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أول مجلة عربية متخصصة في البصريات
أيزون

النظارات الشمسية: نظارة أخرى بنفس أهمية الأولى
پویا إختراي: مستمرون في الحفاظ على تراث إيجما

The dangers of UV & Glare

The long and the short of soft contact lenses replacement

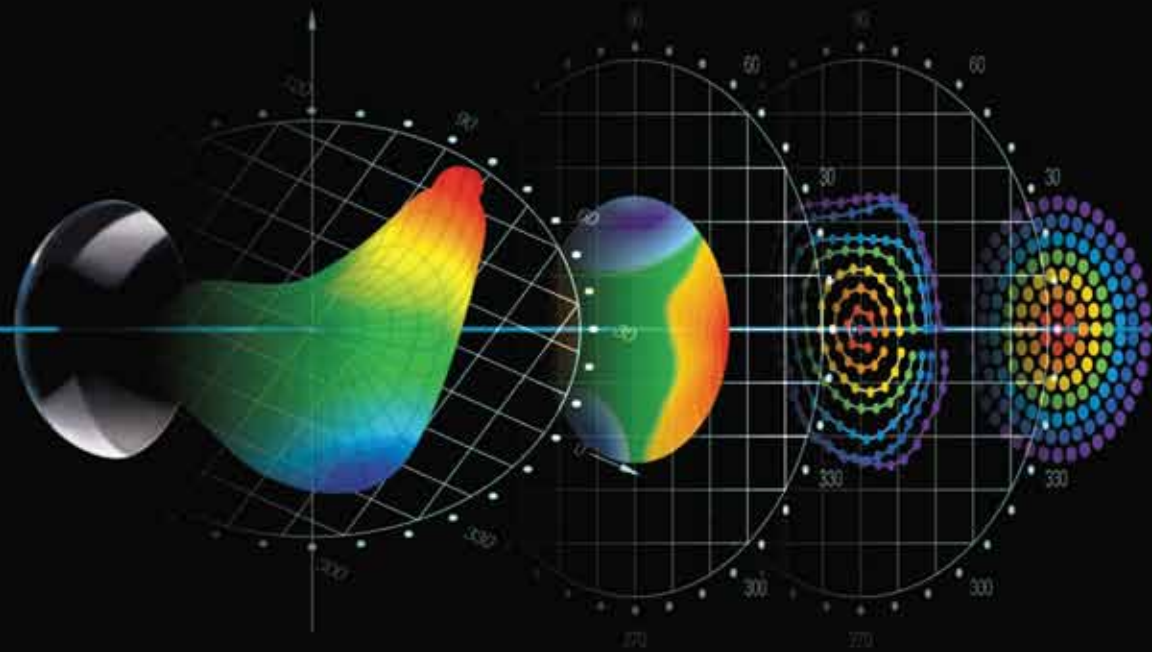
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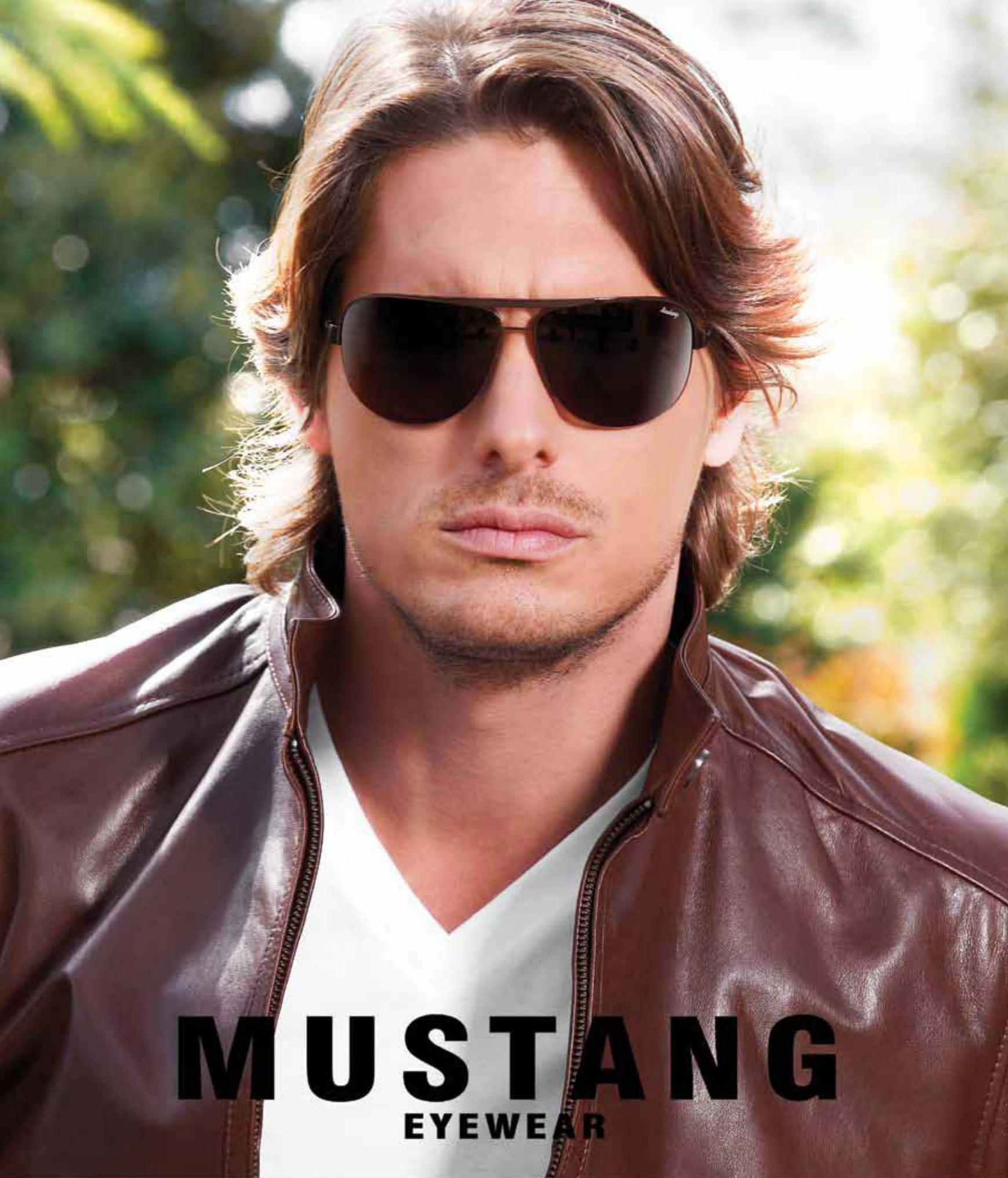
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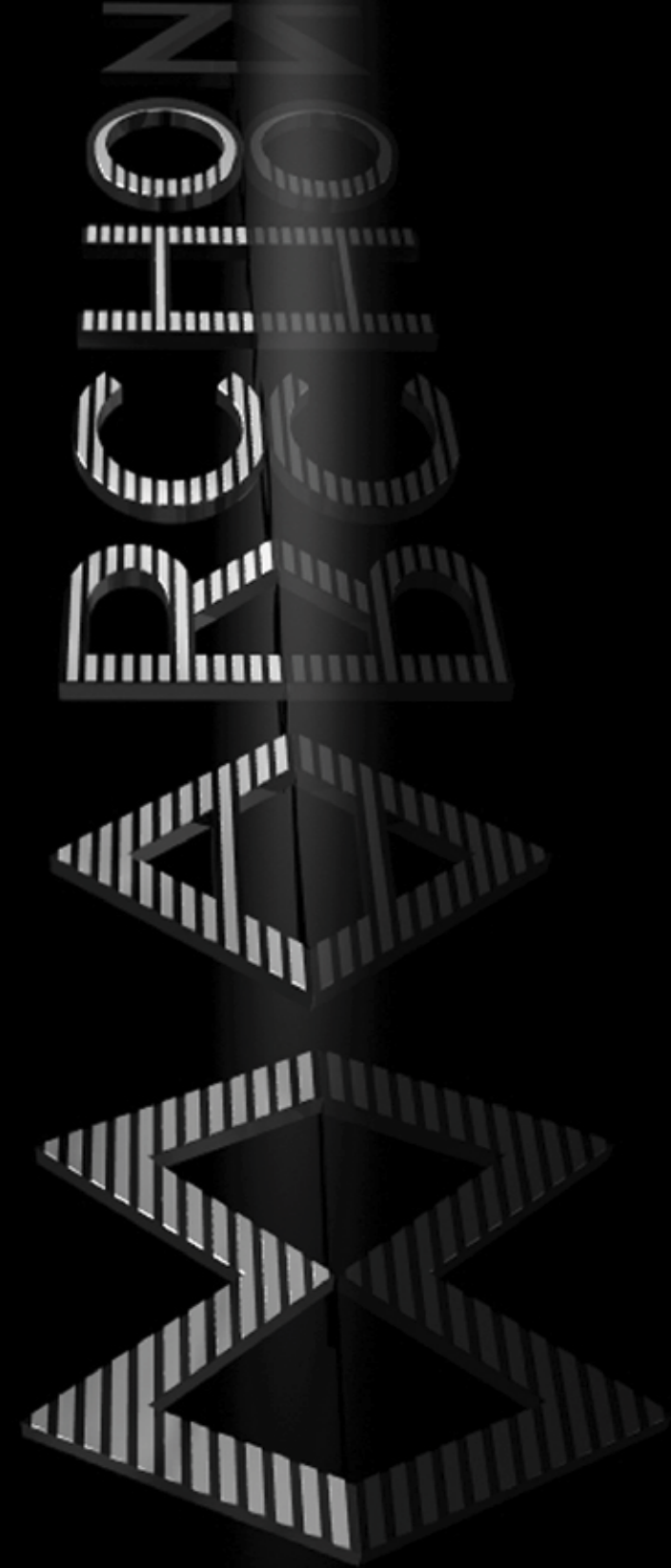
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رسالة من مكتب الناشر

