrate from the limbus versus clinical severity ($p = 0.002$), but not between the distance of the infiltrate from the limbus versus infiltrate size ($p = 0.97$). The cartograms revealed a tendency for infiltrates to occur in the superior cornea of patients wearing extended wear silicone hydrogel lenses ($p = 0.0002$) in the central cornea of patients wearing daily wear hydrogel daily

ORIGINAL ARTICLE

Impact of Differences in Diagnostic Criteria When Determining the Incidence of Contact Lens-Associated Keratitis

NATHAN EFRON, PhD, DSc, FAAO, and PHILIP B. MORGAN, PhD, FAAO

Eurolens Research, The University of Manchester, Manchester, United Kingdom

ABSTRACT

Purpose. The purpose of this study is to examine the effect of differences in within-study and between-study diagnostic criteria in determining the incidence of contact lens-associated keratitis.

Methods. We applied the sets of criteria for "microbial keratitis" as described in five previous studies to the dataset of Morgan et al., which documents 118 cases of contact lens-associated keratitis across a wide range of clinical severities. For each set of criteria, the incidence of contact lens-associated keratitis was calculated for the following five lens type/modality combinations: daily-wear rigid, daily-wear daily disposable hydrogel, daily-wear hydrogel, extended-wear hydrogel, and extended-wear silicone hydrogel. The effect of varying the clinical severity score for the differentiation of nonsevere versus severe keratitis was also examined with respect to the dataset of Morgan et al.

Results. The size and location of the corneal infiltrative events identified as representing "microbial keratitis" for each of the different sets of criteria are illustrated in a series of cartograms. A key between-study difference in the incidence values calculated for the various sets of criteria relates to the categories of extended-wear hydrogel and extended-wear silicone hydrogel lenses. Specifically, the incidence of "microbial keratitis" was found to be statistically significantly greater for extended-wear hydrogel compared with extended-wear silicone hydrogel lenses when the set of criteria of Morgan et al. was applied, but not when the other sets of criteria were applied, to the dataset of Morgan et al. Increasing the threshold clinical severity criterion for differentiating between nonsevere and severe keratitis within this dataset resulted in lower

CLINICAL AND EXPERIMENTAL
OPTOMETRY

INVITED REVIEW

Rethinking contact lens associated keratitis

Clin Exp Optom 2006; 89: 5: 280–298 DOI:10.1111/j.1444-0938.2006.00069.x

Nathan Efron* PhD DSc
Philip B Morgan* PhD
* School of Optometry, Queensland University of Technology, Brisbane, Australia
† Eurolens Research, The University of Manchester, UK
E-mail: n.efron@qut.edu.au

This review presents a critical analysis of the literature relating to the use of binomial and polynomial classification schemes for categorising corneal infiltrative events (CIEs) associated with contact lens wear and the epidemiology of such events. The results of the Manchester Keratitis Study—a 12-month, prospective, hospital-based epidemiological study of contact lens wearers suffering from CIEs—are used as a tool to challenge and test traditional thinking in relation to contact lens associated keratitis. An innovative aspect of this study is the use of a novel clinical severity matrix to systematically score the severity of CIEs based on 10 key signs and symptoms. The ambiguities inherent in using binomial classification schemes (such as, microbial versus sterile, ulcerative versus non-ulcerative et cetera) are highlighted. The failure of a polynomial scheme—due to extensive classification overlap between proposed sub-types of CIEs—is demonstrated using a Venn diagram. A cartographic analysis reveals that infiltrates tend to occur in the superior cornea of patients wearing extended wear silicone hydrogel lenses, in the central cornea of patients wearing daily wear hydrogel daily disposable lenses and in the peripheral cornea of patients wearing daily wear hydrogel (excluding daily disposable) lenses. Infiltrates that occur more towards the limbus are less severe. The incidence of CIEs is higher when contact lenses are worn overnight. Logistic analysis reveals that the risk of developing a severe CIE is five times greater with conventional hydrogel extended wear versus silicone hydrogel extended wear. The male gender, smoking, a healthy eye and body, and the late Winter months are associated with an increased risk of developing

CLINICAL SCIENCE

Can Subtypes of Contact Lens–Associated Corneal Infiltrative Events Be Clinically Differentiated?

Nathan Efron, PhD, DSc and Philip B. Morgan, PhD

Purpose: A schema has recently been described for the clinical differentiation among 4 symptomatic subtypes of contact lens–associated corneal infiltrative events (CIEs): microbial keratitis (MK), contact lens–induced peripheral ulcer (CLPU), contact lens–induced acute red eye (CLARE), and infiltrative keratitis (IK). The clinical utility of this schema has been challenged in the literature. The aim of this study is to determine whether it is possible to clinically differentiate among these conditions.

Methods: Criteria for MK, CLPU, CLARE, and IK were applied to a data set of 111 contact lens–associated CIEs, spanning a wide range of clinical severities, presenting consecutively to a hospital clinic. A Venn diagram analysis was used to determine the extent to which these conditions can be clinically differentiated.

Results: Of the 111 CIEs, 20% could be classified unambiguously as MK, CLPU, CLARE, or IK; 56% could be classified as 1 of 2 conditions, 13% could be classified as 1 of 3 conditions, and 0% could be classified as 1 of 4 conditions. Eleven percent of CIEs could not be classified as any of the 4 conditions.

Conclusions: Although the etiology of CIEs is multifactorial, the considerable overlap between the clinical presentation of MK, CLPU, CLARE, and IK is such that it is not possible to clinically

the past, clinicians and researchers have adopted binomial systems for classifying CIEs such as microbial versus sterile,[2] infective versus sterile,[3] ulcerative versus nonulcerative,[4] and suppurative versus nonsuppurative.[5]

It is extremely difficult to clinically diagnose CIEs as being microbial or infective; to do so requires positive identification of the infective agent and proof that the condition being observed was directly caused by that agent. The standard procedure for effecting such a diagnosis is to attempt a corneal scrape and perform a culture for evidence of pathogenic microorganisms. Previous studies investigating the efficacy of corneal scraping in cases of presumed MK have demonstrated a culture positive rate of less than 50% of cases of presumed MK (based on clinical signs and symptoms).[2,4,6] The culture negative findings must be due to (1) there being an absence of microorganisms, or (2) microorganisms being present but not harvested in the course of the scraping procedure. Furthermore, a positive culture may indicate the presence of potentially pathogenic microorganisms which were cultured coincidentally and which were unrelated to the CIE.

CLINICAL SCIENCE

Chronic Morbidity of Corneal Infiltrative Events Associated With Contact Lens Wear

Nathan Efron, PhD, DSc, Philip B. Morgan, PhD,† and Dimitra Makrynioti, MSc†*

Purpose: To determine the chronic morbidity of corneal infiltrative events (CIEs) associated with contact lens wear.

Methods: The central corneas of both eyes of 13 subjects who had suffered a CIE 27 ± 4 months previously were examined by using slit-lamp biomicroscopy, confocal microscopy, and ultrasound pachometry. Snellen visual acuity was recorded in both eyes. A questionnaire was administered to ascertain the type and extent of changes in contact lens wear and care since suffering from the CIE.

Results: Slit-lamp biomicroscopy revealed the presence of a circular scar, ~1.5 mm in diameter, in the central cornea of the right eye of the patient who had suffered the most clinically severe CIE; no residual scar, or any other abnormality, was detected in any of the other 12 patients. No significant difference between the 2 eyes was found with respect to basal epithelial cell density; anterior or posterior keratocyte density; endothelial cell density, polymegethism, or pleomorphism; corneal thickness; or visual acuity. Anecdotally, however, markedly reduced pan-corneal cell counts, increased endothelial polymegethism, and reduced corneal thickness were observed in the affected eye of the patient who had suffered the most clinically severe CIE.

Although the incidence of keratitis associated with contact lens wear is low,[1–3] clinicians need to be able to recognize such events when they do occur, initiate timely and effective management plans, and formulate accurate prognoses. The principal diagnostic sign of contact lens–associated keratitis is the appearance of infiltrates in the cornea, which in the early stages are usually located at the level of the basal epithelium or anterior stroma.[4] The clinical severity of such conditions can range from mild self-limiting forms of little or no clinical consequence to severe and debilitating "microbial keratitis," resulting in permanent vision loss. The more generic term "corneal infiltrative event" (CIE) has been used in the recent literature[5–8] to encompass all levels of severity of this condition. For reasons that we have explained in detail elsewhere,[9,10] we are interested in the full spectrum of disease severity and shall therefore use the term CIE in this article.

The key measure of morbidity in relation to the development of a CIE is whether there is any permanent vision loss. For clinical and medico-legal reasons, measurement of vision is critical during the acute phase of a CIE, such as at the time of initial presentation and during the treatment phase. Nevertheless, such measures do not provide a useful

THE Sun

22nd March 2005

Contact lens alert

EXPERTS are warning people who regularly fall asleep wearing contact lenses to switch to a new type – or risk blindness.

Dozing off wearing lenses can lead to sight-threatening infections.

But new ones made of silicone-gel slash the risk by allowing more oxygen to the pupil, a study of 100 eye patients revealed.

Dr Philip Morgan, of Manchester's Royal Eye Hospital, said: "Those who sleep in lenses should wear silicone hydrogel lenses, which carry a five times decreased risk."

The New York Times

 TUESDAY, MARCH 29, 2005

RISKS AND REMEDIES

Rest Assured: A Lens Lesson

It is widely known that people who sleep wearing contract lenses are taking a risk that they could end up with a serious infection.

But a newer generation of contact lenses has a much lower risk, a new study finds, and researchers studying them suggest that people who insist on wearing contacts in their sleep should use them. The study, led by Dr. Philip B. Morgan of the University of Manchester in England, appears in The British Journal of Ophthalmology.

The researchers said that among people using extended-wear contact lenses made from silicone hydrogel, the risk of serious infection was only about a fifth as great as it was for people wearing lenses made from just hydrogel.

The researchers arrived at their findings after spending a year surveying patients who came into a Manchester hospital for eye treatment. The patients were asked about their contact lens use, including what kind they wore and whether they ever slept in them. Dr. Morgan said that his research was supported by the contact lens industry but that the study looked only at generic contact lenses, not those with brand names.

The doctors examined patients' corneas for injury and infection, comparing the severity of injury with patients' lens-wearing habits.

While the patients who slept in silicone hydrogel lenses unquestionably did better than those who slept in other lenses, the findings were hardly an endorsement for leaving lenses in at night. The study found a significantly higher incidence of serious infection among all people who wore contacts while they slept, compared with those who used them only in waking hours.

The main difference between silicone hydrogel lenses and others, the study noted, is that they are more adept at letting oxygen pass through. So the findings lend support to a theory that if the cornea is deprived of enough oxygen, it can develop an infection.

Though disposable contact lenses are becoming increasingly popular, the study did not find them any safer in terms of infection.

Manchester Evening News

Wednesday, March 23, 2005 www.manchesteronline.co.uk 30

M.E.N. Wednesday, March 23, 2005

Choice is clear for contacts wearers

BY DON FRAME

PIONEERING research at Manchester's Royal Eye Hospital has given new hope to contact lens wearers.

The industry has been working to produce lenses which can be worn round the clock.

A drawback has been that sleeping in contact lenses carries a significant risk of severe eye infection – keratitis. But a year-long study of patients with acute eye problems at the Royal Eye Hospital has shown that new generation silicone type lenses cut the risk five-fold.

Dr Philip Morgan, one of the researchers involved in the study, said: "It's a completely natural desire for anyone to want to enjoy as natural a lifestyle as they possibly can, whatever their problems. The results of our study we believe, are good news for people who want to wear contact lenses around the clock."

Researchers involved in the study looked at four different types of contact lens: rigid, hydrogel daily disposable, hydrogel and silicone hydrogel.

Specialists scored eye problems on the cornea according to their severity, with a score above 8 indicating keratitis.

Eighty were scored below eight, defined as non severe keratitis,

REUTERS UK

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Latest contact lenses cut infection risk

Tue Mar 22, 2005 04:02 AM GMT

Printer Friendly | Email Article | RSS XML

LONDON (Reuters) - A new generation of contact lenses can significantly reduce the risk of severe eye infections, researchers have said.

Wearers who keep their lenses in overnight can develop keratitis -- inflammation or irritation of the cornea -- but scientists found the new ones cut that risk fivefold.

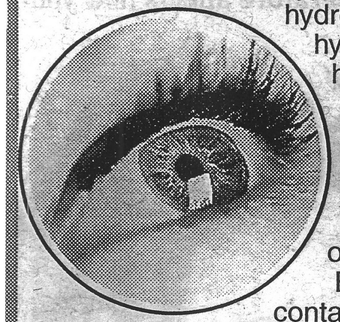
DAILY EXPRESS

END OF THE SUPERMODEL PAGES 40&41 The World's Greatest Newspaper

A lens to make sense

THE latest silicone hydrogel contact lenses are much less likely than others to cause severe infections, says a new study in the British Journal of Ophthalmology.

University of Manchester researchers tested four types of lenses – rigid, hydrogel daily disposable, hydrogel and silicone hydrogel. They found no significant difference in the risk of eye infection between the different types of lenses among people who wore them only during the day.



But people who wore contact lenses for longer periods were five times less likely to get eye infections if they used the silicone hydrogel variety.

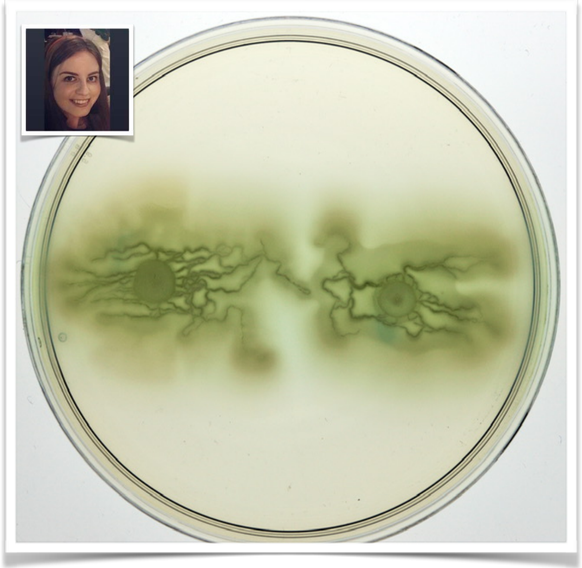
THE TIMES

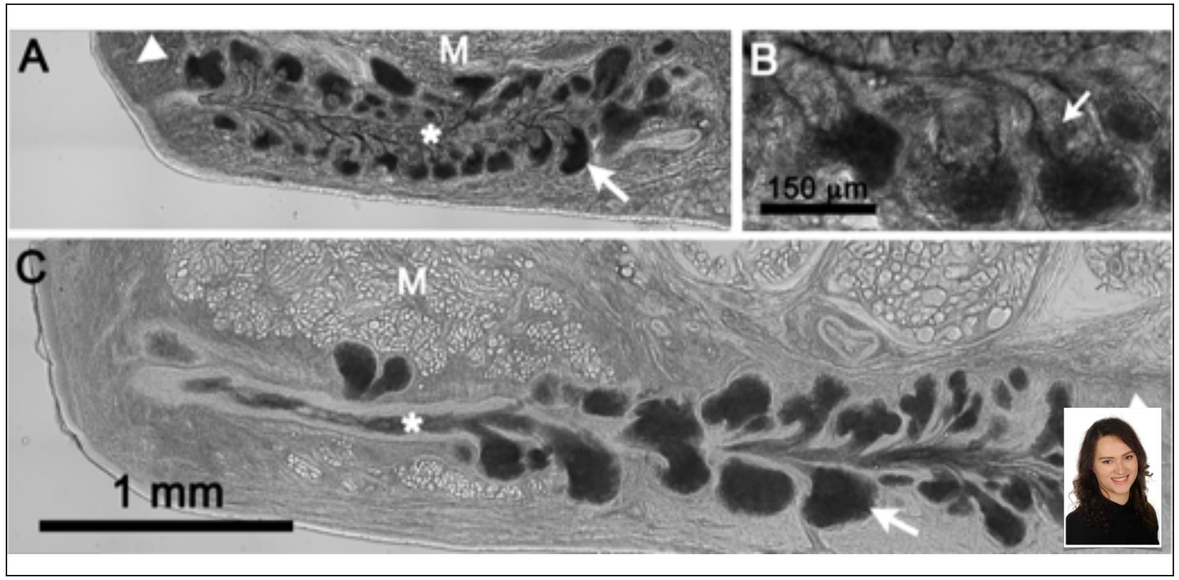
DOCTOR'S ORDERS

REMOVE your contact lenses before you go to bed – it might cut your risk of developing infections and irritations. Researchers from the University of Manchester, writing in the *British Journal of Ophthalmology*, report that the risk of severe keratitis (corneal infections, irritations and inflammations) increased when the wearer slept with their lenses still in. The risk varied with the type of lenses used, too.

