

1:30 PM 2 hours
P-08

Room 225 A-B

Papers: Soft Contact Lenses

Moderators: Cristina M. Schnider, OD, MS, MBA, FAAO,
Diplomate, Cornea, Contact Lenses & Refractive
Technologies, Meredith E. Jansen, OD, MS, FAAO

1:30 PM. **THERE ARE HOW MANY CONTACT LENSES IN WHAT?!**
(120967)

Janelle Routhier, OD, FAAO, Sheila B. Hickson-Curran, BSc, (Hons), MCOptom,
FAAO, Melissa Defreitas, BS, Vistakon

RESULTS: The calculated weight of a year supply of dehydrated DD lenses (730) weighed 11.36g or 0.40oz. This is equivalent to the average weight of 2.30 credit cards. The average weight of a multipurpose solution (MPS) CL case is the equivalent of over a 4 year supply of lenses, while a peroxide case has a weight equal to more than 8 years worth of lenses in it. It takes over a 2.5 year supply of DD lenses to equal the average weight of the material in one bottle of either MPS or peroxide CL solution. A 20oz bottle of water has the equivalent weight of 1,586 dehydrated CLs or a 2.17 year supply.

PURPOSE: To determine and compare the amount of daily disposable (DD) contact lenses (CL) it takes to reach the equivalent amount of material in commonly used plastic items.

METHODS: A leading DD lens was dehydrated using an isotemp vacuum oven at 56°C for 19 hours, and the dry weight was measured on a Metler Toledo scale. Commonly used items such as a water bottle, CL case, CL solution bottle and credit cards were also measured for comparison purposes and the equivalent weights calculated.

CONCLUSIONS: If patients are concerned about throwing a lens away every day, doctors can reassure them it's not the lenses that have a large impact, but the solution bottles and cases needed to store reusable lenses. Doctors can also use real world examples to compare how many lenses are equivalent to common items such as water bottles and credit cards. Although there is more packaging waste associated with DD CLs, it is possible to recycle some of that material (plastic and cardboard only) by following the specific guidelines of one's city recycling program and seeking further information on how to recycle #5 polypropylene plastic in one's area.

1:45 PM. **COMPARISON OF THREE DIFFERENT METHODS OF
SCLERAL RIGID GAS PERMEABLE(GP) LENS INSERTION** (120150)

Stephanie Woo, University of Missouri-St. Louis School of Optometry

RESULTS: The results show that subjects found the use of the EZi Scleral Lens Applicator to insert a scleral contact lens to be significantly easier than the other two methods ($P < 0.05$) with no difference between the o-ring and the large DMV plunger

PURPOSE: The increasing popularity of different types of scleral GP lenses, including corneo-scleral, semi-scleral, mini-scleral, and scleral lens designs for management of the irregular cornea has resulted in an option that often provides improved comfort, vision, and/or fitting relationship as compared to a patient's previous contact lens correction. With spherical and multifocal lens designs currently being introduced for healthy eyes,

the future of these designs appears to be very good. However, one of the challenges of these designs is the ability of patients to handle lenses with large overall diameters ranging from 13.5mm to 18.2mm, and sometimes larger. The goal of this study was to compare three conventional methods of inserting scleral lenses: A large DMV plunger (i-promotions), a size 8 o-ring (available from any hardware store), and a newly introduced device entitled EZi Scleral Lens Applicator (Q-case, inc.).

METHODS: Nine subjects participated in this study and, at three separate visits, in a randomized format, they used each of these methods to insert a scleral lens. After each method they would rate the ease of insertion from a “1” (very easy to insert) to a “10” (very difficult to insert) scale. At the conclusion of the study they ranked the three methods from “1” (easiest to insert) to “3” (most difficult to insert).

CONCLUSIONS: It is concluded that a new method of scleral lens insertion is easier for subjects to use and may represent a future method of reducing a present challenge existing for many scleral lens wearers.

2:00 PM. **THE IMPACT OF COSMETICS ON THE SURFACE
APPEARANCE AND WETTABILITY OF SILICONE HYDROGEL CONTACT
LENSES (120317)**

Sruthi Srinivasan, PhD, BSOptom, FAAO, Doerte Luensmann, PhD, Dipl Ing (Fh) AO, FAAO, Heinz Otchere, Mili Yu, Jeffery Yang, University of Waterloo, Centre for Contact Lens Research

RESULTS: Changes in CA after cosmetic application were highly lens dependent. Hand creams caused primarily a decrease in CA for five of the seven lens types, while one of the waterproof mascaras caused a large increase of 30-50° for three lens types. Mean PB was significantly higher for mascara-coated lenses compared to the other products ($p < 0.01$). Clear Care removed most deposits from the non-waterproof mascara for four lens types, while deposits remained relatively unchanged for one waterproof mascara ($p > 0.05$). Hand creams and makeup remover had minimal impact on PB.

PURPOSE: Silicone hydrogel (SiHy) materials have relatively hydrophobic surfaces and may negatively interact with cosmetic products. This study evaluated the impact of cosmetics on surface deposition and wettability of SiHy contact lens materials.