معرض دبي للبصريات

لا مجال للشك أن معرض دبي للبصريات أصبح ينمو بوتيرة منتظمة، وأصبح يستقطب زائرين وعارضين بنسبة أكبر في كل عام مقارنة بالعام الذي يسبقه. ويحكم مشاركتنا في هذا المحفل منذ سنوات عديدة، نستطيع أن نرى بوضوح مدى إهتمام القائمين عليه بتطويره وتعزيز مكانته في المنطقة.

أحد أسباب نجاح المعرض أنه يقع تحت جناح مركز التجارة العالمي الذي في تقه على عاتقه أيضاً تنظيم المعارض الدولية في دبي لكافة الأنشطة التجارية على مدار السنة، لذلك فالخبرة التنظيمية والخدمات اللوجستية يتم توفيرها بسهولة. يحدث ذلك في الوقت الذي تقوم مدينة دبي بشكل عام بواجباتها المعهودة في الضيافة، وتبدي استعدادها التام لتمضي أيام المعرض بضمان الراحة ومتعة لقاء شركاء العمل.

وإن كان لهؤلاء الزائرون والعارضون خيارات أخرى في معارض عالمية خارج المنطقة، وربما تكون أكبر حجماً وأقدم عمراً، لكن الذي يميز معرض دبي هو أن جميع المشاركين يتطلعون إلى خدمة هذه المنطقة في مجال البصريات بالطريقة التي تستوفي بها احتياجاتها التي لا شك فيها خصوصية تتميز بها المنطقة.

إن سر نجاح المعرض والعارضين وإصرارهم على المشاركة في كل عام هو التواصل بين العارضين والزائرين ومحاولتهم معا فهم ثقافات حاجات أسواق المنطقة، والإستجابة لحاجاتها، وتبادل الأفكار البناءة للإستفادة من الفرص الواعدة التي تزخر بها.

وقد أثمر التواصل المستمر بين إدارة المعرض من جهة ونخبة من الشركات العارضة والمختصين من جهة أخرى، إلى تنظيم العديد من المحاضرات وورش العمل التدريبية لكي تصبح هذه الأنشطة إضافة أخرى تزيد من أهمية المعرض وتؤكد على دوره المتعاظم في خدمة صناعة البصريات في المنطقة.