www.manchester.ac.uk

me
to learn

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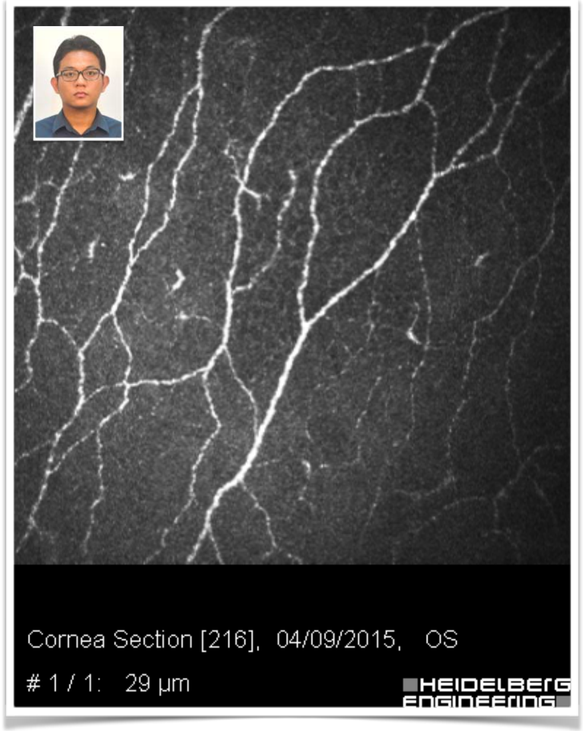
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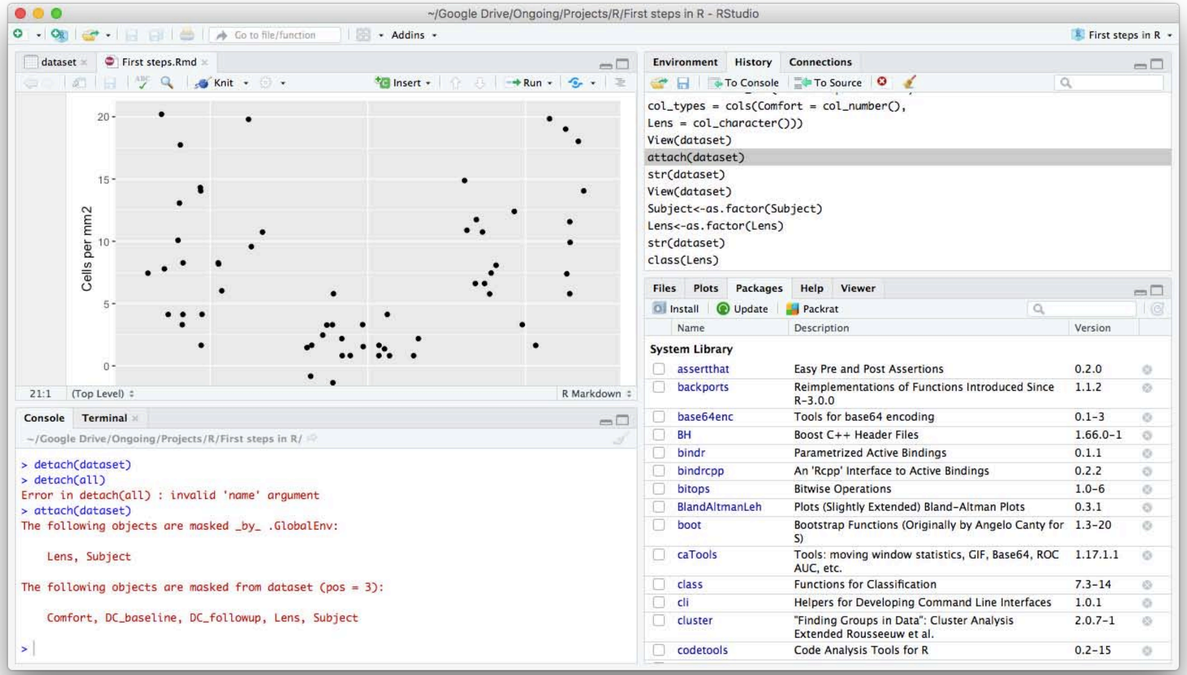
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Cells per mm2
col_types = cols(Comfort = col_number(),
Lens = col_character()))
View(dataset)
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View(dataset)
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Lens<-as.factor(Lens)
str(dataset)
class(Lens)
> detach(dataset)
> detach(all)
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> attach(dataset)
The following objects are masked _by_ .GlobalEnv:
Lens, Subject
The following objects are masked from dataset (pos = 3):
Comfort, DC_baseline, DC_followup, Lens, Subject

me
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net lectures

delivering knowledge

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The College of Optometrists

Making the grade: recording contact lens complications

Philip B Morgan PhD McOptom FAAO

20 min

Place CD in the CD-ROM drive of your PC and follow the instructions on screen. Windows only

Netlectures Limited 1999-2003

UGT and PGT
to educate

MANCHESTER 1824
The University of Manchester

Andrasko Staining Grid

Percentage of Average Corneal Staining Area at 2 Hours

		Branded Solutions										Private Label Solutions			
		Unisol[1] 4 Saline	Clear Care[4]	OPTI-FREE® *EXPRESS*[7]	OPTI-FREE® RepleniSH[1]	OPTI-FREE® PureMoist[1]	Biotrue[3]	Renu Fresh[3]	Renu Sensitive[3]	Complete MPS[2]	Aquify[4]	Walmart MPS	Target MPS	CVS MPS (Renu M+)	Walgreen MPS
Hydrogel	Acuvue®[5] 2	1%	1%	2%	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
	Proclear®[6]	1%	1%	1%	2%	1%	28%	57%	23%	6%	12%	61%	54%	53%	42%
	Soflens[3] 66	1%	1%	1%	1%	1%	52%	73%	32%	17%	8%	66%	62%	63%	56%
Silicone-Hydrogels	Acuvue Advance®[5]	1%	1%	1%	1%	1%	9%	13%	4%	12%	2%	16%	13%	12%	12%
	Acuvue Oasys®[5]	2%	1%	3%	5%	2%	1%	9%	5%	4%	3%	12%	8%	13%	10%
	Biofinity®[6]	2%	2%	3%	2%	1%	17%	4%	2%	2%	2%	4%	3%	3%	2%
	Purevision[3]	2%	1%	4%	7%	3%	46%	73%	43%	15%	21%	71%	76%	No Testing Planned	No Testing Planned
	O2 Optix®[4]	2%	1%	2%	5%	1%	21%	24%	7%	3%	3%	41%	28%	28%	24%
	Night & Day®[4]	2%	1%	2%	3%	1%	17%	24%	11%	1%	3%	36%	24%	26%	22%
	Updated: August 19, 2011		H_2O_2		POLYQUAD/ALDOX		PHMB/ Polyquaternium			BIGUANIDES (PHMB)					

PHMB

Staining Zone Color Codes

under 10% | 10% to 20% | over 20%

Trademarks: 1 Alcon; 2 AMO; 3 Bausch & Lomb; 4 Novartis; 5 Johnson & Johnson; 6 CooperVision

Data Courtesy of: www.StainingGrid.com

Khan et al., 2018

MANCHESTER 1824
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Tetronic 1107

Tetronic 1107

		Branded Solutions										Private Label Solutions			
		Unisol[1] 4 Saline	Clear Care[4]	OPTI-FREE® *EXPRESS*[1]	OPTI-FREE® RepleniSH[1]	OPTI-FREE® PureMoist[1]	Biotrue[3]	Renu Fresh[3]	Renu Sensitive[3]	Complete MPS[2]	Aquify[4]	Walmart MPS	Target MPS	CVS MPS (Renu M+)	Walgreen MPS
Hydrogel	Acuvue[5] 2	1%	1%	2%	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
	Proclear[6]	1%	1%	1%	2%	1%	28%	57%	23%	6%	12%	61%	54%	53%	42%
	Soflens[3] 66	1%	1%	1%	1%	1%	52%	73%	32%	17%	8%	66%	62%	63%	56%
Silicone-Hydrogels	Acuvue Advance[5]	1%	1%	1%	1%	1%	9%	13%	4%	12%	2%	16%	13%	12%	12%
	Acuvue Oasys[5]	2%	1%	3%	5%	2%	1%	9%	5%	4%	3%	12%	8%	13%	10%
	Biofinity[6]	2%	2%	3%	2%	1%	17%	4%	2%	2%	2%	4%	3%	3%	2%
	Purevision[3]	2%	1%	4%	7%	3%	46%	73%	43%	15%	21%	71%	76%	No Testing Planned	No Testing Planned
	O2 Optix[4]	2%	1%	2%	5%	1%	21%	24%	7%	3%	3%	41%	28%	28%	24%
	Night & Day[4]	2%	1%	2%	3%	1%	17%	24%	11%	1%	3%	36%	24%	26%	22%
Updated: August 19, 2011			H_2O_2	POLYQUAD/ALDOX			PHMB/ Polyquaternium	BIGUANIDES (PHMB)							

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Data Courtesy of: www.StainingGrid.com

Khan et al., 2018

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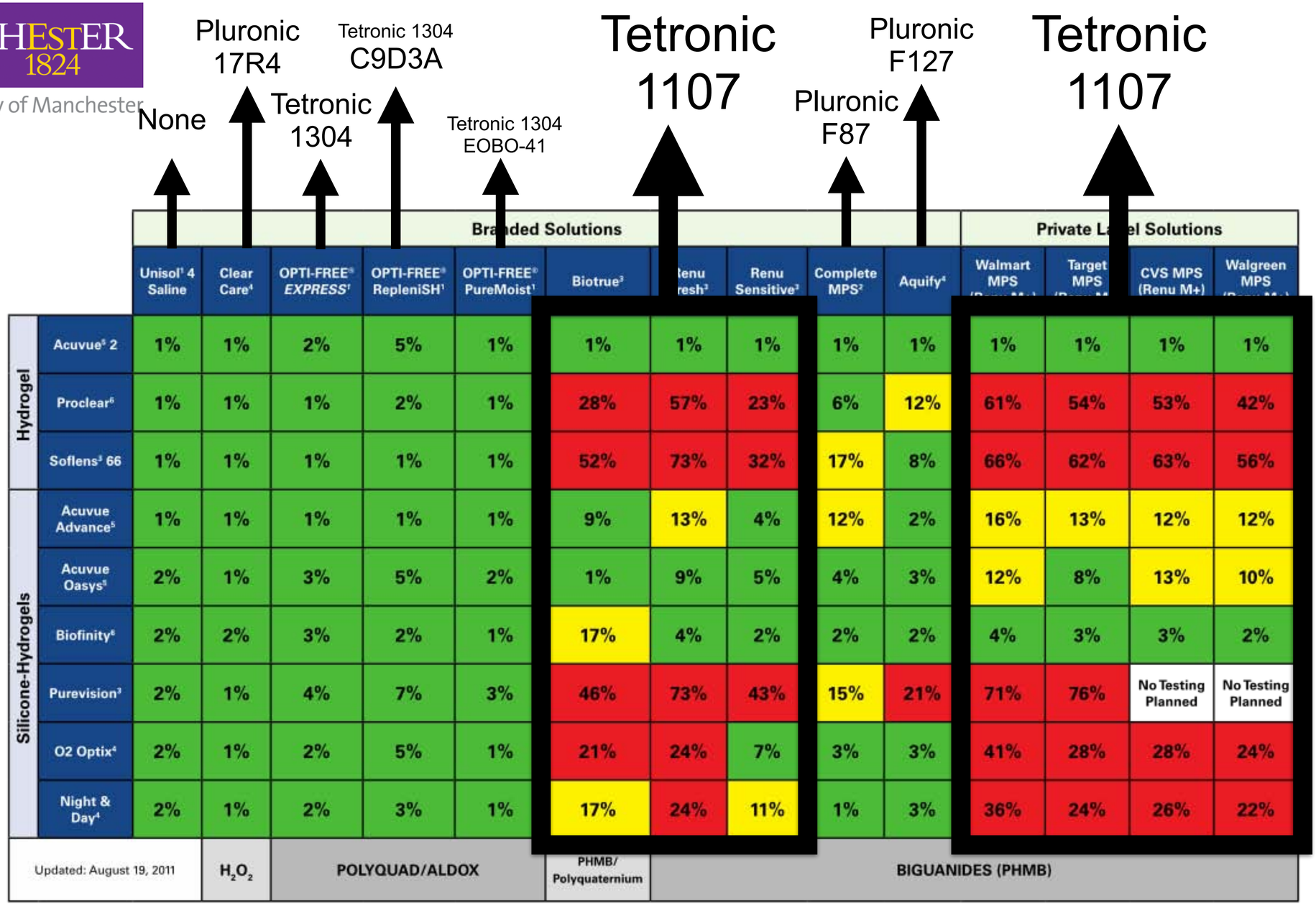

Staining Zone Color Codes

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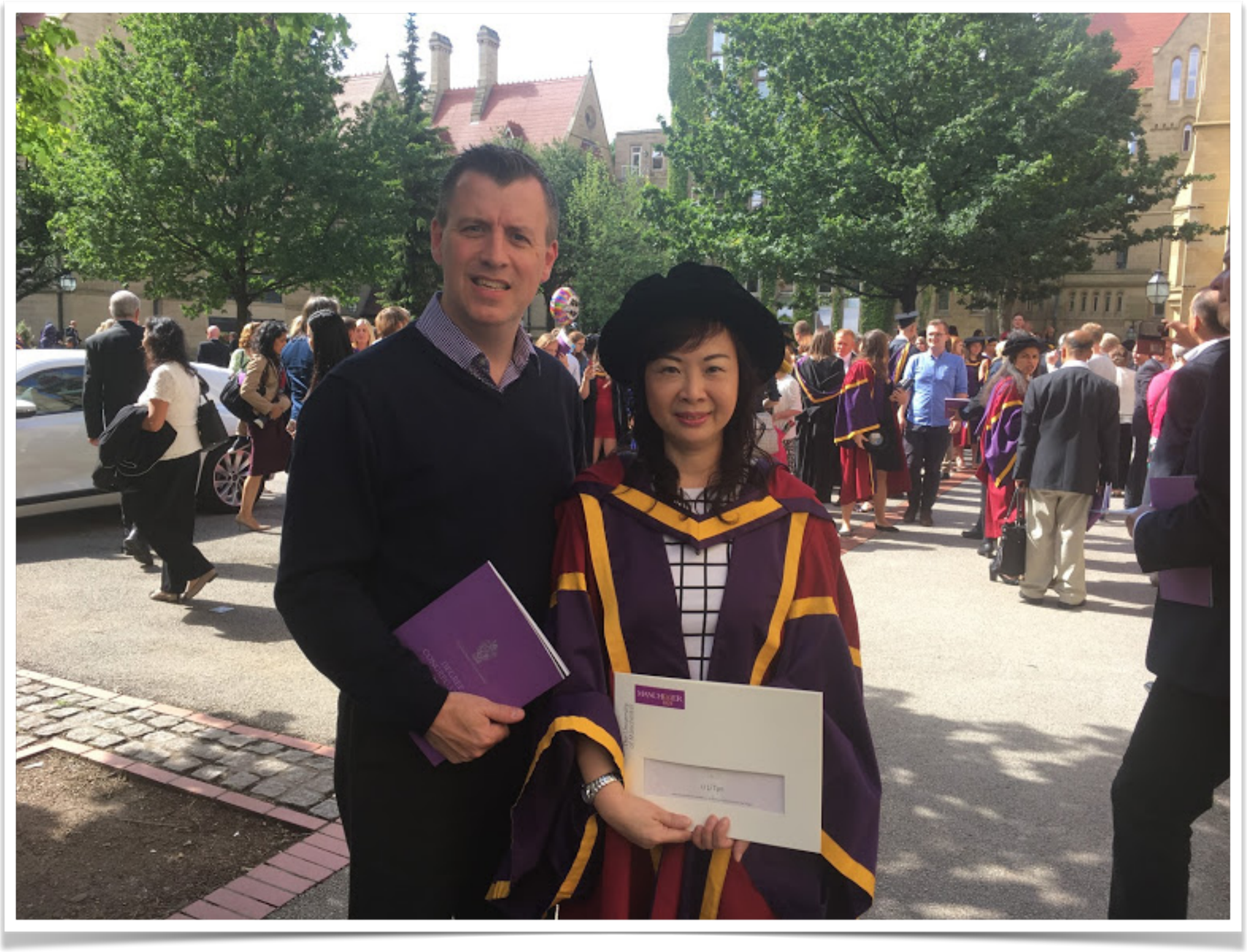
Data Courtesy of: www.StainingGrid.com