METHODS: In this in vitro experiment, 7 SiHy materials were coated with one of nine cosmetics, including common hand creams (3), eye makeup removers (3) and mascaras (3). The sessile drop technique was used to determine the advancing contact angle (CA) and dark field microscopy images were taken for the analysis of mean and standard deviation of pixel brightness (PB) to describe visible surface deposition ($n=6$ for each lens type), with a higher PB indicated increased deposition. Measurements were repeated after a single Clear Care® cleaning cycle.

CONCLUSIONS: Some mascara-lens combinations resulted in reduced in vitro wettability and increased PB, which could have an impact on in vivo lens performance. Non-waterproof mascara was mostly removed following a cleaning cycle. These results have clinical implications for SiHy wearers using cosmetics.

ADDITIONAL COMMENTS: Financial support for this study was provided by Alcon.

2:15 PM. **DEMONSTRATING THE ABILITY TO DETECT CHANGE USING CLUE: CONTACT LENS USER EXPERIENCE? (120576)**

Michael Henderson, MS, Danielle Boree, MS, Kristy Canavan, OD, Terri Henderson, MS, Johnson & Johnson Vision Care, RJ Wirth, PhD, Vector Psychometric Group LLC

RESULTS: Subjects who were habitual wearers of the study lens had a measured improvement from baseline to first wear cycle dispensing of 13.37 (95% confidence interval 8.69, 18.06) for comfort and 8.42 (4.65, 12.18) for vision. The first wear cycle follow-up was similar to baseline with 0.82 (-4.19, 5.83) for comfort and -0.24 (-4.35, 3.88) for vision. Subject who were being switched to the study lens had a measured improvement from baseline to first wear cycle dispensing of 23.07 (17.43, 28.71) for comfort and 9.54 (4.99, 14.10) for vision. The first wear cycle follow-up had an improvement from baseline of 10.10 (3.99, 16.21) for comfort and 5.71 (0.56, 10.87) for vision.

PURPOSE: Clinical trials measure change over time and a patient-reported outcome (PRO) instrument must have the ability to yield a consistent and reproducible estimate of the true treatment effect while also detecting true changes equally as gains or losses. This study examined the PRO instrument CLUE: Contact Lens User Experience™ for these properties while measuring contact lens comfort and vision domains.

METHODS: A total of 250 clinical trial subjects (30 to 45) that were myopic habitual wearers of daily wear silicone hydrogel contact lenses were recruited into one (202) or two (24) of a series of 4 clinical trials with similar study design. PRO measurements were collected with the CLUE? instrument for each subject?s habitual lens (baseline) as well as at dispensing and follow-up. Subjects in each trial were dispensed (masked) the same daily wear silicone hydrogel lens. This work examined the effect of fitting the lens on subjects who were habitual wearers of the lens (55.6%) or being switched to the lens (44.4%) while maintaining the same contact lens power in each eye.

CONCLUSIONS: The CLUE? instrument detects changes for subjects switching lenses or receiving a fresh pair of their habitual lens for vision and comfort domains. CLUE? demonstrates equivalence when comparing worn lenses from the trial follow-up visit to the baseline of habitual wearers for vision and comfort domains.

2:30 PM. **COMPLIANCE WITH ELECTRONIC CAPTURE OF SOFT CONTACT LENS VISUAL PERFORMANCE MEASURES (120016)**

Meredith E. Jansen, OD, MS, FAAO, Pete S. Kollbaum, OD, PhD, FAAO, Martin Rickert, PhD, Indiana University School of Optometry

RESULTS: The overall completion rate based on 677 electronic surveys was 95.0%. Of these, only 3.73% were completed late. Completion was lowest on Saturday (89.6%) and Friday (92.7%) and highest on Sunday (99.0%). Weekend (Friday and Saturday) completion rate was significantly lower than weekday completion ($p=0.03$). Fisher exact tests indicated no significant association with gender for either weekday ($p=0.25$) or weekend (0.73). Odds ratio estimates suggested that participants 23 and older were more likely to complete the survey as requested (weekday: $OR=4.39$, $p=0.14$; weekend: $OR=2.93$, $p=0.19$), with these associations approached significance.

PURPOSE: Electronic data capture is becoming increasingly common in clinical

research for collecting subjective patient responses in real-time or during out-of-office periods. The purpose of this study was to investigate compliance with a nightly email request to complete an electronic survey regarding contact lens visual performance.

METHODS: Forty-eight subjects (34 females) were fit and dispensed two pairs of soft contact lenses for one week each. Subjects were sent a nightly e-mail at 8 PM containing a link to an electronic survey asking 25 questions about their nighttime soft contact lens visual performance. Subjects were instructed to observe their nighttime environments and complete the survey before going to bed. The completion rate of the questionnaires was evaluated relative to the day of week, day of study, and respondent age and gender.

CONCLUSIONS: E-mail based surveys provide an effective method for obtaining time specific subjective responses from subjects. Although on-time compliance is reasonably robust with respect to the day of week on which the assessment occurs, older participants may be more likely to complete all surveys than younger participants.