محمد بن زايد

الناشر والمدير العام

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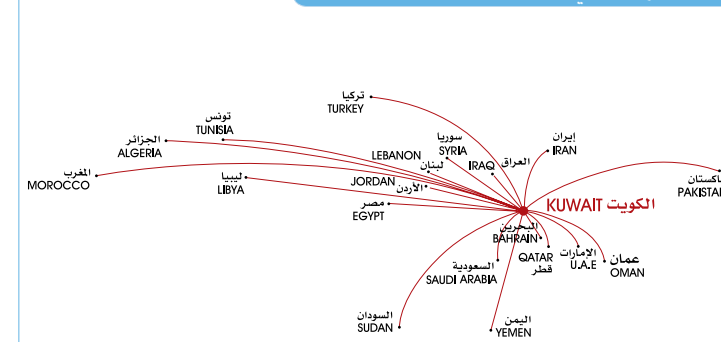
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النظارات الشمسية: نظارة أفرى بنفس أهمية الأولى

بقلم : مارك ماتيسون - شابينك

مسؤولية الحماية من أشعة الشمس تقع على عاتقك أنت

هناك الكثير من الأشخاص الذين يقضون معظم أوقاتهم ويقومون بنشاطاتهم في الهواء الطلق أكثر من أي وقت مضى، مما يجعل النظارات الشمسية ذو أهمية موازية للنظارة الطبية المستخدمة في الداخل التي إن كانت فعالة في الخارج تصبح الحماية ضد أشعة الشمس الضارة أكثر أهمية.

أعمل كأخصائي بصريات مستقل لبضعة أيام في الشهر وأشعر أنني قد ارتكبت خطأ عندما يغادر المرضى دون أن أقوم بتوعيتهم بأهمية الحماية ضد الأشعة فوق البنفسجية أو إعلامهم بوجود نظارات طبية شمسية.



مفصل مكون من قطعة واحدة
• لا توجد وصلات ملحومة
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• أقصى متانة بعكس الوزن
• خفيف، متين، مرن
• طبقات من اللون

اسم الماركة
• يحمل وعداً بمحاكاة الموضة والجودة
• الهوية التي تريد أن تبرزها

شكل ١

عند الأخذ بعين الاعتبار ما هو متعارف عليه حول مضار الأشعة على البشرة والعيون، ولأننا نعيش لفترة طويلة، فإن مسؤولية تقديم المعلومات اللازمة لكل مريض حول المخاطر المحتملة التي تنتج عن عدم وقاية العين بواسطة النظارات الشمسية ذات المواصفات التقنية عالية الجودة تقع على عاتق جميع أخصائيي البصريات. على هذه المعلومات أن تتضمن:

- نقاش محوره من حاجة إلى النظارة الشمسية ذات المواصفات التقنية عالية الجودة
- المخاطر المحتملة التي تسببها أشعة الشمس فوق البنفسجية والأشعة الزرقاء.
- نمط الحياة اليومي من أجل انتقاء أفضل أنواع النظارات الشمسية.
- كيف تعرض النظارات الشمسية في المحل.

بشكل عام، لدى المستهلكين معلومات ضئيلة حول آثار الشمس الضارة على عيونهم وكذلك الأمر فيما يخص النظارات الشمسية ذات المواصفات التقنية عالية الجودة.

أولاً أوجز الحديث في عبارات بسيطة تعطي المرضى أسباباً وجيهة لاقتناء النظارة الشمسية التي ترشحها، للقيام بذلك أنت بحاجة لفهم الخلفية التقنية التي تسمح لك بالتحدث بثقة وبذلك تصبح النظارة الشمسية ضرورة قيّمة وذات أهمية موازية للنظارة الأخرى. ثانياً، أظهر ثقافتك حول الجوانب التقنية للنظارات الشمسية ذات

الجودة العالية.

ثالثاً، استعرض فوائد شراء الإطارات والعدسات.