Khan et al., 2018

PGR
to inspire



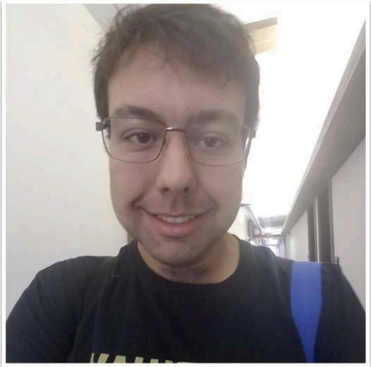
Dimitra Makrynioti

Mera Haddad

Michael Read

Mick Kelly

May Bakkar



Harry Milton

Tan Li Li

Maria Navascues Cornago

Tahmina Khan

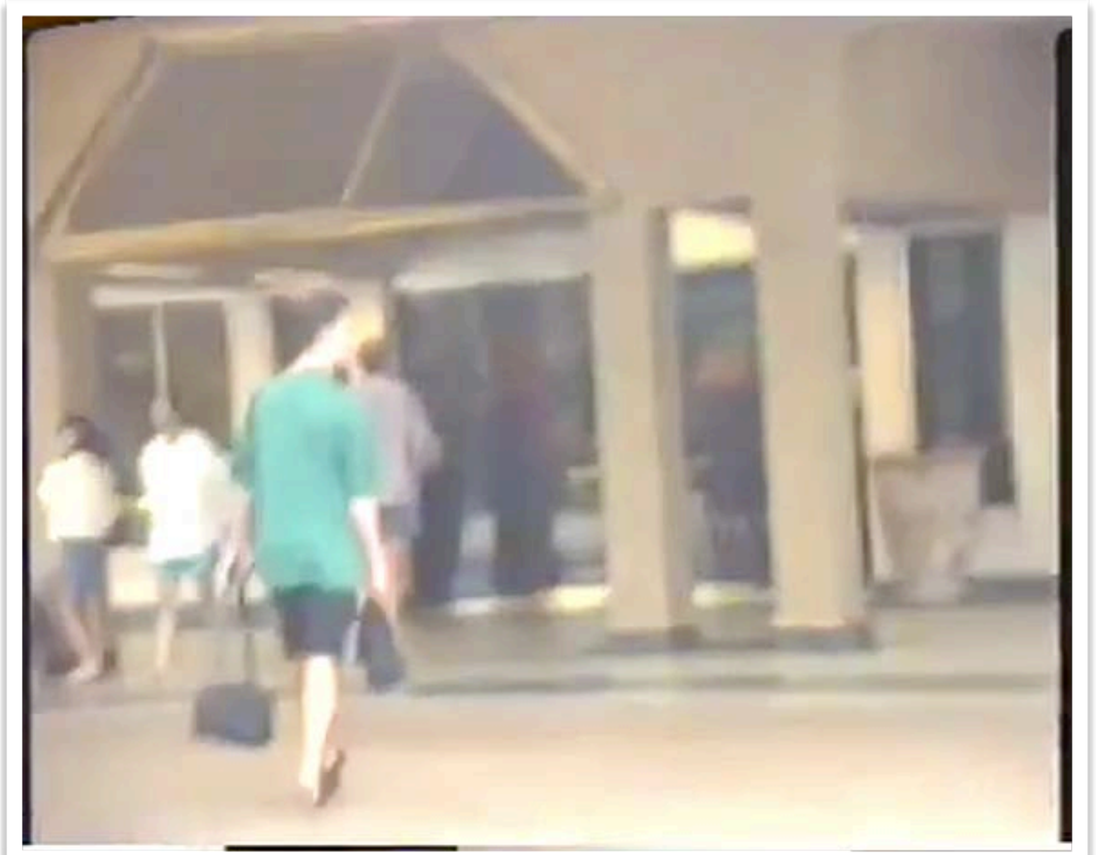
Devesh Mistry

Noor Haziq Saliman

Victoria Rimmer

Kasandra Świderska

optometrists and ECPs
to share



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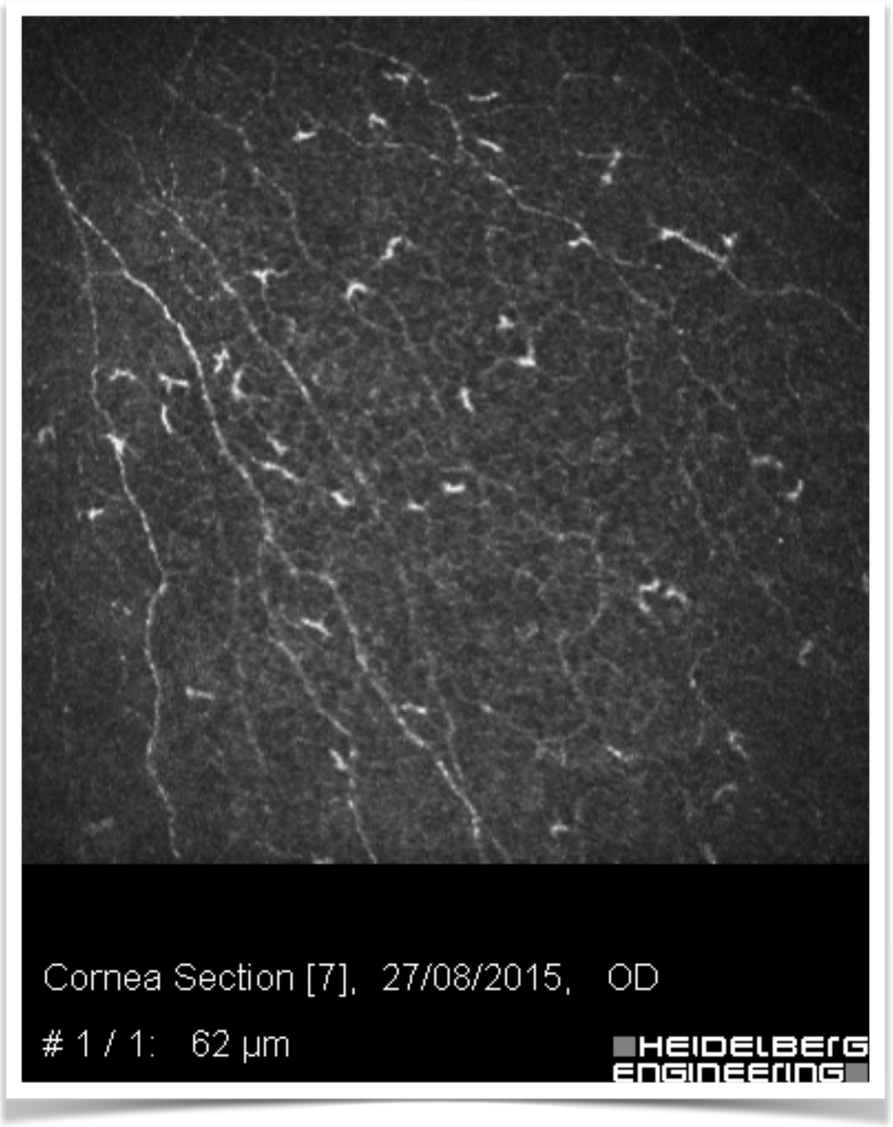
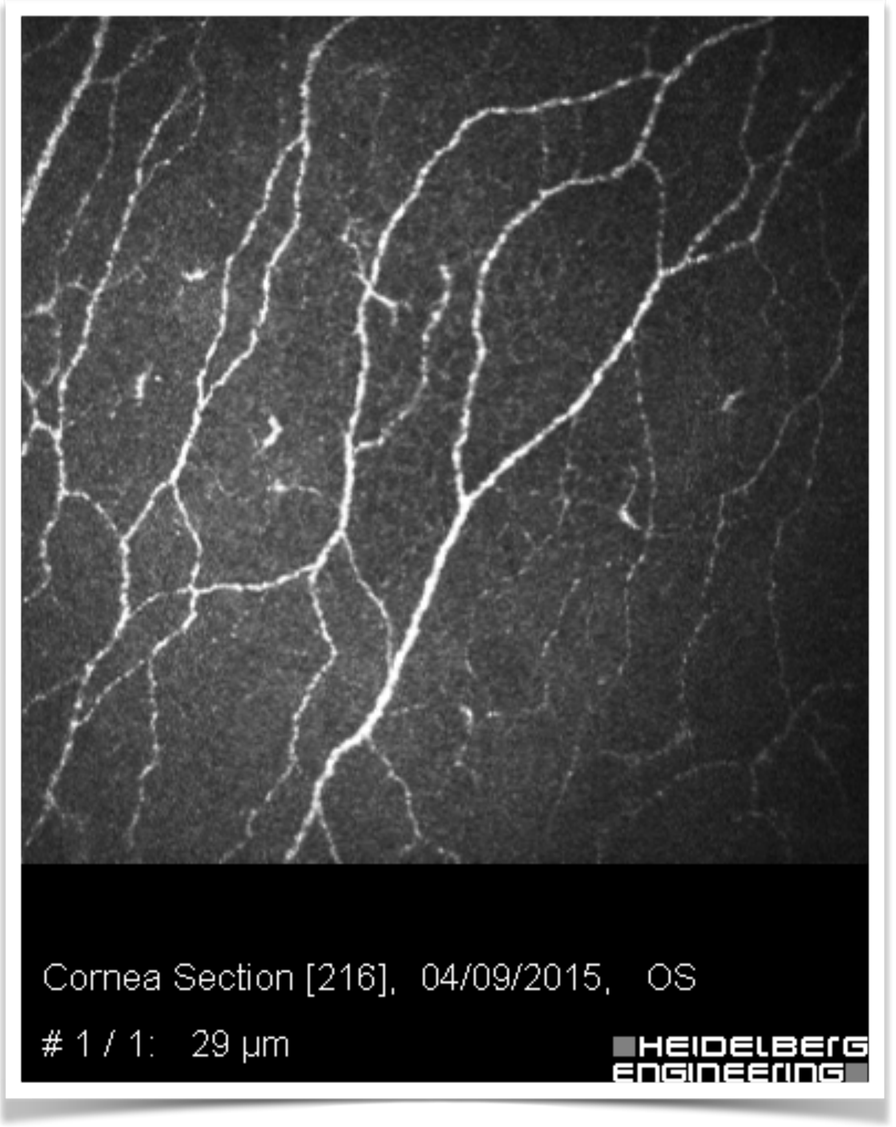
Haziq Saliman





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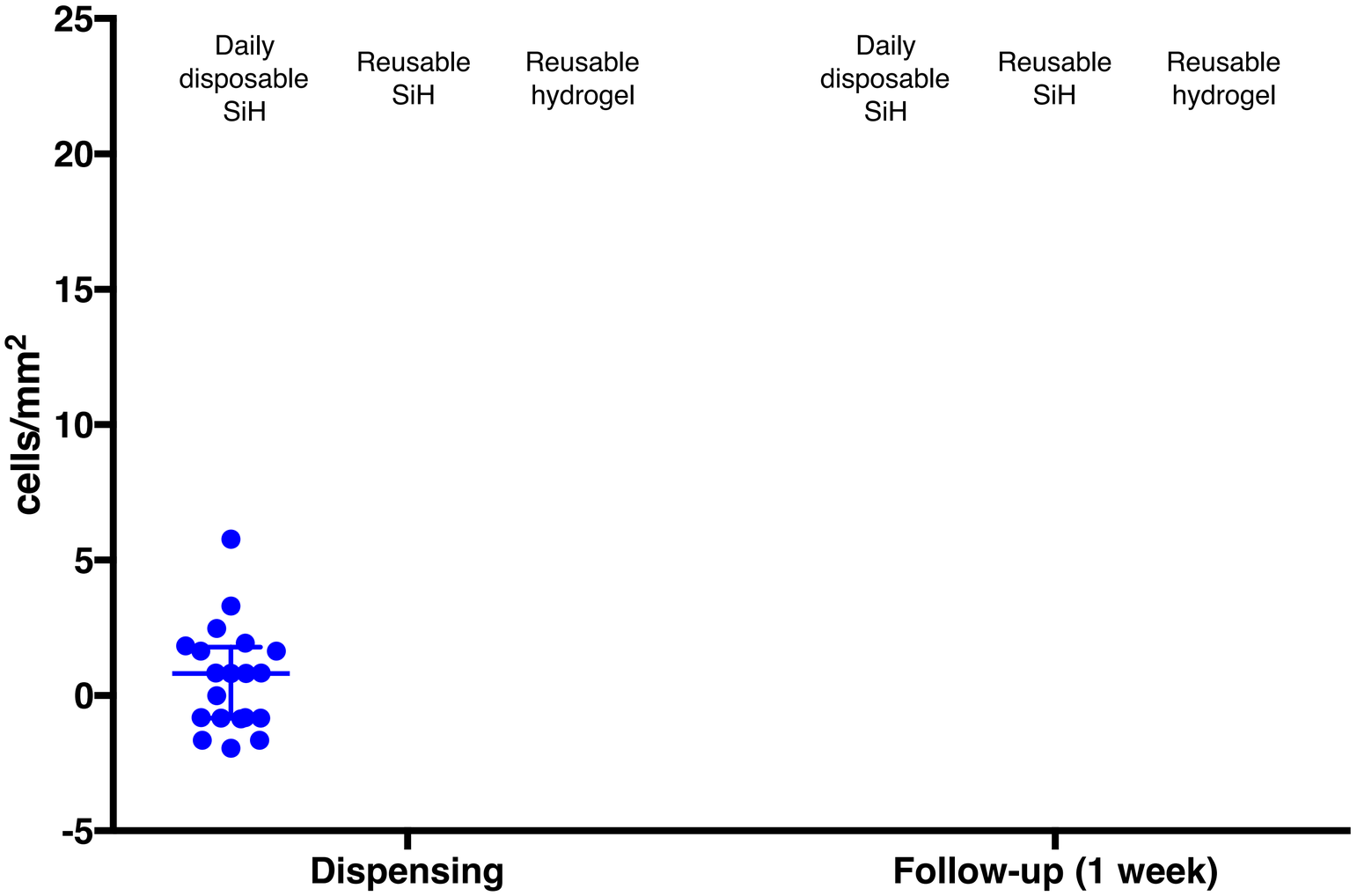
Corneal dendritic cells



Saliman, Maldonado-Codina, Macdonald, Morgan
Accepted for publication in Cornea

optometrists and ECPs to share

Survey of contact lens prescribing 2019

If you do not fit contact lenses, please pass this to a colleague who does!