ADDITIONAL COMMENTS: Contact lenses provided by Alcon/Ciba Vision.

2:45 PM. **PATIENT, PRACTITIONER AND PARENT MOTIVATION FOR CHOOSING DAILY DISPOSABLE CONTACT LENSES BY AGE FOR NEW AND EXISTING LENS WEARERS (120416)**

Sheila B. Hickson-Curran, BSc, (Hons), MCOptom, FAAO, Vistakon Johnson & Johnson Vision Care Inc., Robin L. Chalmers, OD, FAAO, Atlanta GA, William J. Gleason, Roger Albright, MBA, Foresight Regulatory Strategies Inc., Lisa Keay, BOptom, PhD, MPH, The George Institute for International Health

RESULTS: For new and existing wearers ECPs top choice was patient convenience with DDs (89% & 86% new and existing, respectively, and 95% for new children). For all new wearers, compliance with hygiene (85%) and a high success rate (84%) followed. Reduction of dryness and redness was cited more often for existing adults than children ($p=0.02$). Compared to adults, existing child wearers differed on motivations for DDs: they had more often always worn DDs (56% vs 28%, $p<0.0001$) and reported less dryness with prior lenses (47% vs 60%, $p = 0.048$). Existing wearers top reason was ECP recommendation of DDs (94%), then DD ease of use (92%), and no cleaning required (89%). Parents of 102 children cited DD lens ease of care and convenience (96%), ECP recommendation (92%), and comfort (86%) as their top reasons.

PURPOSE: To describe the reasons for lens choice cited by eye care practitioners (ECPs), patients and parents of children by age and wearing status at registration in the 1-DAY ACUVUE TruEye and 1-DAY ACUVUE MOIST Performance Overview (TEMPO) Registry (#NCT01467557), a large, observational registry of patients newly fit with 2 brands of daily disposables (DD).

METHODS: Reasons for choice of hydrogel or silicone hydrogel DD lenses (etafilcon A or narafilcon B) were analyzed by age (≥ 15 yrs "children" vs >15 yrs) and for new and existing wearers (851 existing (59 (7%) children) and 151 new wearers (65 (43%) children)) at registration. Endorsement of multiple options was allowed. Data was analyzed with Sign Rank Test within and across groups for age and wear status (% of ECPs "Strongly Agree" and % of wearers/parents "Strongly Agree"/"Somewhat Agree" are shown).

CONCLUSIONS: Practitioners in this large registry strongly consider patient

convenience and ease of compliance with hygiene as reasons to recommend these brands of DD lenses, regardless of patient age. Existing patients consider ECP recommendation and clean lenses every day as top motivators to choose DD lenses.

ADDITIONAL COMMENTS: Funded by Johnson & Johnson Vision Care, Inc

3:00 PM. **CONTACT LENS-WEARING EXPERIENCE WITH A SILICONE HYDROGEL DAILY DISPOSABLE LENS IN NEOPHYTES (120952)**

Timothy A. Giles, Alcon Research Ltd, Robert Montes-Mico, PhD, Universitat de Valencia, Bo Lauenborg, OD, Danish Contact Lens Institute

RESULTS: 98 neophytes at eight investigational sites in Europe completed the study. Subjective ratings for comfort increased from baseline visit, at 1 week and at 2 weeks; including comfort during the day (7.6, 8.7, 8.9 $p<0.001$), comfort at end-of-day (6.9, 7.5, 7.9 $p<0.001$), and overall comfort (7.4, 8.5, 8.7 $p<0.001$). Subjective ratings for vision also increased from baseline; quality of vision during the day (8.3, 8.9, 8.9 $p<0.001$), quality of vision at end-of-day (7.5, 8.3, 8.3 $p<0.001$), and overall vision quality (8.1, 8.8, 8.8 $p<0.001$) respectively for baseline, 1 week, and 2 week visits. Agreement statements for acceptance of this new contact lens were high for all variables, with over 90% agreement for 'more comfortable than I expected?', 'easy to insert?', 'easy to wear?', and 'convenient to use?'. 85.9% of subjects reported vision the same or better than their spectacles ($p<0.001$), and 92.4% of subjects reported interest in purchasing these lenses ($p<0.001$)

PURPOSE: Most contact-lens related trials are conducted on experienced contact lens wearers, yet the neophyte presents unique challenges and opportunities. A 2 week parallel group clinical trial was conducted to evaluate various aspects of contact lens wear and fitting in neophytes using a new water gradient silicone hydrogel daily disposable (SHDD) lens.

METHODS: Neophytes interested in wearing contact lens were recruited to wear DAILIES TOTAL1 contact lenses, a unique water gradient SHDD lens. The water content of this lens changes from 33% at the core to over 80% at the outermost 6 microns of the lens surface. Subjects were seen at 1 and 2 week visits from dispensing and completed subjective questionnaires regarding their wearing experiences, specifically related to comfort and vision.

CONCLUSIONS: This new water gradient SHDD lens was well received among neophytes. The high subjective ratings for vision and comfort compared to spectacles can provide eye care professionals with positive data to encourage new contact lens wearers to try this unique contact lens with a high level of confidence.