حوار النظارات الشمسية

بما أن معظم المرضى يتألمون موظفي الاستقبال والتقنيين قبل مقابلة الطبيب، على هؤلاء أن يشددوا على ذكر أهمية النظارات الشمسية ذات المواصفات التقنية عالية الجودة بينما يدونون معلومات عن المريض في المراحل الأولى من زيارته كما يتوجب على طبيب العيون وأخصائي البصريات أن يناقش المريض حول ضرورة الحاجة إلى النظارات الشمسية ذات المواصفات الفنية العالية بينما يجلس المريض على الكرسي.

بعدها يجب أن يناقش الطبيب هذا الأمر مع كل مريض فيوضح له أن النظارة الشمسية التي يحتاجها خارج البيت قد تشكل له أهمية أكبر من نظارته الطبية التي يستخدمها في الداخل، إنها لمن مسؤولية جميع من يعملون في مجال البصريات أن يجعلوا هذا النقاش من ضمن ممارستهم اليومية للمهنة.

تحدث إلى أولياء الأمور عن أهمية النظارات الشمسية للأطفال. يتعرض الأطفال العادي للأشعة فوق البنفسجية سنوياً ثلاث مرات أكثر من الشخص البالغ ويرجع ذلك إلى أن الجزء الأكبر الذي يتعرض الإنسان خلاله للأشعة فوق البنفسجية يحدث قبل سن ١٨ ، ولأن عدسة عين الطفل الصافية تنقل ٧٠.٥ أضعاف من الأشعة فوق البنفسجية مما تنقله عدسة عين الشخص البالغ التي تميل إلى الإصفرار (انتقال بنسبة ٧٥٪ في سن العاشرة و١٠٪ في سن الثلاثين) الأضرار الناجمة عن التعرض للأشعة فوق البنفسجية تأتي كنتيجة تراكمية وبالتالي لا بد من حماية تبدأ في أقرب وقت ممكن. لهذه الأسباب، يجب ألا ينحصر حديث أخصائيي البصريات ضمن فئة الراشدين وإنما جميع الفئات العمرية بما فيها الأطفال.

أسئلة حول نمط الحياة

يتناول استطلاع نمط الحياة أسئلة مباشرة ومفتوحة لمعرفة نمط الحياة الخاص بكل مريض. انها تسمح لإضفاء الطابع الشخصي من الفوائد التي تنعكس على المرضى. مثال ١ : سيد جونز، يرجى مناقشة الأنشطة التي تقوم بها في الهواء الطلق معي، حتى أتمكن من مساعدتك في تحديد اختياراتك. عبارة مثل هذه، يليها سؤال ما، سوف تجعله يفكر.

"سيد سميث، قلت بأنك تعمل كسائق، هل كنت تعرف بأن عدم وضوح الرؤية الناتج عن الوهج سبب رئيسي عن نسبة عالية جداً من حوادث المرور؟ دعني أشرح لك عن النظارات الشمسية المستقطبة المصممة لتحمي العين ضد الوهج المنعكس والتي توفر لك الحماية من الحوادث أثناء القيادة". مثال ٢: سيد جونز، ذكرت أنك كثيراً ما تمارس الملاحة، اسمع لي أن أوضح لك

النصائح المختصرة المفيدة هل علمت....

- أن النظارة الشمسية هي بنفس أهمية النظارة الطبية؟
- الحماية من الشمس يمكن أن توفر ضمن النظارة الطبية؟
- هناك مخاطر من عدم حماية عينيك بواسطة نظارات ذات جودة عالية؟

S.T. Dupont
PARIS

الحوار تحدث إلى :

- أصحاب النظارات الطبية، والعدسات اللاصقة
- مرضى العمليات الجراحية لتصحيح البصر
- المرضى تحت العلاج، ظهور بؤبؤ الماء الأبيض، ظهور أعراض ما بعد عملية الماء الأبيض
- أي شخص يقضي وقتاً طويلاً خارج المنزل تحت أشعة الشمس
- الناس الذين يبحثون عن المظهر الجذاب
- الآباء بخصوص أبنائهم الكبار أو حتى