Please complete the questions below, and then record the details of the first ten patients you fit with contact lenses.

Your country	Date of survey receipt	Job title	How many years…	What type of practice do you mainly work in?
UK		❑ Optometrist ❑ Optician ❑ Ophthalmologist ❑ Other:	Qualified: Fitting contact lenses:	❑ independent (1 – 9 practices) ❑ regional (10 – 49 practices) ❑ national/chain (50 or more practices)

						Tick one box only					*Tick one box only*				*Tick as many boxes as apply*								*Tick one box only*							*Tick one*		*Tick one box only*			
General information[1]						Rigid/hard lenses					Soft lenses[2]				Lens design[3]								Replacement frequency						Times per week lenses likely to be worn[4]	Modality[5]		Care system			
Date	Px	Age	Sex	New	Refit	Scleral	PMMA	RGP Dk <40	RGP Dk 40-90	RGP Dk >90	Conventional <40%	Conventional 40-60	Conventional >60%	Silicone hydrogel	Sphere	Toric	Multi-focal	Mono-vision	Cos-metic tint	Std. OK[1]	Myopia control[1]	Other	Daily	1-2 weeks	1 month	3-6 months	12 months	Un-planned		Daily wear	Ex-tended wear	Multi pur-pose	Per-oxide	Other	None
	1																																	
	2																																	
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	10																																	

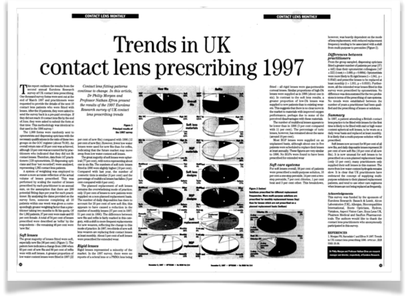
Some explanatory notes

1. **New fits and refits.** A ‘new fit’ is someone with no previous lens experience, or who has not worn lenses for a number of years. ‘Refits’ are existing wearers who are fitted because their wearing pattern has changed, they are keen to try another lens type, as a problem solver etc.
2. **Soft lenses.** These are split into ‘silicone hydrogels’ and ‘conventional’ materials. Conventional materials are listed with their water contents.
3. **Lens design.** Tick as many boxes as needed in this category. ‘Std OK’ refers to standard refractive correction with orthokeratology. ‘Myopia control’ includes the fitting of orthokeratology or special soft lens designs specifically to arrest myopia progression.
4. **Times per week lenses likely to be worn.** If daily wear, please indicate how many days per week; if extended wear, indicate the number of nights slept in per week. Maximum value = 7.
5. **Modality.** A patient who will sleep in their lenses occasionally is still classed as ‘extended wear’.

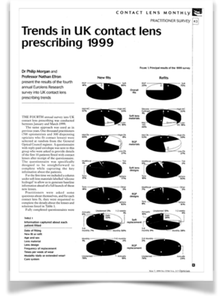
When complete, please take a photo of the form and send to results@contactlensprescribing.com

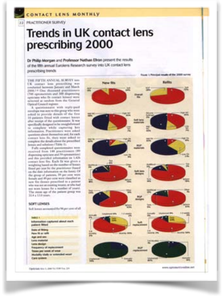
For any queries, contact Philip Morgan at the University of Manchester: philip.morgan@manchester.ac.uk

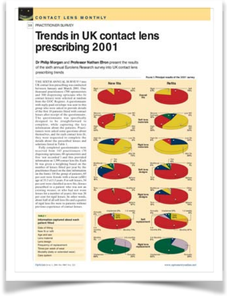

Trends in UK contact lens prescribing 1996

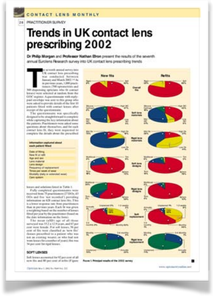

Trends in UK contact lens prescribing 1997


Trends in UK contact lens prescribing 1998


Trends in UK contact lens prescribing 1999


Trends in UK contact lens prescribing 2000


Trends in UK contact lens prescribing 2001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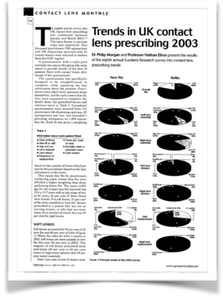
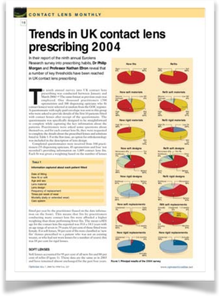

Trends in UK contact lens prescribing 2003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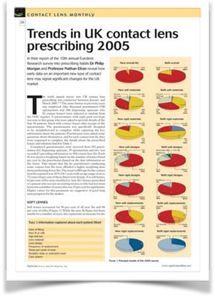
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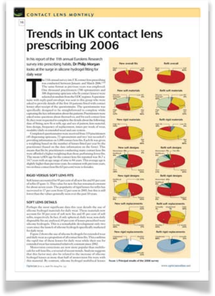
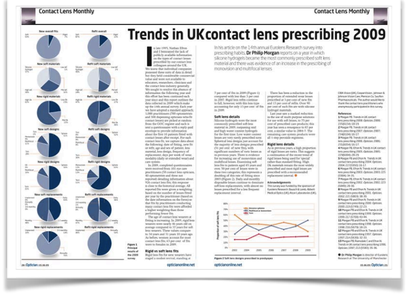

Trends in UK contact lens prescribing 2006


Trends in UK contact lens prescribing 2007


Trends in UK contact lens prescribing 2008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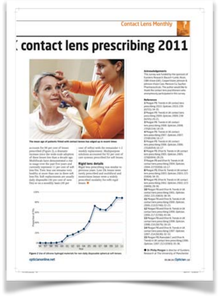
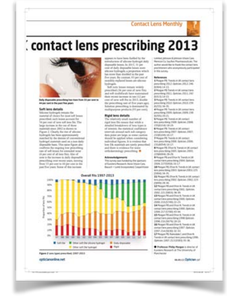
Trends in UK contact lens prescribing 2010


contact lens prescribing 2011


contact lens prescribing 2012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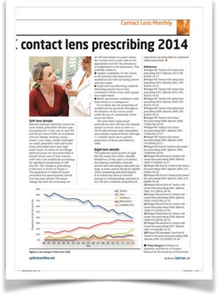

contact lens prescribing 2014

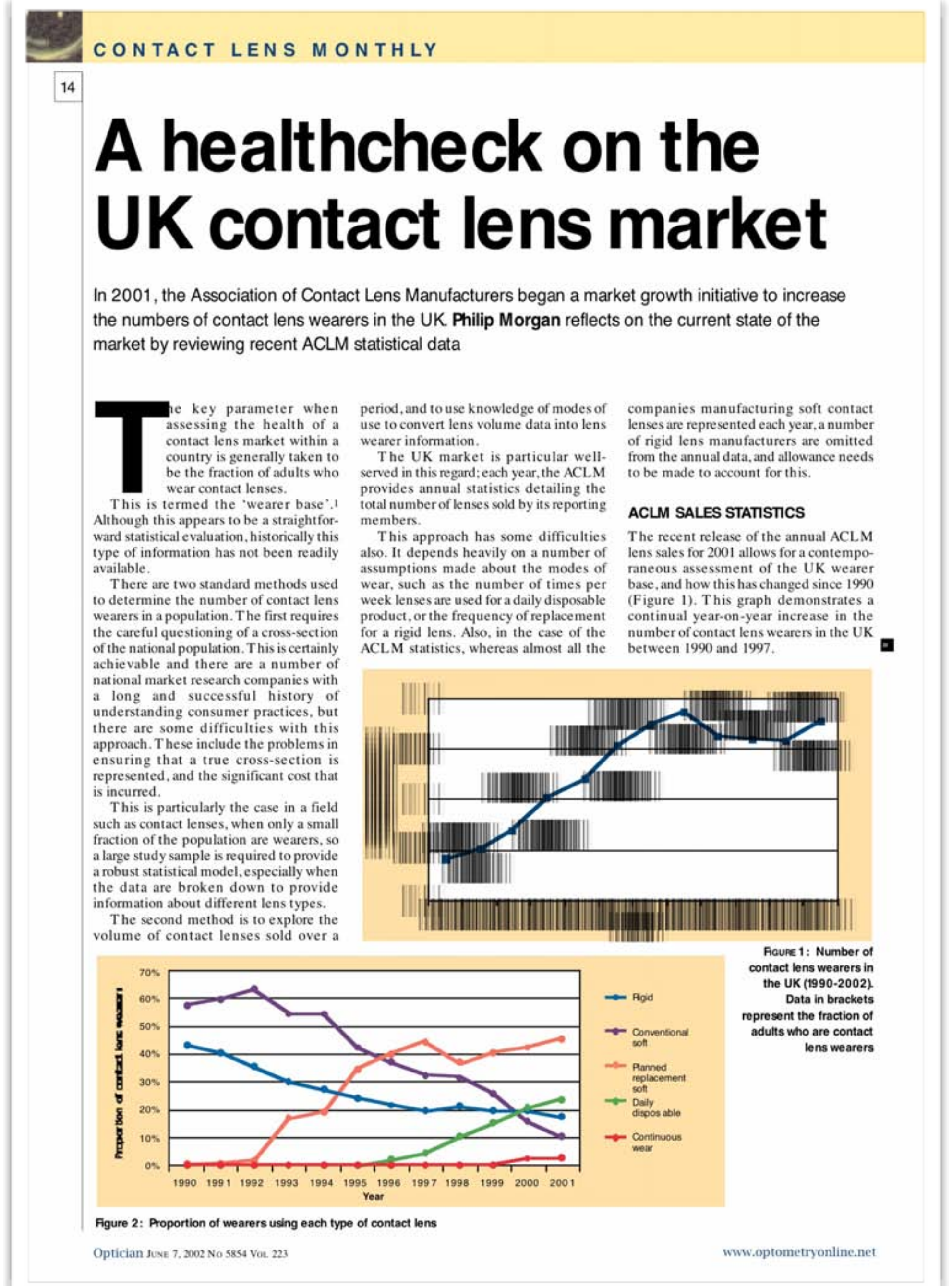

Trends in UK contact lens prescribing 2015

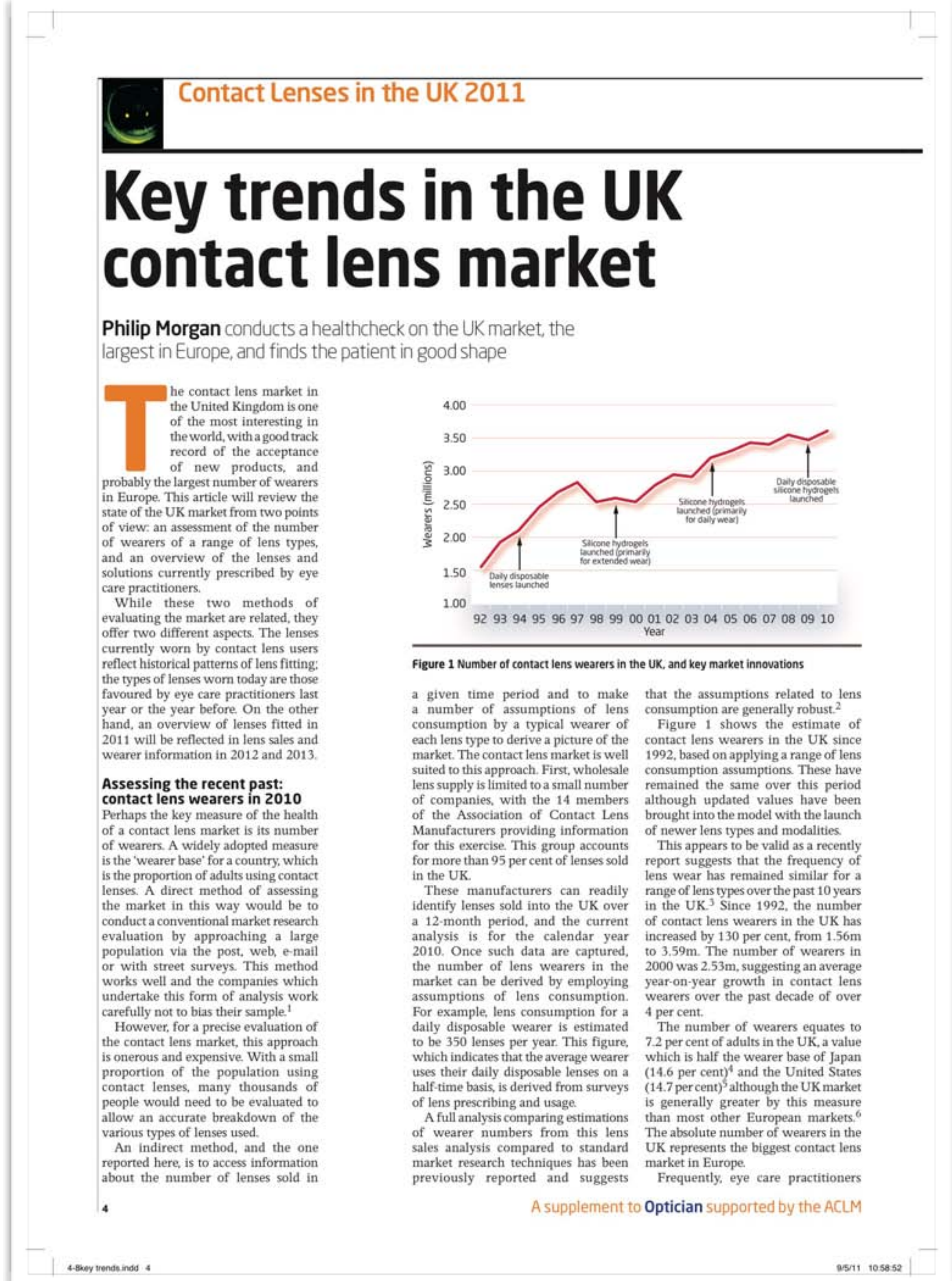

Trends in UK contact lens prescribing 2016


The trends in UK contact lens prescribing 2017


2018 data on UK contact lens prescribing

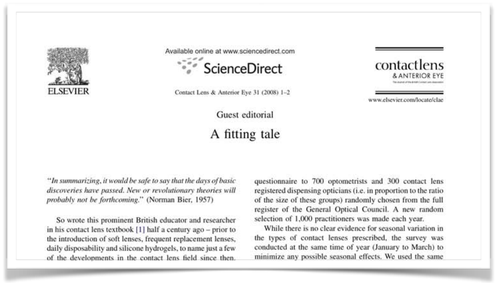
23 papers on UK prescribing in *Optician* 1996-2018





FIve papers on state of UK contact lens market in *Optician*

18 papers on global prescribing in *Contact Lens Spectrum*



Available online at www.sciencedirect.com
ScienceDirect
Contact Lens & Anterior Eye 31 (2008) 1–2
contactlens & ANTERIOR EYE
www.elsevier.com/locate/clae

Guest editorial

A fitting tale

"In summarizing, it would be safe to say that the days of basic discoveries have passed. New or revolutionary theories will probably not be forthcoming." (Norman Bier, 1957)

So wrote this prominent British educator and researcher in his contact lens textbook [1] half a century ago – prior to the introduction of soft lenses, frequent replacement lenses, daily disposability and silicone hydrogels, to name just a few of the developments in the contact lens field since then.

questionnaire to 700 optometrists and 300 contact lens registered dispensing opticians (i.e. in proportion to the ratio of the size of these groups) randomly chosen from the full register of the General Optical Council. A new random selection of 1,000 practitioners was made each year.

