

Re:View

Keeping excellence in your sights | December 2021 | Issue 41

A new era begins

**Sponsorship boost
for the College**

**How cosmetics affect
the anterior eye**



Colleagues and friends meet up to mark the end of an era



The sun shone on the terrace of ABDO College on 11 September when friends and colleagues met with its founding principal, Jo Underwood, to celebrate her 21 years with the College and to mark her retirement.

Jo's leadership, dedication and enthusiasm have been outstanding, developing a first-class team and a world class centre of excellence and innovation at Godmersham.

Jo handed over the reins to Dr Robert Cubbidge in the summer, with great confidence that the College is in safe hands and Rob will continue with its development, taking it to the next level and beyond.

I wish to extend a very warm welcome to an exceptionally high number of first-year students, wishing you all the best as you embark upon your career, along with all other students at various stages of your career in this wonderful profession.

As life returns to some form of normality, it's great to see students returning to the College. Our beautiful historic building has come alive once again with the hum of lectures, chatter and laughter. Many of you will be soon attending Godmersham with excitement but I'm sure many may also have ongoing concerns about Covid. Rest assured that the College team continues to apply appropriate measures, ensuring students and staff learn and work in a Covid-safe environment.

Details of all our courses can be found on the College website, www.abdocollege.org.uk. Please don't delay enrolment though, because 2022 is just around the corner and courses are expected to be over-subscribed.

Clive Marchant FBDO

Chair,
ABDO College Board of Trustees

News

The graduation celebration makes a welcome return

In a welcome return to normality, the annual graduation and prize-giving ceremony was due to take place at Canterbury Cathedral on 24 November as *Re:View* magazine went to press. Over 100 students were eligible to attend.

The prizewinners this year were: Matthew Lewis who won the Essilor Prize and Emily Cruise who achieved the Stepper Prize. Abigail Frobisher achieved a double with the Association of Contact Lens Manufacturers Prize and the Alcon Prize for Excellence.

Billy Deeming won the Association of Optometrists Prize and Daniel Smith won the Worshipful Company of Spectacle Makers accolade. Ryan Carroll won the James Conway Prize and Isabel Booth achieved the Rodenstock Prize.

Simon Butterfield was awarded the British Contact Lens Association Prize and Trevor Burgess won the Bailey Prize. Letitia McLaughlan was awarded the Contamac Prize.



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Partnership brings sponsorship boost, increasing awareness of manufacturing

Millmead Optical Group has renewed its sponsorship of ABDO College for another four years, meaning that students will be learning about frames in the Jai Kudo Optics lab and supporting



information for their studies will be displayed across the relevant classrooms with new educational imagery.

The latest manufacturing techniques and product innovations will be highlighted and explained. The aim is to create more awareness about the manufacturing side of optics while highlighting the importance of sustainability.

“Having been involved in the industry for 75 years, we feel it is important to support the next generation of professionals coming through as it is vital to keep the industry moving forwards and innovating. One of the ways we do that is to support

ABDO College,” explained Millmead’s chief executive, James Conway.

“The critical job performed by the College, along with the supportive and extremely dedicated staff, made the decision to sponsor the College an easy one,” he added.

College principal, Dr Robert Cubbidge, said: “On behalf of the staff and students at the College, I would like to thank Millmead Optical Group for their generous support. Building strong relationships with the optical industry is a vital component in maintaining an up-to-date education for our students.”

Changes to course coordinator roles and an addition to the operations team

A new structure has been announced for the College’s course coordinator roles. Rian Love continues to be coordinator for optical support courses, however, Mark Gibson has taken on the role of course coordinator for the ophthalmic dispensing courses and Simon Butterfield leads on the postgraduate courses.

A new role has also been created, operational services support administrator, and Karen Johnston took up the job in July. Her role is to support the operations team with organising the students’ classes, registers, fire safety and food requirements. She also helps maintain the College’s virtual learning environment. Karen is based in the College’s reception area and helps with student requests, the post and stationery requirements.

Previously Karen worked in branded and own label sales in both food service and retail for 20 years for companies such as Kraft Jacob, Suchard, British Sugar and Heinz. She worked her way up to regional sales manager and national account manager.

Karen moved to Kent from Cheshire during the peak of lockdown and she decided to take on a new challenge.

“I’ve always been in roles that involve working with people as that’s what I enjoy. My role at the College plays to that strength but also allows me to utilise my time management, organisational and IT skills,” she explained.

Karen’s first experiences of the College had a big impact. “I was in awe of the house and the estate,” she said. “I started



Karen Johnston

in the summer when there were no students, so it was really quiet. Now that they are back the house feels full of life again and it’s lovely to see them back in.”

News

College bids a fond farewell to its founding principal upon her retirement

A special event was held in September at the College to mark the retirement of its founding principal, Jo Underwood, who has stepped down after 21 years.