الأطفال النصائح المختصرة المفيدة

- رجاء جرب هذه النظارات الشمسية
- هذه النظارة الشمسية الأصلية يمكن أن تكون طيبة أيضاً
- إسأل :
- كم من الوقت تتضيه في الخارج؟
- هل تذهب الى العمل بالسيارة ؟
- كيف تحمي نفسك من ضوء الشمس وضوء الأشعة فوق البنفسجية؟
- هل يضايقك الوهج ؟
- هل تعاني من جفاف العين ؟
- هل تمارس نشاطاً رياضياً يتطلب إحتياجات بصرية معينة ؟
- ما هي نوعية النظارة الشمسية التي ترتديها الآن؟

كيف أن عدسات البولارايزد تمنحك شعوراً بالراحة أثناء تواجدك في قاربك التي يمكنك أن تحصل على وصفة طبية لها بالإضافة إلى إطار من من ماركة عالمية تماماً كالمشاهير .

معرفة الحقائق : الإشعاع، التعرض له وحماية العين منه

ثلاثة مخاوف: الأشعة فوق البنفسجية والضوء الأزرق والوهج

تتعرض العين لأشعة الشمس فوق البنفسجية المرئية وغير المرئية. الجزء المرئي منها يسمى الطيف الكهرومغناطيسي والذي يمنحنا إمكانية رؤية اللون الأسود والأبيض والرمادي. حدود الأشعة الغير مرئية تحد الأشعة المرئية، ويطلق على الموجات الأقصر اسم الأشعة فوق البنفسجية أما الأطول فتسمى الأشعة تحت الحمراء.

أما الوهج - وهو مرئي- أو الضوء الإضافي يشكل مصدراً آخر للقلق. ويمكن أن يكون كل شيء من مزعج إلى مسبب للعمى. مع فهم الطرق التي يستخدم بها المرضى نظاراتهم الشمسية، يستطيع طبيب العيون تخصيص المواد والألوان والطبقات الكاسية للعدسة بحيث تمنح للنظارة وللمن يرتديها أداء أكثر تميزاً.

الأشعة غير المرئية: الأشعة فوق البنفسجية وآثارها
الأشعة فوق البنفسجية هي أشعة غير مرئية تنقسم إلى ثلاث فئات

UVA, UVB, UVC190 إلى ٢٨٠ نانوميتر والتي تقلت عن طريق طبقة الأوزون. الأشعة فوق البنفسجية A (أشعة الشبخوخة ٢١٥ إلى ٢٨٠ نانوميتر) الأشعة فوق البنفسجية B (الأشعة الحارقة ٢٨٠ إلى ٣١٥ نانوميتر) التي قد تتلف أنسجة الجسم بما فيها العين. آثار الأشعة فوق البنفسجية تراكمية، والتعرض للأشعة فوق البنفسجية



المفرط في مرحلة الطفولة لا يمكن التعويض عنه بارتداء نظارات شمسية في سن الرشد. في الواقع، ما يقارب ٨٠٪ من نسبة الأشعة فوق البنفسجية التي تتعرض لها العين هي نتيجة تراكمية تحدث قبل سن الثامنة عشر، لذلك، كلما استخدمت النظارة الشمسية في سن مبكر كلما قلت المخاطر المحتملة.

من المعروف أن الأشعة فوق البنفسجية من فئة A و B مسببان رئيسيين لسرطان الجلد، وهذه الأشعة هي المادة المسرطنة الوحيدة التي أثبتت سرطنتها في البيئة الطبيعية. الحياة الطويلة وقلة الوعي بهذا الأمر جعل لهذه السرطانات أبعاداً وبائية. تسهم مراكز تسمير البشرة في هذه المشكلة لأنها تقدم مستويات عالية من الأشعة فوق البنفسجية بل وتعزز مفهوم أن الاسمرار جذاب بطبيعته ويعكس صحة الإنسان ويرتبط بالثراء والترف. وكنيجة لشعبية وكثرة مراكز التسمير، لعلنا نشهد الآن ظهور ما كان يعد سابقاً سرطان الشبخوخة متمثلاً بأشخاص أصغر من أن يبلغوا سن الشبخوخة بكثير.