While there is no clear evidence for seasonal variation in the types of contact lenses prescribed, the survey was conducted at the same time of year (January to March) to minimize any possible seasonal effects. We used the same

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Contact Lens & Anterior Eye 31 (2008) 107–108
contactlens & ANTERIOR EYE
www.elsevier.com/locate/clae

Short communication

Prescribing daily disposable contact lenses in the UK

Nathan Efron [a,*], Philip B. Morgan [b]

[a] Institute of Health and Biomedical Innovation, and School of Optometry, Queensland University of Technology, Cnr Musk Avenue & Blamey Street, Kelvin Grove, Queensland 4059, Australia
[b] Eurolens Research, The University of Manchester, Moffat Building, P.O. Box 88, Manchester M60 1QD, United Kingdom

Abstract

Patterns of prescribing daily disposable contact lenses in the UK were determined by mining through data gathered from annual contact lens fitting surveys conducted over the past 12 years. Spherical, toric and multifocal design daily disposable lenses represent a substantial proportion of all contact lenses prescribed, reflecting the significant ocular health and lifestyle advantages offered by this lens category.

Keywords: Contact lens; Daily disposable; Prescribing; Fitting; Survey

Available online at www.sciencedirect.com
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Contact Lens & Anterior Eye 31 (2008) 283–284
contactlens & ANTERIOR EYE
www.elsevier.com/locate/clae

Short communication

Soft contact lens care regimens in the UK

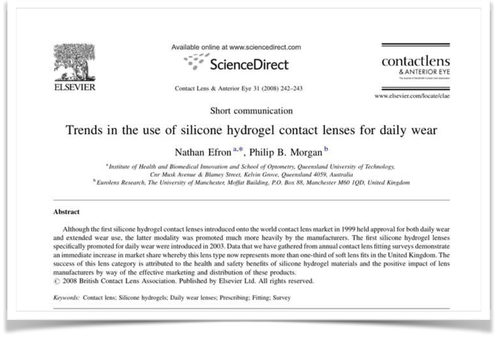
Nathan Efron [a,*], Philip B. Morgan [b]

[a] Institute of Health and Biomedical Innovation, and School of Optometry, Queensland University of Technology, Cnr Musk Avenue & Blamey Street, Kelvin Grove, Queensland 4059, Australia
[b] Eurolens Research, The University of Manchester, Moffat Building, P.O. Box 88, Manchester M60 1QD, United Kingdom

Abstract

A variety of approaches are available for cleaning, rinsing, disinfecting and storing reusable soft contact lenses. As demonstrated in this report of the results of annual UK prescribing surveys conducted over the past 12 years, there has been a steady increase in the use of multi-purpose solutions, which in 2007 represented 93% of all lens care systems prescribed. This increase is attributed to factors such as simplicity, reduced cost and enhanced compliance with these products. The apparent reversal of this trend in 2008 is probably due to an undermining of patient and practitioner confidence in multi-purpose solutions relating to withdrawals of some multi-purpose solutions from the market, and controversies concerning corneal staining with some lens–solution combinations.

Keywords: Contact lens solutions; Prescribing; Survey



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ScienceDirect
Contact Lens & Anterior Eye 31 (2008) 242–243
contactlens & ANTERIOR EYE
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Short communication

Trends in the use of silicone hydrogel contact lenses for daily wear

Nathan Efron [a,*], Philip B. Morgan [b]

[a] Institute of Health and Biomedical Innovation and School of Optometry, Queensland University of Technology, Cnr Musk Avenue & Blamey Street, Kelvin Grove, Queensland 4059, Australia
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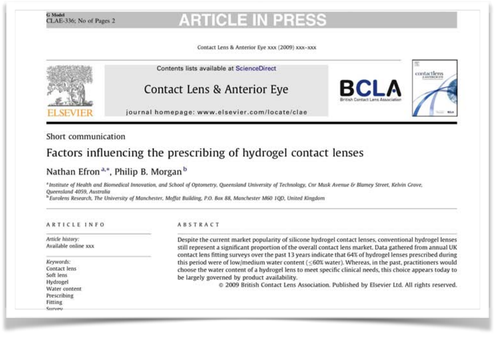
Abstract

Although the first silicone hydrogel contact lenses introduced onto the world contact lens market in 1999 held approval for both daily wear and extended wear use, the latter modality was promoted much more heavily by the manufacturers. The first silicone hydrogel lenses specifically promoted for daily wear were introduced in 2003. Data that we have gathered from annual contact lens fitting surveys demonstrate an immediate increase in market share whereby this lens type now represents more than one-third of soft lens fits in the United Kingdom. The success of this lens category is attributed to the health and safety benefits of silicone hydrogel materials and the positive impact of lens manufacturers by way of the effective marketing and distribution of these products.

Keywords: Contact lens; Silicone hydrogels; Daily wear lenses; Prescribing; Fitting; Survey



G Model
CLAE-336; No of Pages 2
ARTICLE IN PRESS

Contact Lens & Anterior Eye xxx (2009) xxx–xxx

Contents lists available at ScienceDirect
Contact Lens & Anterior Eye
journal homepage: www.elsevier.com/locate/clae
BCLA British Contact Lens Association

Short communication

Factors influencing the prescribing of hydrogel contact lenses

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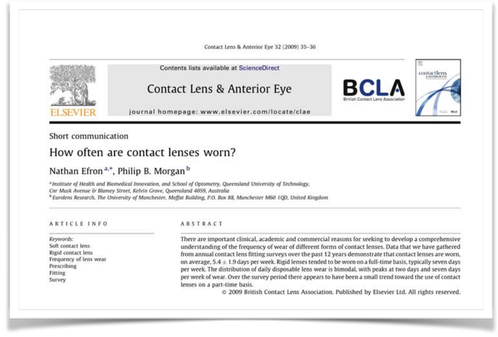
ARTICLE INFO

Article history:
Available online xxx

Keywords:
Contact lens
Soft lens
Hydrogel
Water content
Prescribing
Fitting
Survey

ABSTRACT

Despite the current market popularity of silicone hydrogel contact lenses, conventional hydrogel lenses still represent a significant proportion of the overall contact lens market. Data gathered from annual UK contact lens fitting surveys over the past 13 years indicate that 64% of hydrogel lenses prescribed during this period were of low/medium water content (≤ 60% water). Whereas, in the past, practitioners would choose the water content of a hydrogel lens to meet specific clinical needs, this choice appears today to be largely governed by product availability.



Contact Lens & Anterior Eye 32 (2009) 35–36

Contents lists available at ScienceDirect
Contact Lens & Anterior Eye
journal homepage: www.elsevier.com/locate/clae
BCLA British Contact Lens Association

Short communication

How often are contact lenses worn?

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ARTICLE INFO

Keywords:
Soft contact lens
Rigid contact lens
Frequency of lens wear
Prescribing
Fitting
Survey

ABSTRACT

There are important clinical, academic and commercial reasons for seeking to develop a comprehensive understanding of the frequency of wear of different forms of contact lenses. Data that we have gathered from annual contact lens fitting surveys over the past 12 years demonstrate that contact lenses are worn, on average, 5.4 ± 1.9 days per week. Rigid lenses tended to be worn on a full-time basis, typically seven days per week. The distribution of daily disposable lens wear is bimodal, with peaks at two days and seven days per week of wear. Over the survey period there appears to have been a small trend toward the use of contact lenses on a part-time basis.

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Contact Lens & Anterior Eye
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BCLA British Contact Lens Association

Short communication

Practitioner influence on contact lens prescribing in the UK

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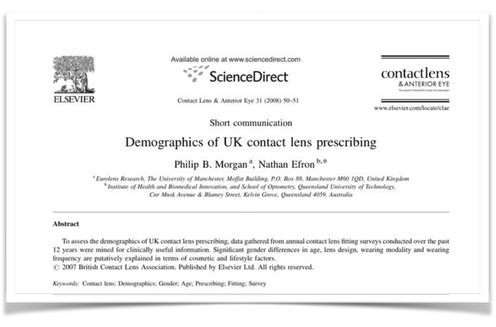
ARTICLE INFO

Keywords:
Contact lens
Optometrist
Contact lens optician
Prescribing
Fitting
Survey

ABSTRACT

Contact lenses are mainly fitted by registered optometrists and contact lens opticians in the UK. Data we have gathered from annual contact lens fitting surveys over the past 12 years indicate that, on average, registered optometrists and contact lens opticians undertake 3.2 and 7.1 contact lens fits per week ($p < 0.0001$). More experienced practitioners tend to fit older patients. Practitioners fitting more lenses per year tend to fit a higher proportion of soft lenses. Contact lens opticians tend to fit a higher proportion of patients with planned replacement and daily disposable lenses compared with optometrists.



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ScienceDirect
Contact Lens & Anterior Eye 31 (2008) 50–51
contactlens & ANTERIOR EYE
www.elsevier.com/locate/clae

Short communication

Demographics of UK contact lens prescribing

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Abstract

To assess the demographics of UK contact lens prescribing, data gathered from annual contact lens fitting surveys conducted over the past 12 years were mined for clinically useful information. Significant gender differences in age, lens design, wearing modality and wearing frequency are putatively explained in terms of cosmetic and lifestyle factors.

Keywords: Contact lens; Demographics; Gender; Age; Prescribing; Fitting; Survey

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Short communication

Patterns of prescribing extended wear contact lenses

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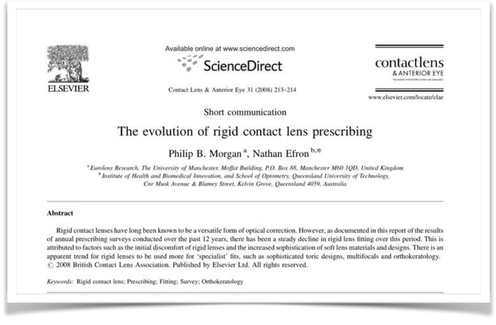
Abstract

Patterns of prescribing extended wear contact lenses in the UK were determined by mining through data gathered from annual contact lens fitting surveys conducted over the past 12 years. The increased rate of extended wear prescribing this century – which in 2007 had reached 7% and 19% of all soft lens new fits and refits, respectively – probably reflects the superior clinical performance of silicone hydrogel lenses for this purpose.

Keywords: Contact lens; Extended wear; Silicone hydrogel lenses; Gender; Age; Prescribing; Fitting; Survey



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ScienceDirect
Contact Lens & Anterior Eye 31 (2008) 213–214
contactlens & ANTERIOR EYE
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Short communication

The evolution of rigid contact lens prescribing

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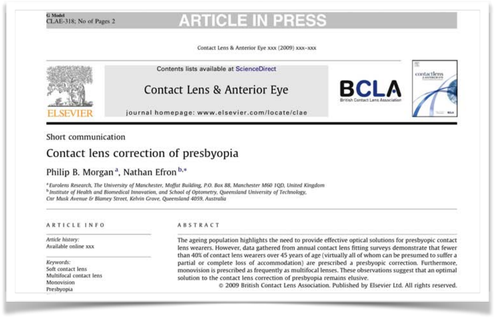
Abstract

Rigid contact lenses have long been known to be a versatile form of optical correction. However, as documented in this report of the results of annual prescribing surveys conducted over the past 12 years, there has been a steady decline in rigid lens fitting over this period. This is attributed to factors such as the initial discomfort of rigid lenses and the increased sophistication of soft lens materials and designs. There is an apparent trend for rigid lenses to be used more for 'specialist' fits, such as sophisticated toric designs, multifocals and orthokeratology.

Keywords: Rigid contact lens; Prescribing; Fitting; Survey; Orthokeratology



G Model
CLAE-318; No of Pages 2
ARTICLE IN PRESS

Contact Lens & Anterior Eye xxx (2009) xxx–xxx

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Contact Lens & Anterior Eye
journal homepage: www.elsevier.com/locate/clae
BCLA British Contact Lens Association

Short communication

Contact lens correction of presbyopia

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ARTICLE INFO

Article history:
Available online xxx

Keywords:
Soft contact lens
Multifocal contact lens
Monovision
Presbyopia

ABSTRACT

The ageing population highlights the need to provide effective optical solutions for presbyopic contact lens wearers. However, data gathered from annual contact lens fitting surveys demonstrate that fewer than 40% of contact lens wearers over 45 years of age (virtually all of whom can be presumed to suffer a partial or complete loss of accommodation) are prescribed a presbyopic correction. Furthermore, monovision is prescribed as frequently as multifocal lenses. These observations suggest that an optimal solution to the contact lens correction of presbyopia remains elusive.

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Contact Lens & Anterior Eye
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BCLA British Contact Lens Association

Short communication

Patterns of fitting cosmetically tinted contact lenses

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ARTICLE INFO

Keywords:
Soft contact lens
Tinted cosmetic contact lens
Fitting
Survey

ABSTRACT

Cosmetically tinted soft contact lenses are an attractive option for contact lens wearers. Data that we have gathered from annual contact lens fitting surveys demonstrate that those wearing tinted lenses are more likely to be female (4.6% of all soft lens fitted vs. 1.6% for males; $p < 0.0001$) and younger (27 ± 11 years vs. 33 ± 13 years for those wearing non-tinted lenses; $p < 0.0001$). Tinted lenses tend to be worn more on a part-time basis and are replaced less frequently than non-tinted lenses. The decline in fitting tinted lenses over the past 12 years may be due to (a) the current limited availability of tinted lenses in silicone hydrogel materials and daily disposable replacement frequencies, which together represent a significant majority (78%) of new soft lenses fits today, (b) growing concerns among lens wearers and practitioners relating to the risks of complications associated with the wearing of tinted lenses, and (c) reduced promotion of such lenses by the contact lens industry.

A more *academic* series of 12 papers on the UK market in *Contact Lens and Anterior Eye* in 2008-9

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Contact Lens & Anterior Eye

journal homepage: www.elsevier.com/locate/clae

Short communication

International rigid contact lens prescribing

Nathan Efron [a,*], Philip B. Morgan [b], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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ARTICLE INFO

Keywords:
Contact lens
International
Rigid contact lenses
Fitting
Survey
Orthokeratology

ABSTRACT

Rigid lenses have been fitted less since the introduction of soft lenses nearly 40 years ago. Data that we have gathered from annual contact lens fitting surveys conducted in Australia, Canada, Japan, the Netherlands, Norway, the UK and the USA between 2000 and 2008 facilitate an accurate characterization of the pattern of the decline of rigid lens fitting during the first decade of this century. There is a trend for rigid lenses to be utilized primarily for refitting those patients who are already successful rigid lens wearers—most typically older females being refit with higher Dk materials. Rigid lenses are generally fitted on a full-time basis (four or more days of wear per week) without a planned replacement schedule. Orthokeratology is especially popular in the Netherlands, but is seldom prescribed in the other countries surveyed.

Contents lists available at ScienceDirect

Contact Lens & Anterior Eye

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Short communication

Daily disposable contact lens prescribing around the world

Nathan Efron [a,*], Philip B. Morgan [b], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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[g] University of Maastricht, P. Debijelaan 25, 6202 AZ, Maastricht, The Netherlands
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ARTICLE INFO

Keywords:
Daily disposable contact lenses
International
Fitting
Survey

ABSTRACT

Daily disposable contact lenses were introduced into the market 16 years ago. Data that we have gathe from annual contact lens fitting surveys conducted in Australia, Canada, Japan, The Netherlands, Norw the UK and the USA between 2000 and 2008 indicates an overall increase in daily disposable lens fitt during this period. Daily disposable lenses are especially popular in Japan, Norway and the UK. Ther a trend for these lenses to be fitted on a part-time basis. Males are over-represented in daily disposa lens fitting—a trend that is especially evident in Canada. Daily disposable lens wearers are about t years younger than wearers of reusable lenses in Japan and The Netherlands. The convenience and he benefits of daily disposable lenses are expected to fuel continued growth in this sector.