ABDO general secretary, Tony Garrett, said: "It would be impossible to adequately say thank you to Jo for all that she has done and achieved. Her leadership, dedication and enthusiasm are legendary and she has created a first-class team at Godmersham, which is rightly seen as a world class and innovative centre of excellence.

"The whole Association and the College trustees hold Jo in the highest possible regard and everyone wishes her all the very best for the future."

Jo said: "I am so grateful for being given the fantastic opportunity to bring ABDO College into existence in 2000 and become what it is today. It has been a real privilege. Not many people,

particularly in education, get to start with a clean slate, no-one to live up to, no set processes to have to follow and no staff team already in place. The journey has been one that I have loved."



New principal highlights the times they are a-changing in education

Dr Robert Cubbidge took over as College principal in the summer and he is now busy looking to the future of Godmersham amid a changing educational landscape.

"The GOC Education Strategic Review and forthcoming syllabus change from ABDO will entail some redesign of our programmes to meet new learning outcomes and ensure that we provide top quality education," Rob explained.

"One of my first tasks has been to consolidate the quality assurance processes in place for the programmes to make us more responsive to changes in the future. This has entailed redesigning the College's management structure and integrating student feedback into

the decisions made with respect to the teaching of our programmes.

"I also hope to expand our postgraduate offering over the coming years and to develop the College's research profile in ophthalmic lenses and dispensing," he added.

Rob has a long history with the College and ABDO which began when he rewrote the Access to Optics course 15 years ago. He also spent seven years as external moderator for the ABDO theory examinations and two years compiling the College bookshop publication, *Ophthalmic Lenses Availability*.

Since becoming principal, Rob has become even more impressed by the

College. "As I have got to know the staff, I am very impressed by the commitment they continually show. The lockdowns required the College to completely redesign delivery to an online environment and the achievement of the staff in making this happen at short notice cannot be underestimated," he said.

Looking back on what first attracted him to becoming a lecturer, Rob said: "To fund my PhD, I was employed by Aston University as a clinical demonstrator which is where I had my first taste of teaching, which I enjoyed. The combination of teaching, with the ability to undertake clinical research, is what attracted me to a career in academia."

An optical career driven by a love for the pursuit of scientific knowledge

In their final year, ABDO College degree students are all required to complete a dissertation which focuses on a research question of their choice. In this feature you can read about Kathryn Chidwick and her research paper, *'How does the use of ocular cosmetics affect the anterior eye?'*

Doing work experience at a local multiple while at school helped graduate Kathryn Chidwick secure a job at the practice and led to her successful career in optics.

From school age Kathryn worked as an optical assistant at weekends while studying for her A Levels. She then progressed to complete a BSc (Hons) in Biology and then an MSc in Biomedical Science while working weekends.

"After finishing my university course, I wanted to put my knowledge and love of science into practice and was offered the training to become a dispensing optician by my director," she explained. "I wanted to progress with the company and practice and was offered the course by my store director at the time."

Kathryn completed the BSc (Hons) Ophthalmic Dispensing course at the College and now works at Boots Opticians in Doncaster as a dispensing optician. "I enjoy the ability to spend time with patients, to give them the best possible outcome," she said, adding: "My position allows me to give the best advice for my patients from a clinical perspective, based on their wants, needs and budgets."

Kathryn's first experiences of the College are memorable. "ABDO College was completely different to any institution

I had previously studied at," she exclaimed. "It had a much more personal experience, particularly with the small study groups, in comparison to the large lecture halls I had previously engaged with."

Kathryn's favourite parts of the course were the anatomy and physiology modules. "I loved being able to use what I had previously studied and put it into practice in a real-life, patient-facing situation."

Create a strict schedule

"Finding time to complete all the work for the diploma and the degree outside of working full time was definitely the most difficult challenge I faced," she revealed.

However, Kathryn overcame the challenge by creating a strict schedule to overcome the timing difficulties and discovered that getting ahead with assignments allowed her more time for her degree work.

Her research on ocular cosmetics was inspired by her observations while working in the practice. "Throughout my time in optics, I have noted little advice or guidance for patients on using

cosmetics safely to avoid ocular issues," she said. "I thought this was strange, given the number of patients, including myself, who wear them on a regular basis.

"After looking at scientific journals I noticed there was only small amounts of research conducted on this topic and thought it would be useful to collate it all for future research.

"I gathered all the research papers I could find to compare and contrast the research methods and results with the aim of providing a basis for future work to be completed, possibly in a laboratory environment," she explained.

Kathryn's research suggests the potential impacts of improper cosmetic use. "However, this needs to be expanded further into a laboratory environment to explore the specific microbiological species and thus risks to the patient to enable practitioners to create appropriate advice," she added.

Kathryn's studying hasn't finished yet as she would like to expand her knowledge on contact lenses and

pathological conditions. As her particular interest is microbiology, in the future she would also like to do scientific research for the optical sector.