وتشمل مصادر الأشعة فوق البنفسجية التعرض المباشر للشمس والأسطح العاكسة مثل الرمال والماء والتلج. التعرض للأشعة فوق البنفسجية للعين يؤدي إلى زيادة أمراض مثل الإعتام البني عدسة العين، photokeratitis، ناهيك عن سرطان الجفون وما حول العينين. وبالإضافة إلى ذلك، يمكننا أن نرى زيادة في تسارع الشبخوخة بصرية، وضعف رؤية الألوان فضلاً عن غيرها من الأضرار البصرية الدائمة.

تصدر الأشعة فوق الحمراء الحرارة ولكنها مزعجة لذا فإنه ينصح بتجنبها ولذلك يتفق معظم خبراء النظارات على أن بعض التطبيقات التي تحتوي على هذه الأشعة في النظارة تعتبر مجازفة.

الأشعة المرئية : الضوء الأزرق والوهج
الضوء الأزرق المرئي ذو الطاقة القوية (HEV) يطوق القسم البنفسجي من ضوء الطيف المرئي. تشير الأبحاث الى أنه يعتبر عاملاً مساعداً في نشوء الضمور البقعي المرتبط بالشبخوخة (AMD).

الضوء المرئي ذو الطاقة القوية (HEV)، مثل الضوء الأزرق، عندما يتجمع في فترات حياة الإنسان، فإنه مقلق لأن أطوال الموجات الصغرى في الطيف المرئي تحتوي على كمية كبيرة من الطاقة. ويعتبر ضوء HEV قويا لدرجة بحيث يستطيع بها أن يتلف خلايا الإنسان، وخصوصاً عبر إنتاج ذرات خالية من الأوكسجين. وهذا يمنع عملية الأيض (

عمليات البناء والهدم داخل الخلية الحية) في خلايا الشبكية، مسببة تلف أو موت الخلية. إن التعرض المتواصل للضوء الأزرق HEV، كالأشعة فوق بنفسجية، يمكنه أيضاً أن يسبب ضرراً للعين وكذلك المنطقة المحيطة بالعين.

إن الوهج الناتج من الضوء المرئي الشديد يقلل دائماً من الرؤية الواضحة والمريحة. انها تكون ببساطة الانعكاسات المرتدة

النصائح المختصرة المفيدة
ضوء الأشعة الزرقاء ذو الطاقة العالية المرئية

- الطاقة العالية المرئية هو مركب الضوء الأزرق والبنفسجي الصادر من الطيف المرئي.×
- × تشير الأبحاث الى أنها عامل مساعد في الضمور البقعي الشبخوخي.
- × الضمور البقعي الشبخوخي ينتج عنه في البداية الغيبش في مركز الإبصار، ويمكن أن يلي ذلك ظهور البقع العمياء في مركز الإبصار.
- وجهة نظر فنية
- الطاقة العالية المرئية تمتص بواسطة العدسات ذات اللون الرمادي، البني، الأخضر، أو الكهرماني (أصفر محمر).

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من خلف عدسة النظارة الشمسية التي تحجب الرؤية الواضحة في يوم تسطع فيه الشمس بقوة وفي ذلك الوميض الحاجب للبصر المنعكس على الأرضة المبتلة بالندى أثناء القيادة في صباح مشمس. إن الوهج يسبب الحول، بالإضافة الى إعياء العين وضعف في الرؤية. انها مزعجة بشكل عام ويمكن أن تسبب حادثة سير إذا كانت الرؤية محجوبة لديك لرؤية شيء ما في الطريق كان يجب أن تنتبه اليه. تشاور مع عميلك للوصول الى أفضل الطرق التي يجب أن يستخدم فيها النظارة الشمسية. تأكد من الحصول على المنتج الصحيح للتحكم في مسار الوهج.