Contents lists available at ScienceDirect

Contact Lens & Anterior Eye

journal homepage: www.elsevier.com/locate/clae

Short communication

Soft toric contact lens prescribing in different countries

Nathan Efron [a,*], Philip B. Morgan [b], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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[b] Eurolens Research, The University of Manchester, Moffat Building, P.O. Box 88, Manchester M60 1QD, United Kingdom
[c] Department of Optometry and Visual Science, Buskerud University College, P.O. Box 235, N-3603 Kongsberg, Norway
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ARTICLE INFO

Keywords:
Soft contact lens
Toric lens
Astigmatism
Prescribing
International
Fitting
Survey

ABSTRACT

There have been significant improvements in toric soft contact lens design over the past decade. D from our international contact lens prescribing survey were mined to assess recent trends in toric contact lens fitting. This survey was conducted by sending up to 1000 survey forms to contact lens fitt in Australia, Canada, Japan, the Netherlands, Norway, the UK and the USA each year between 2000 2009. Practitioners were asked to record data relating to the first 10 contact lens fits or refits perfor after receiving the forms and to return them to us for analysis. The data revealed a gradual increas the extent of toric soft lens fitting this century. Excluding Japan – which had a consistently low rat soft toric lens fitting over the survey period – soft toric lenses now represent over 35% of all soft len prescribed; it can be assumed that, on average (and again excluding Japan), all cases of astigmat 0.75 D or less remains uncorrected among contact lens wearers. Toric lenses are fitted more to those v are older, full-time wearers and reusable lens wearers, and less to those wearing silicone hydrogel extended wear lenses.

G Model
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Contact Lens & Anterior Eye

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Short communication

Demographics of international contact lens prescribing

Philip B. Morgan [a], Nathan Efron [b,*], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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ARTICLE INFO

Article history:
Available online xxx

Keywords:
Contact lens
International

ABSTRACT

Knowledge of differences in the demographics of contact lens prescribing between nations, and changes over time, can assist (a) the contact lens industry in developing and promoting various product types in different world regions, and (b) practitioners in understanding their prescribing habits in an international context. Data that we have gathered from annual contact lens fitting surveys conducted in Australia, Canada, Japan, the Netherlands, Norway, the UK and the USA between 2000 and 2008 reveal an ageing demographic, with Japan being the most youthful. The majority of fits are to females, with

Contents lists available at ScienceDirect

Contact Lens & Anterior Eye

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Short communication

Global trends in prescribing contact lenses for extended wear

Philip B. Morgan [a], Nathan Efron [b,*], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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[b] Institute of Health and Biomedical Innovation, and School of Optometry, Queensland University of Technology, 60 Musk Avenue, Kelvin Grove, Queensland 4059, Australia
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[g] University of Maastricht, P. Debijelaan 25, 6202 AZ, Maastricht, The Netherlands
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ARTICLE INFO

Keywords:
Contact lens
Extended wear
Silicone hydrogel
International
Fitting
Survey

ABSTRACT

Extended wear has long been the 'holy grail' of contact lenses by virtue of the increased convenie and freedom of lifestyle which they accord; however, this modality enjoyed only limited market succ during the last quarter of the 20th century. The introduction of silicone hydrogel materials into the ma at the beginning of this century heralded the promise of successful extended wear due to the supe oxygen performance of this lens type. To assess patterns of contact lens fitting, including extended w over the past decade, up to 1000 survey forms were sent to contact lens fitters in Australia, Canada, Jap the Netherlands, Norway, the UK and the USA each year between 2000 and 2009. Practitioners were as to record data relating to the first 10 contact lens fits or refits performed after receiving the survey fo Analysis of returned forms revealed that, averaged over this period, 9% of all soft lenses prescribed w for extended wear, with national figures ranging from 2% in Japan to 17% in Norway. The trend over past decade has been for an increase from about 5% of all soft lens fits in 2000 to a peak of between 9 12% between 2002 and 2007, followed by a decline to around 7% in 2009. A person receiving exten

Contact Lens & Anterior Eye 33 (2010) 196–198

Contents lists available at ScienceDirect

Contact Lens & Anterior Eye

journal homepage: www.elsevier.com/locate/clae

Short communication

Twenty first century trends in silicone hydrogel contact lens fitting: An international perspective

Philip B. Morgan [a], Nathan Efron [b,*], Magne Helland [c], Motozumi Itoi [d], Deborah Jones [e], Jason J. Nichols [f], Eef van der Worp [g], Craig A. Woods [h]

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[c] Department of Optometry and Visual Science, Buskerud University College, P.O. Box 235, N-3603 Kongsberg, Norway
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ARTICLE INFO

Keywords:
Contact lens
International
Silicone hydrogel contact lenses
Fitting

ABSTRACT

Silicone hydrogel contact lenses were introduced into the market in 1999. To assess prescribing trends of this lens type since then, up to 1000 survey forms were sent to contact lens fitters in Australia, Canada, Japan, the Netherlands, Norway, the UK and the USA each year between 2000 and 2008. Practitioners were asked to record data relating to the first 10 contact lens fits or refits performed after receiving the survey form. Analysis of returned forms revealed a rapid increase in the prescribing of silicone hydrogel

…then an international series of six in *CLAE* in 2010

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ARTÍCULO CIENTÍFICO

Lentes de contacto adaptadas en España en 2013: comparación con otros países

INTRODUCCIÓN

DEMOGRAFÍA DE LOS USUARIOS

Gaceta
ARTÍCULO CIENTÍFICO

Lentes de contacto adaptadas en España en el 2013

INTRODUCCIÓN

METODOLOGÍA

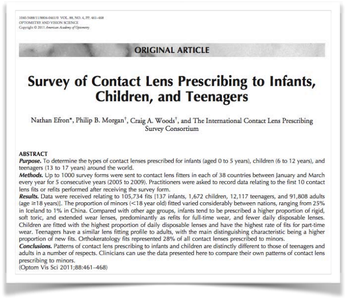
DEMOGRAFÍA DE LOS USUARIOS

Artículo científico

Lentes de contacto adaptadas en España en 2012
Comparación con otros países

INTRODUCCIÓN

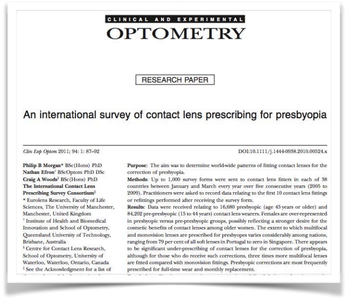
DEMOGRAFÍA



ORIGINAL ARTICLE

Survey of Contact Lens Prescribing to Infants, Children, and Teenagers

ABSTRACT

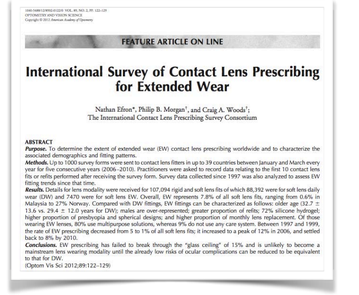


CLINICAL AND EXPERIMENTAL
OPTOMETRY

RESEARCH PAPER

An international survey of contact lens prescribing for presbyopia

ABSTRACT



FEATURE ARTICLE ON LINE

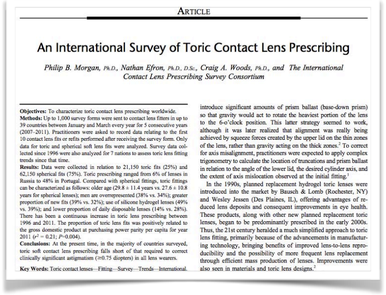
International Survey of Contact Lens Prescribing for Extended Wear

ABSTRACT

ORIGINAL ARTICLE

International Survey of Rigid Contact Lens Fitting

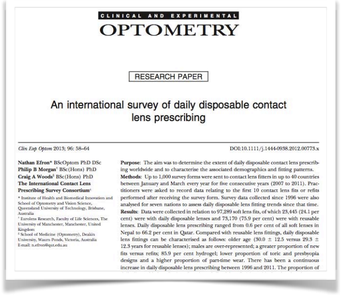
ABSTRACT



ARTICLE

An International Survey of Toric Contact Lens Prescribing

ABSTRACT

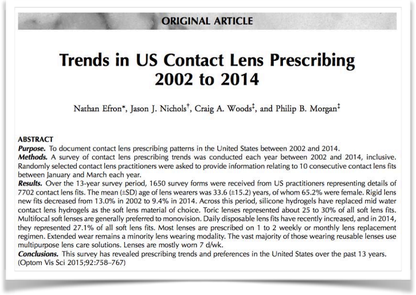


CLINICAL AND EXPERIMENTAL
OPTOMETRY

RESEARCH PAPER

An international survey of daily disposable contact lens prescribing

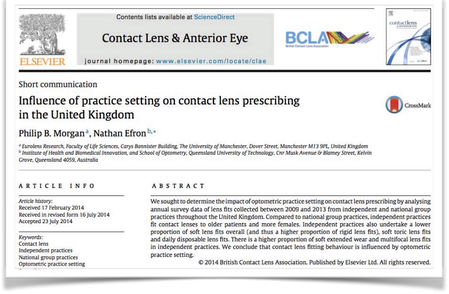
ABSTRACT



ORIGINAL ARTICLE

Trends in US Contact Lens Prescribing 2002 to 2014

ABSTRACT



Contents lists available at ScienceDirect
Contact Lens & Anterior Eye
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Short communication

Influence of practice setting on contact lens prescribing in the United Kingdom

ARTICLE INFO

ABSTRACT

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Contact Lens and Anterior Eye
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A sixteen year survey of Canadian contact lens prescribing

ARTICLE INFO

ABSTRACT

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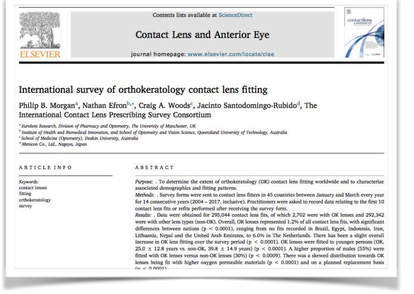
Short communication

Trends of contact lens prescribing in Jordan

ARTICLE INFO

ABSTRACT



Contents lists available at ScienceDirect
Contact Lens and Anterior Eye
journal homepage: www.elsevier.com/locate/clae

International survey of orthokeratology contact lens fitting

ARTICLE INFO

ABSTRACT

Contents lists available at ScienceDirect
Contact Lens and Anterior Eye
journal homepage: www.elsevier.com/locate/clae

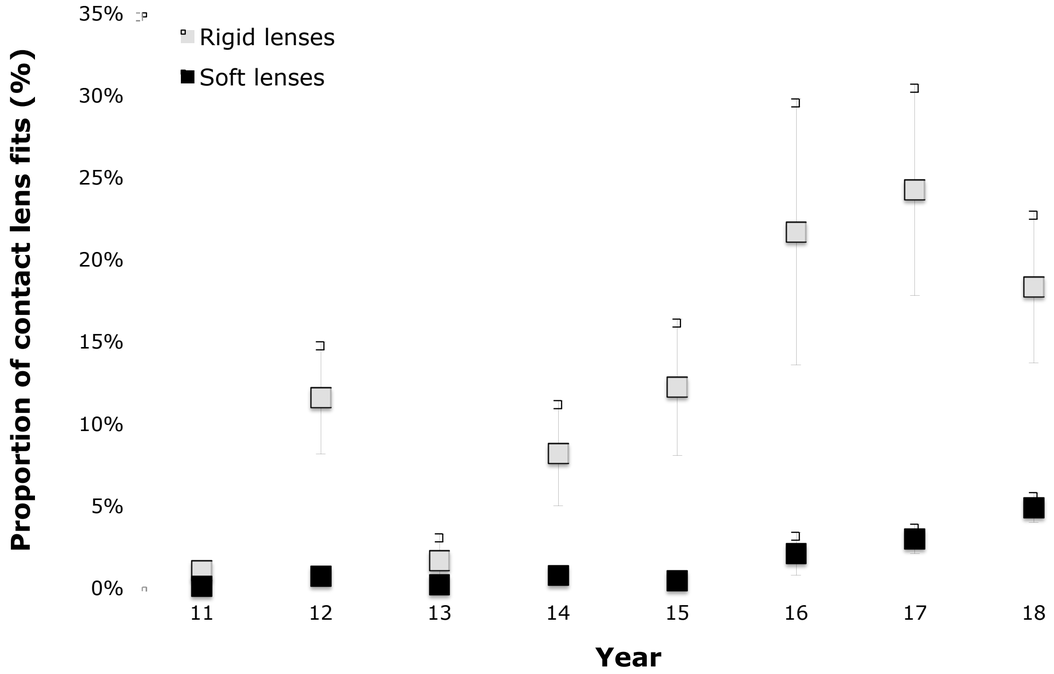
Trends in Contact Lens Prescribing in Japan (2003–2016)