Her advice to current College students is: "Keep a strict plan of assignment due dates, coursework dates and exam dates then choose a schedule to allow appropriate prioritisation and time management."

'I loved being able to use what I had previously studied.'

How does the use of ocular cosmetics affect the anterior eye?

By Kathryn Chidwick BSc Ophthalmic Dispensing

INTRODUCTION

The global cosmetics market is an ever-increasing sector, valued at \$532.43bn in 2017 and expected to rise to \$805.61bn by 2023 (BioPortfolio 2020). Approximately 86 per cent of females wear cosmetics alongside five per cent of males, a consistently increasing number which is expected to rise further (YouGov 2018). However, there is little discussion and guidance on the effects of cosmetic application in optometry and long-term use (Ng *et al* 2012). Alongside the increase in cosmetics use, a rise in adverse reactions has been noted, suggesting the two may be positively correlated (Coroneo, Rosenberg and Cheung 2006).

An understanding of cosmetics uses and associated problems are required for practitioners to give appropriate clinical advice and management (Coroneo, Rosenberg and Cheung 2006), (Wang and Craig 2018). This article will critically analyse research regarding cosmetics and how they affect ocular health. It will focus on infection, contact lens complications, dry eye and adverse reactions.

METHOD

A literature search was conducted through primary and secondary sources. For primary research, data was collected in the form of a literature search using Boolean search criteria strings such as 'AND', 'OR' and 'NOT' (Boolean Searching, 2020). Online journals were accessed via archive sites such as PUBMED, Google Scholar, Research Gate and Wiley Online Library.

FINDINGS

Infection

Giacometti *et al* (2013) noted the associations between improper handling of cosmetics and increased infections. Their data found that 98 per cent of women surveyed owned cosmetics which were expired, with the most common being mascara. When sampled and plated onto nutrient agar, 79 per cent of 40 sampled mascaras contained *Staphylococcus aureus* and 13 per cent contained *Pseudomonas aeruginosa*. This recommended that practitioners should be

aware of the risk of *Pseudomonas aeruginosa* infection (Buckley 2012), (Pack, Wickham, Enloe and Hill 2008), (Wilson and Ahern 1977). *Pseudomonas aeruginosa* and *Staphylococcus aureus* have both been linked to ocular infections such as conjunctivitis, keratitis and forms of ophthalmitis (Giacometti *et al* 2013), (O'Callaghan 2018), (Wilson and Ahern 1977).

A study in 2017 tested the amount of *Staphylococcal* bacteria with *Pseudomonas aeruginosa* and fungi present in cosmetics. Results found that the microbial content was highest when the ocular cosmetics were used by multiple people before the expiry date and secondly, by one person using expired products, with the lowest levels of contamination by one person using an item before expiry. *Staphylococcus* was found in 20 per cent of samples, *Pseudomonas aeruginosa* in 0.02 per cent of samples and various fungi in 0.7 per cent (Skowron *et al* 2017). This suggested that patients should avoid sharing products and using them past their expiry date to reduce the chances of ocular infections.

Contact lens complications

Approximately 75 per cent of contact lens wearers use make-up which can increase the risk of infection if responsible wear and care is

not adhered to (Ibrahim *et al* 2018), (Whitmore 2016). Eyeliner is known to migrate into the eye and the tear film, thus coming into contact with a contact lens (Wang and Craig 2018). An *in vivo* study by Park *et al* (2013) assessed the problems with eyeliner migration into the tear film and contact lens interactions. Further data found that eyeliner on contact lenses decreased the light transmission through the lens, in correlation with the length of time the lens was worn in conjunction with cosmetics. It also found that soft lens materials hilafilcon B and etafilcon A decreased in diameter when exposed to eyeliner application, whereas narafilcon A materials increased in diameter.

An *in vitro* experiment also found eyeshadow components follow the concept of Fick's law and diffuse into contact lenses driven by a polymer-dye interaction, which can affect hydration and swelling of the lens. Silicone hydrogel lenses were found to absorb far more pigment than hydrogel lenses, concluding that cosmetic wearers may not be suitable for silicone hydrogel (Tavazzi *et al* 2017).

Practitioners can advise patients to insert their contact lenses before applying any cosmetics and to remove them before applying any cleansing products (Lievens, Cilimberg and Moore 2017).



Dry eye

Cosmetics use has been suggested to be involved in multiple factors contributing to dry eye disease by increasing debris in the tear film. This may result in meibomian gland blockage, poor tear quality and meibum contamination, which is thought to destabilise the tear layer and make evaporation more likely (Wang and Craig 2018). Two studies have found that the main method of cosmetics migration into the tear film is through the application of eyeliner to the posterior lash line (Goto *et al* 2010), (Ng, Evans, North and Purslow 2015). It is also suggested that, due to meibomian gland blockage, cosmetics can be a risk factor for chalazion development (Alsammahi *et al* 2018).