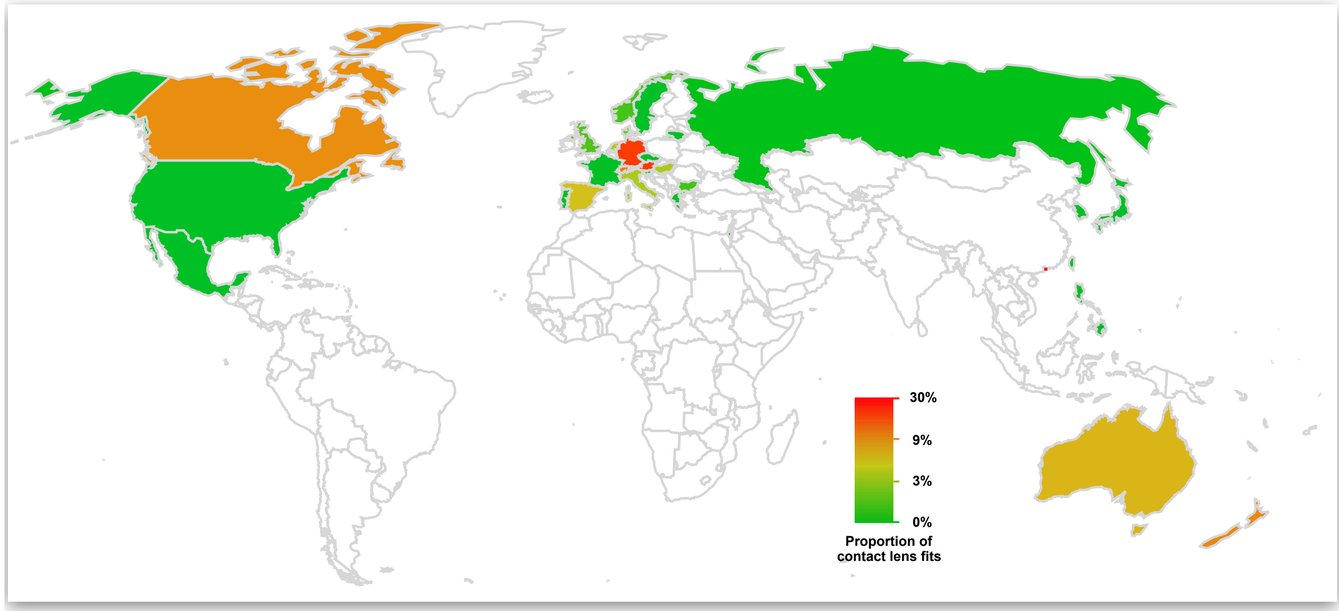
ARTICLE INFO

ABSTRACT

…and more, many more, and there are more to come…

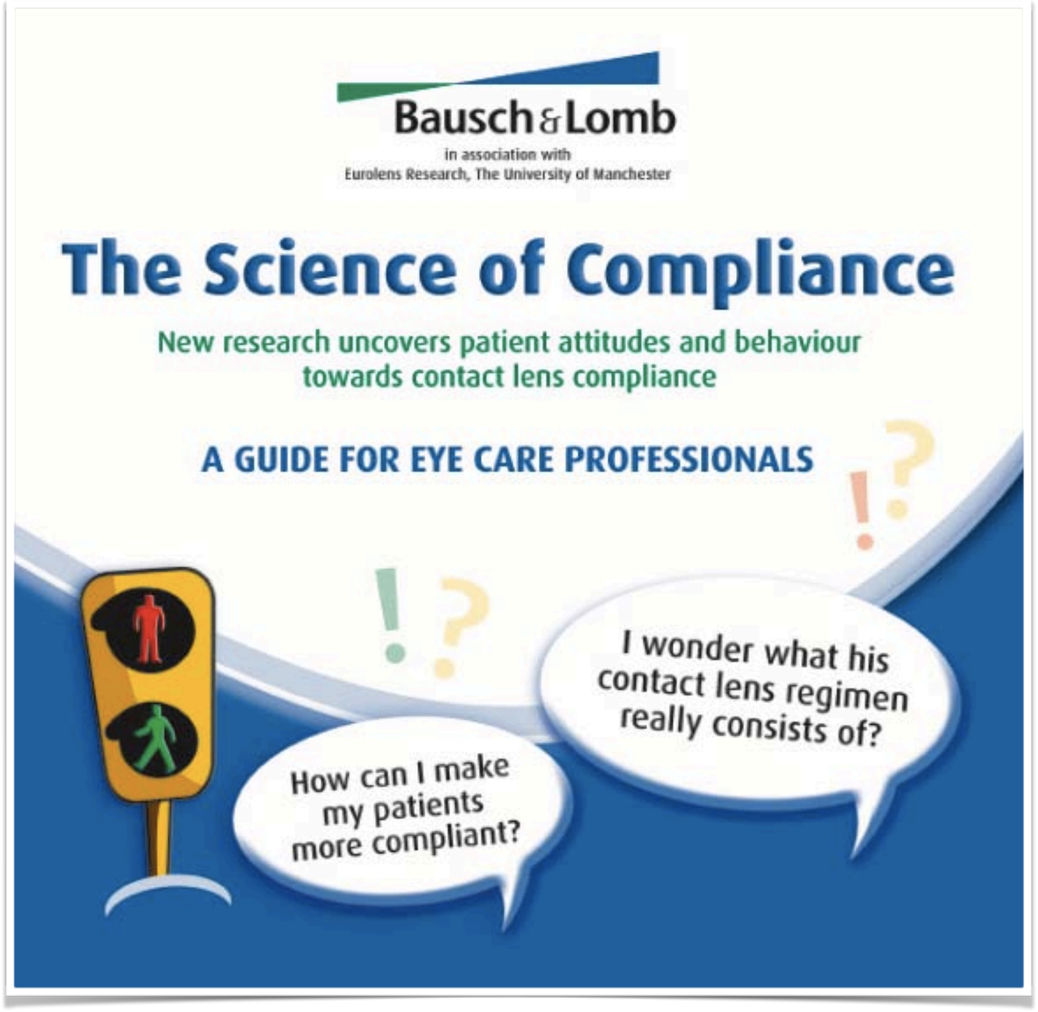
optometrists to share





…and more, many more, and there are more to come…

patients
to improve



Contents lists available at ScienceDirect

Contact Lens & Anterior Eye

journal homepage: www.elsevier.com/locate/clae

An international analysis of contact lens compliance

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[b] Institute of Health and Biomedical Innovation, and School of Optometry, Queensland University of Technology, 60 Musk Avenue, Kelvin Grove, Queensland 4059, Australia
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[d] The University of Houston College of Optometry, Houston, TX, United States

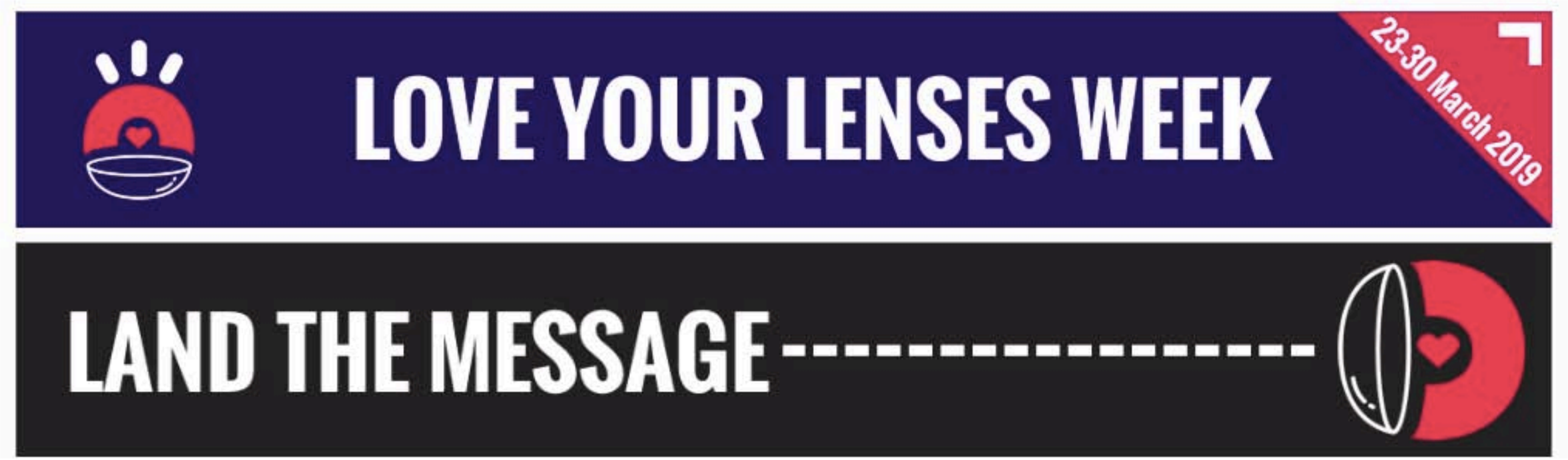
ARTICLE INFO

Keywords:
Contact lens
Compliance
Microbial keratitis
Case care

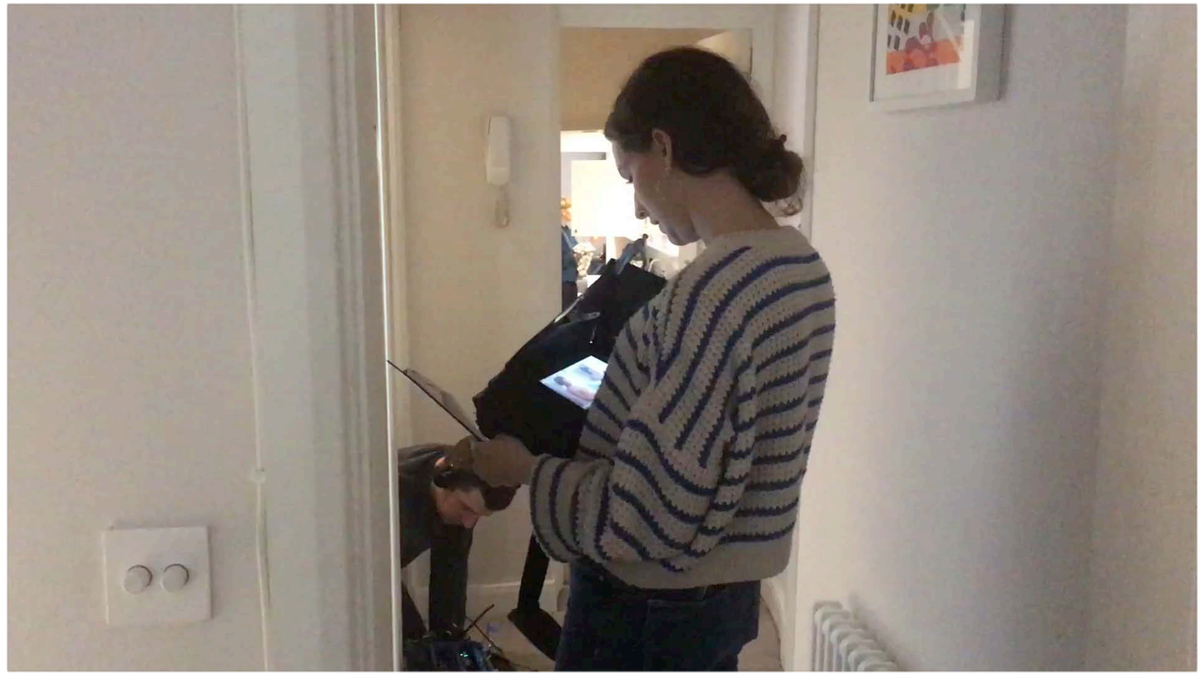
ABSTRACT

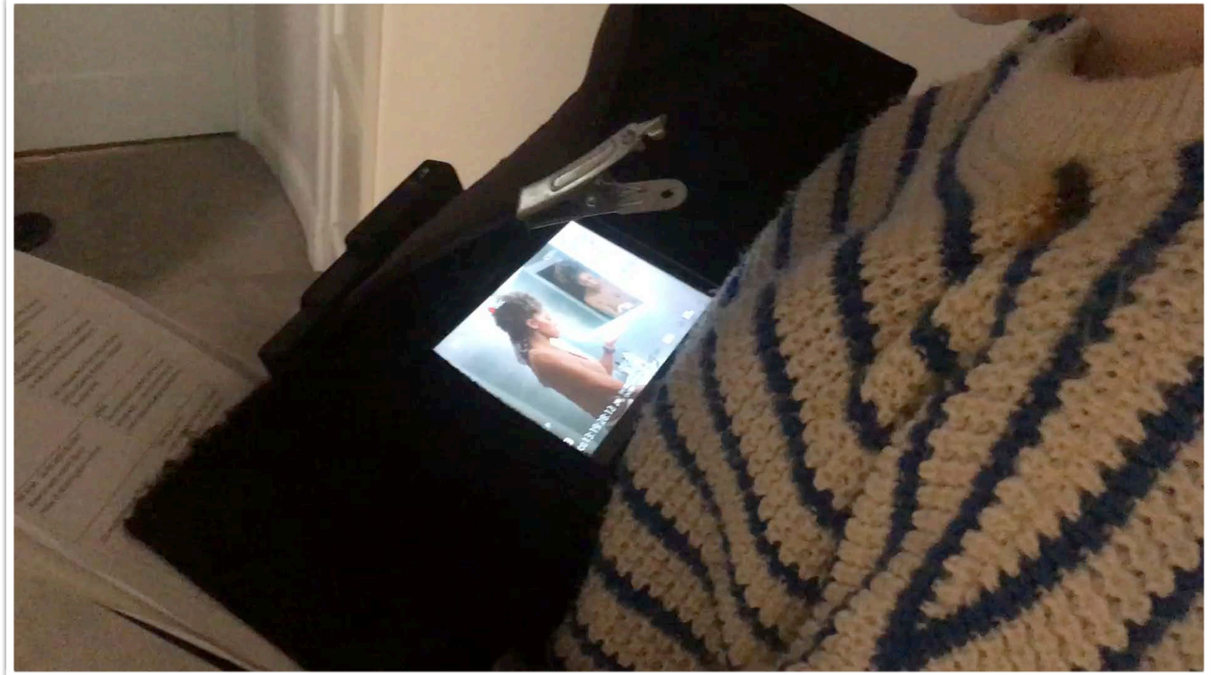
Purpose: To evaluate compliance to contact lens use in 14 countries, and to identify wearer attributes which indicate lower compliance levels.
Methods: A web-based survey was undertaken by 4021 contact lens wearers, revealing information about demographics, and lens and solution information including daily handling details, case care and aftercare frequency. Particular attention was paid to eight modifiable compliance-related behaviours which are associated with an increased risk of microbial keratitis.
Results: Full compliance was very rare for most lens users, although better (15% of wearers) for daily disposable lenses. Reduced compliance was demonstrated in South Korea, and for young male full-time contact lens users, especially those who have not consulted their eyecare practitioner for some time. The behaviours associated with the lowest levels of compliance were rubbing and rinsing, handwashing, correct lens replacement and case cleaning.
Conclusions: Given other recent literature, which suggests improved contact lens compliance with regular self-review exercises, we encourage clinical colleagues to particularly examine case cleaning, handwashing and rubbing and rinsing at aftercare examinations, especially in young male wearers.

patients
to improve




BBC RADIO





BBC

Trust me I'm a Doctor

colleagues
to learn from
to enthuse
to lead

colleagues
to learn from
to enthuse
to lead

peers
to think, solve,
spark,
frustrate!

institution
impress

Goal one

World-class research

The University will be one of the top 25 research universities in the world, where internationally-leading researchers produce research of the highest significance and impact. We will be recognised for our interdisciplinary research, for training outstanding researchers and giving parity of esteem to discovery, application, knowledge transfer and impact.

Goal two

Outstanding learning and student experience

The University will provide a superb higher education and learning experience to outstanding students, irrespective of their backgrounds, and will produce graduates distinguished by their intellectual capabilities, employability, leadership qualities, and their ability and ambition to contribute to society.

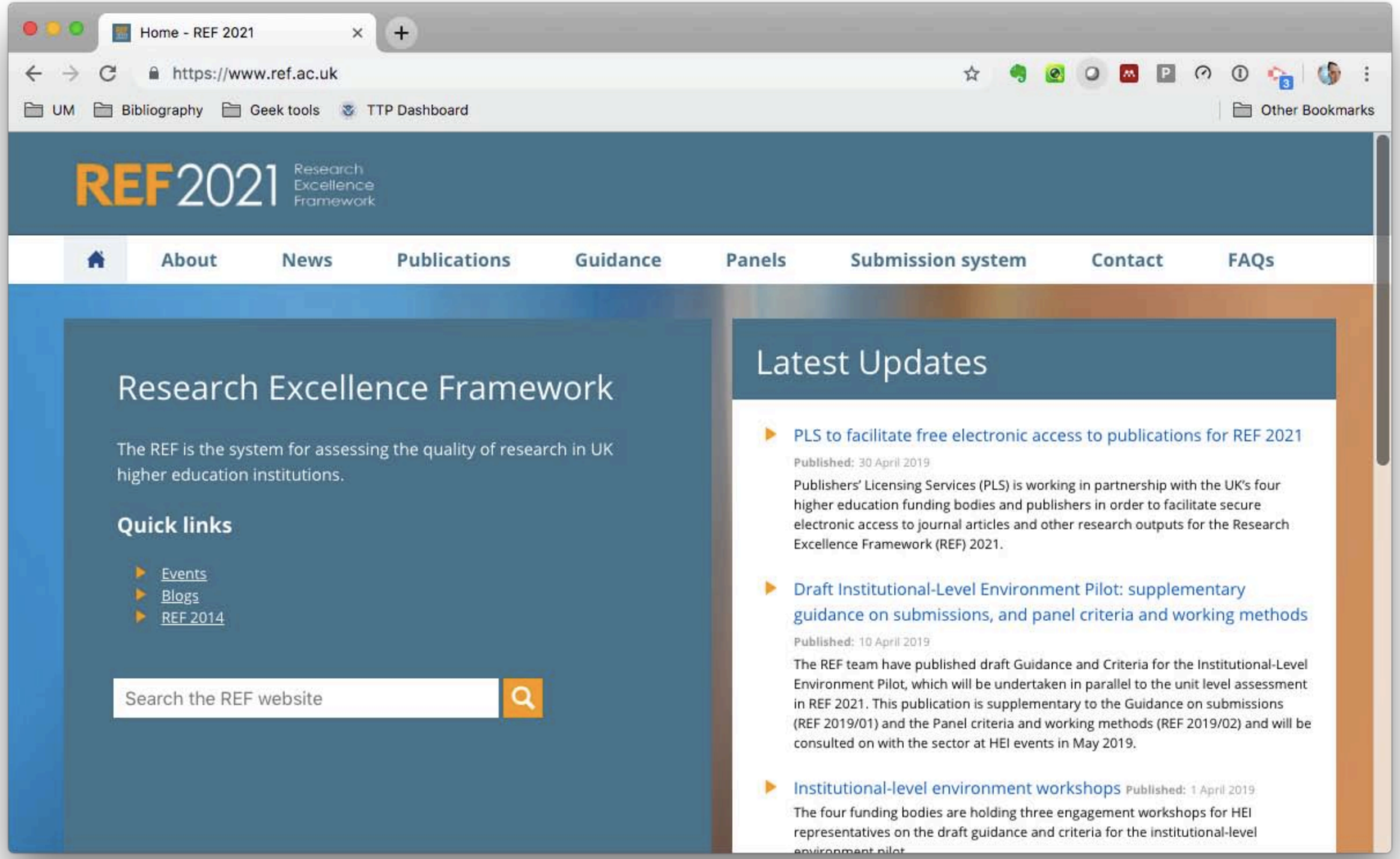
Goal three

Social responsibility

The University will contribute to the social and economic success of the local, national and international community by using our expertise and knowledge to find solutions to the major challenges of the 21st century, and by producing graduates who exercise social leadership and responsibility.

institution

impress



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impress

Contents lists available at ScienceDirect

International Journal of Biochemistry and Cell Biology

journal homepage: www.elsevier.com/locate/biocel

Cellular fluorescein hyperfluorescence is dynamin-dependent and increased by Tetronic 1107 treatment

Tahmina F. Khan[a,b], Bianca L. Price[a], Philip I
Curtis B. Dobson[a,*]

[a] Medical Device Biology Group, Faculty of Biology, Medicine and Health, The
[b] Eurolens Research, Faculty of Biology, Medicine and Health, The University o

ARTICLE INFO

Keywords:
Fluorescein
Solution induced corneal staining (SICS)
Surfactants
Multi-purpose solutions (MPS)
Fluorescein uptake

ABSTRAC

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nature COMMUNICATIONS

ARTICLE

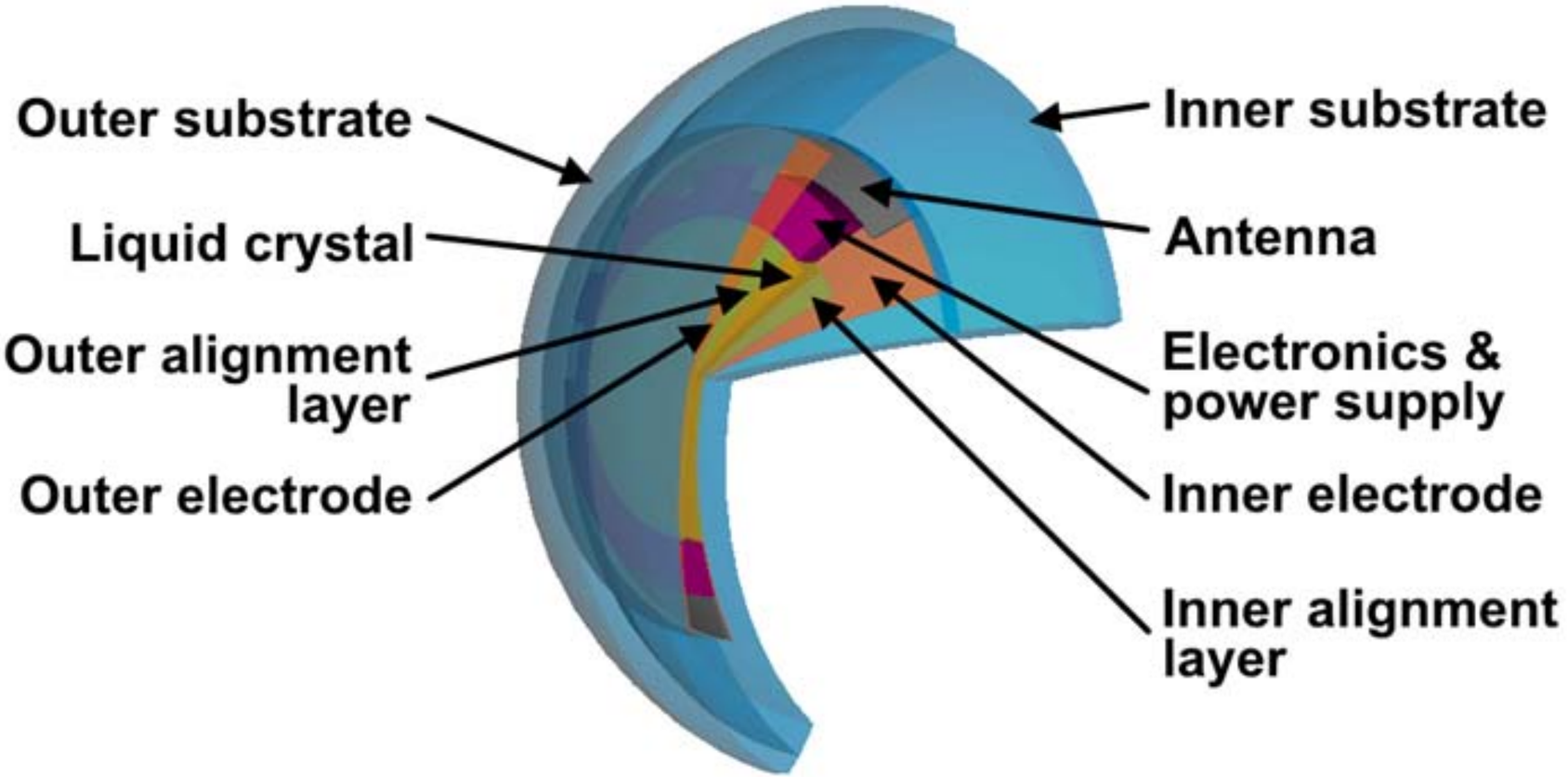
DOI: 10.1038/s41467-018-07587-y OPEN

Coincident molecular auxeticity and negative order parameter in a liquid crystal elastomer

D. Mistry[1], S.D. Connell[1], S.L. Mickthwaite[2], P.B. Morgan[3], J.H. Clamp[4] & H.F. Gleeson[1]

Auxetic materials have negative Poisson's ratios and so expand rather than contract in one or several direction(s) perpendicular to applied extensions. The auxetics community has long sought synthetic molecular auxetics – non-porous, inherently auxetic materials which are simple to fabricate and avoid porosity-related weakening. Here, we report, synthetic molecular auxeticity for a non-porous liquid crystal elastomer. For strains above -0.8 applied perpendicular to the liquid crystal director, the liquid crystal elastomer becomes auxetic with the maximum negative Poisson's ratio measured to date being -0.74 ± 0.03 – larger than most values seen in naturally occurring molecular auxetics. The emergence of auxeticity coincides with the liquid crystal elastomer backbone adopting a negative order parameter, $Q_B = -0.41 \pm 0.01$ – further implying negative liquid crystal ordering. The reported behaviours consistently agree with theoretical predictions from Warner and Terentjev liquid crystal elastomer theory. Our results open the door for the design of synthetic molecular auxetics.

institution
impress



DVS
DYNAMIC VISION SYSTEMS

sponsors/funders impress

MANCHESTER 1824
The University of Manchester

Disclosures

Over the past three years I/my research group have received research funding and/or honoraria from the following companies:

- Alcon
- AMCo
- CooperVision
- Essilor
- Johnson & Johnson Vision
- Menicon
- RB
- Shire
- Ultravision
- UMIP
- BBSRC
- EPSRC
- Royal Commission for the Exhibition of 1851

I am a director of:

- Ai2 Limited
- Dynamic Vision Systems Limited

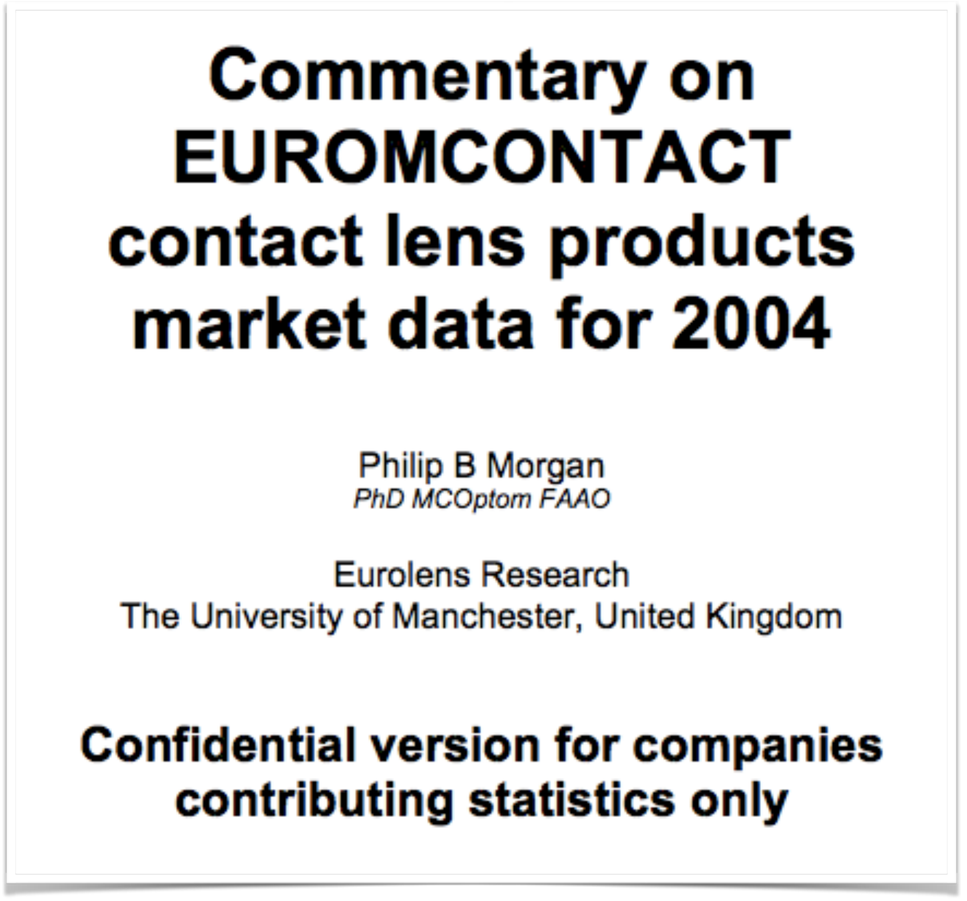
discipline/community to contribute

Annual reports for Association of Contact Lens Manufacturers

Northern Optometric Society
Secretary 1995-2004; Chairman 1994-5
Delivering lecture on my 40th birthday

discipline/community to contribute

BCLA Education Officer (and webmaster!) 1995-98



Annual report on European contact lens markets

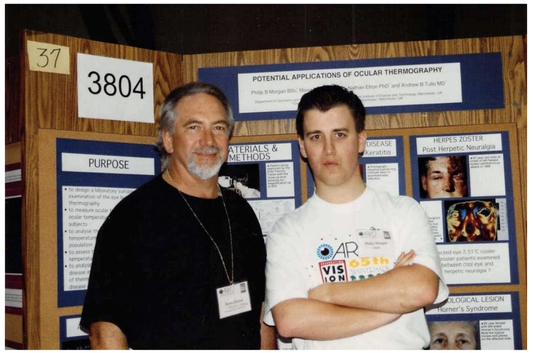
discipline/community to contribute

3rd IACLE World Congress in Manchester 2015

ISCLR Scientific Symposium in Portland 2019

mentors and amazing people
to imbibe

Nathan Efron



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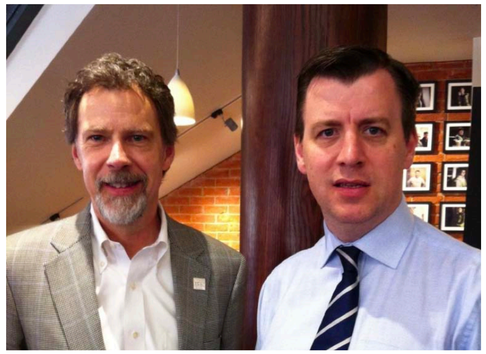
Noel Brennan

Steve Newman

Howard Griffiths



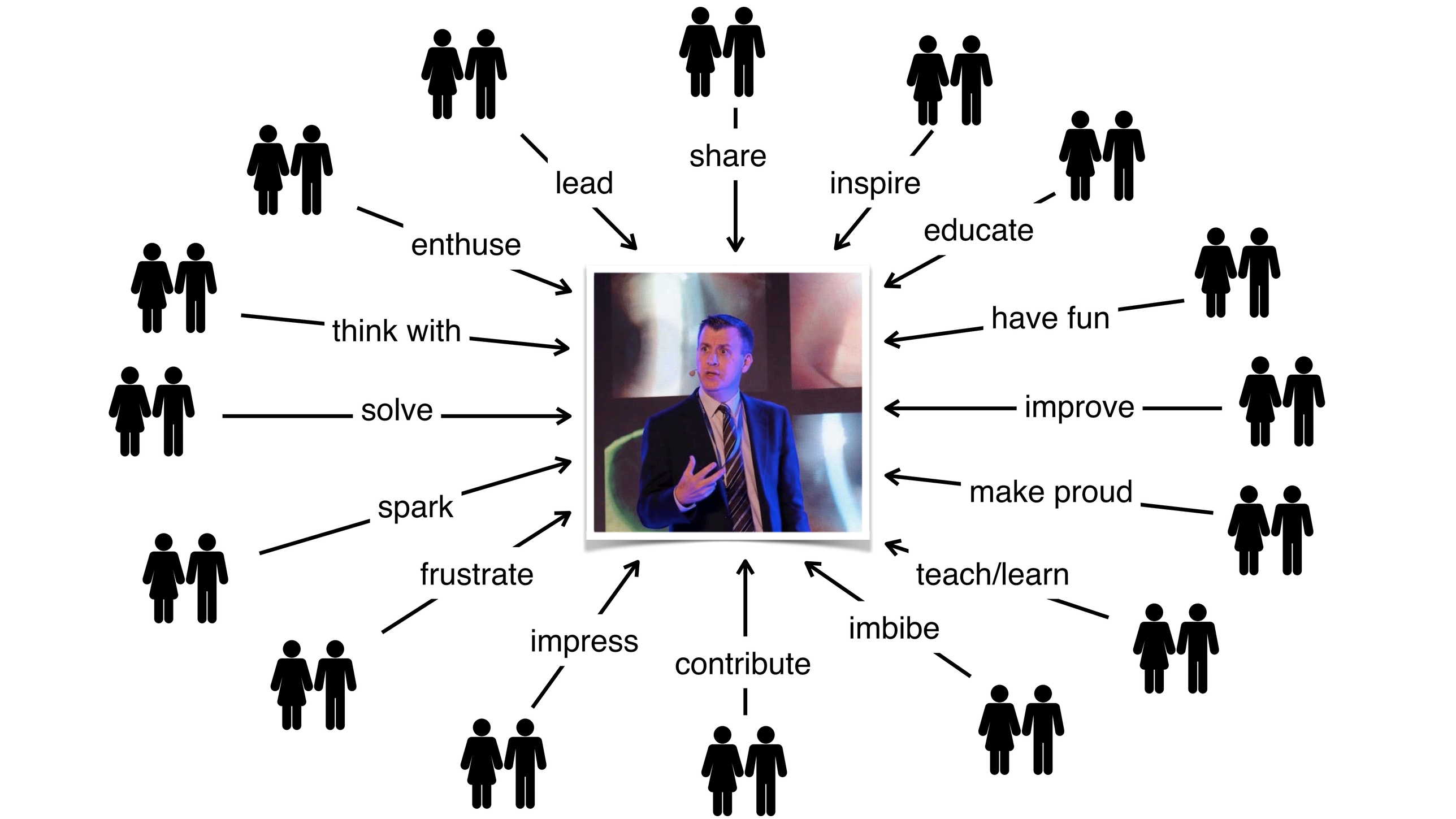
Gary Orsborn

Andrew Tullo

Helen Gleeson

Lyndon Jones


lead
share
inspire
educate
enthuse
think with
solve
spark
frustrate
impress
contribute
imbibe
teach/learn
make proud
improve
have fun


lead
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inspire
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solve
spark
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contribute
imbibe
teach/learn
make proud
improve
have fun


lead
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educate
enthuse
think with
solve
spark
frustrate
have fun
improve
make proud
teach/learn
imbibe
contribute
impress

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morgan
efron
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eye
vol
philip
prescribing
international
manchester
maldonado-codina
optometry
association
clinical
conference
meeting
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hydrogel
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jason
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interview
belousov
applications
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supplement
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