Skincare products for the ocular area can also be correlated to dry eye and a poor quality ocular surface. Many anti-ageing skincare products contain retinoids, a derivative of vitamin A (Ng *et al* 2016). Retinoids have been associated with decreased vision, poor night vision and blockage in meibomian glands (Bergler-Czop *et al* 2016). Retinol causes keratinisation and thickening of sebaceous glands, such as the meibomian glands. This reduces sebum production and cuts the efficacy of the meibomian glands, suggesting a link between retinol, meibomian gland dysfunction and dry eye (Ding and Sullivan 2012).

Adverse non-infectious reaction

There are a multitude of allergic reactions to various ocular cosmetics, such as allergic conjunctivitis, keratitis, hyperaemia and dermatitis. Allergic conjunctivitis is usually self-resolving after removing the specific allergen. The signs of this present as chemosis and swelling of the eyelids. Symptoms appear severe, however they usually resolve within a few hours (Kanski 1994). It is important for a dispensing optician to recognise the symptoms of allergic conjunctivitis and differentiate from other urgent ocular conditions to effectively manage and describe possible irritants for patients to cease use.

Allergic dermatitis is common on the eyelid as a reaction to eye cosmetics or even a transfer of products from a patient's hair. It may therefore be appropriate for a practitioner to discuss any changes to cosmetics use when triaging a patient.

A recent observational case study also noted the effects of inappropriate removal of cosmetics over time. The study revealed that hardened mascara deposits on the patient's palpebral conjunctiva led to follicular conjunctivitis, with possible progression into corneal infection and a loss of vision in some cases (Robaei 2018). The main advice regarding preventing these problems includes the appropriate removal of cosmetics, application to the outer lashes only and application of shadows and eyeliner external to the lash line to prevent contact with the meibomian glands (Petrosyan 2018).

DISCUSSIONS

Using Cottrell's critical framework (2011) and the critiquing guide by Coughlan, Cronin and Ryan (2007), the literature was analysed for reliability, bias, generalisability and validity.

Giacomet *et al* (2013) focused on a sample of 44 female students, using a cross-sectional method. A questionnaire included open and closed questions, thereby producing qualitative and quantitative data, while the physical examination and microbiological evaluation produced quantitative data.

Using mixed methods can provide subjective information alongside objective results which can be appropriate in some research (McCusker and Gunaydin 2014). In this case, it provided information on the possible complications of using expired cosmetics and how many patients do not comply with guidelines, enabling appropriate recommendations to be made from opticians.

Studies on females have shown no significant difference between age groups (Loretz *et al* 2008), with their study only assessing 18-28-year-olds, therefore it may be useful to assess a wider age group and some males. Additionally, only mascara was studied for harmful organisms, whereas it has been shown that eyeliner and glitter can migrate onto the ocular surface (Whitmore 2016).

The research conducted by Skowron *et al* (2017) followed a quantitative research approach using an independent groups design. Their results used objective microbiological techniques to identify and quantify microorganisms in products and therefore has no risk of subjectivity, also making the research easily replicable. However, the study does fail to describe the

participants, therefore they may have known the aims of the study and adjusted their behaviour accordingly. This is known as the Hawthorne effect, which reduces the validity and generalisability of the results (Sedgwick and Greenwood 2015).

The two studies by Wilson and Ahern (1977) and Schwartz *et al* (1989) were both conducted over 30 years ago, therefore it could be that these results are no longer applicable today. The data from Ibrhahi *et al* (2018) and Whitmore (2016) both corroborate that approximately 75 per cent of contact lens wearers also wear cosmetics, evidencing reliability. This can be used in practice to ensure ophthalmic and dispensing opticians are aware of the risks involved. However, no data in the contact lens texts cover this, suggesting it may be a neglected topic which needs more awareness.

For Tavazzi *et al* (2017) both direct and indirect methods were used to assess the cosmetic uptake of contact lenses through an in vitro method. This produces statistical results based in laboratory conditions, where many variables are controlled. This is poorly applicable to a living organism such as a contact lens patient, therefore we cannot apply the results directly into practice.

The recently published case study on the effects of inadequate mascara removal shows that, in accordance with research from Wilson and Ahern (1977) and Schwartz *et al* (1989), inappropriate use of cosmetics is still causing ocular conditions (Robaei 2018).

CONCLUSION

From the literature reviewed, it is clear that cosmetics use increases the risk of infections, dry eye syndrome, contact lens complications and allergies. The risk of infections can be reduced by practitioner advice to not use products past their expiry date and not to share with others. Contact lens research needs to be assessed outside of a laboratory before any applications can be applied to optometric practice.

For article references, visit
<https://abdocollege.org.uk/references/>

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