على سبيل المثال، يحتاج لاعب البيسبول لكي يرى بدقة في بحثه عن الكرة في سماء زرقاء صافية أو ملبدة بالغيوم، والتمزج يجب عليه أن يتبين من الجليد والأقطاب أثناء الحركة بسرعة. وكذلك في صيد السمك بواسطة الذبابة (FLY FISHING)، فإن رؤية الذبابة لحظة لمسها سطح النهر يمكن أن تصنع فارقا بين تناول وجبة سمك أو قطعة من اللحم على العشاء. والسائقون المحترفون، مثل البابا و الماما، يحتاجون الى الرؤية الشاملة بواسطة النظارات الشمسية المناسبة. إن الرؤية بوضوح، بأفضل تباين في الصورة، قد يحسن فرصة رد الفعل في الوقت المناسب. في الحقيقة أن القيادة بسرعة ٦٠ ميلا في الساعة، فحتى ربع الثانية تساوي السير لمسافة ٢٢ ميلا. إنه فرار يمكن للثانية الواحدة أن تصنع فارقا لتجنب حادثة سير.

النظارات الشمسية التي تتحكم في الوهج

خيارات العدسات الواقية العدسات التي تتحكم في الوهج يمكنها أن تقوم بجمع ما يلي :

- توفير الراحة في جميع الأجواء الخارجية
- التخلص من الوهج الحاجب للرؤية
- تمنع تغميض العينين المتزامن مع الألم الذي يحدث في حالات الضوء الساطع
- حماية العين من الآثار الضارة للأشعة فوق البنفسجية و الضوء الأزرق
- تعزيز التباين والألوان

إن تفسير كل ميزة من ميزات العدسات التي تتحكم في الوهج واختيار العناصر المطلوبة يعتبر من واجب الاختصاصي. حدد اللون، مجموعة الخيارات التي تتعلق بدرجة الإمتصاص ودرجة عتمة العدسة بناء على عمر العميل و المناسبات التي

قائمة المصطلحات الصعبة

×النفاذية : نسبة الضوء الذي يعبر من خلال العدسة (نفاذية الضوء المرئي)

×لون العدسة : مظهر اللون، مثل الرمادي، البني، المتدرج، الخ..

×الإمتصاص : الضوء الممتص أو المصفى بواسطة العدسات، تتحدد باللون (A) #١ الأفتح و #٢ (ب) الوسط و#٣ (ج) الأغمق و الأقل نفاذية.

مثال : نظارة ريبان ج١٥ ، ١٥% نفاذية تمتص ٨٥% من الضوء.×

×إمتصاص انتقائي : أطوال مختلفة للموجات (لون) تمتص على مستويات متباينة اعتمادا

على اللون أو المادة الكيميائية للعدسة. وهذا يحسب للعدسات البنية والأخضورية التي تمتص المزيد من الضوء الأزرق وعادة أكثر من العدسات الرمادية. وهنا يجب القول بأن عدستين من اللون البني قد تبدوان متشابهتين لكنهما قد تعملان على التصفية بشكل مختلف

النصائح المختصرة المفيدة للتحكم بالوهج

إنعكاسات السطح الخارجي للعدسة؟

- إنها مزعجة وهي ساطعة بدرجة كبيرة في مواجهة العدسات الشمسية الغامقة.
- يمكن حتى للعين نفسها أن تتعرض لطريقها. ننصح بعدسات شمسية تحمي من الوهج. إنها تمنع الإنعكاسات وتمنع الرؤية الحادة.

لا تحب التغيير المفاجيء في درجة الضوء؟

- إنها مزعجة وتسبب التغميض أو الصداع.
- إذا كنت ملزما بالخروج والدخول في محل ما أو في السيارة، تفصحك بإعتماد العدسات التي يتغير لونها في الشمس. إننا ننصح بعدسات مقاومة للوهج ، فوتوكروميك أو عدسات ذات لون متوسط الدرجة.

ضوء الشمس المباشر، إنه حقا ساطع جدا ؟

- يمكن أن يكون معيقا، إنها "مجموعة من الآلام الواضحة" وتسبب حالات من التغميض بشكل مستمر. إننا نقترح إما البولورايزد، أو الفوتوكروميك، أو العدسات ذات اللون الغامق، وجميع هذه الأنواع يجب أن تكون مقاومة للوهج.

رؤية محجوبة بسبب ومضات الضوء المنعكس ؟

- إنها تسمى الوهج الحاجب للرؤية.
- تحجب الرؤية مؤقتا ويمكن أن تخلق حالة خطيرة. إننا ننصح بعدسات مقاومة للوهج، بولورايزد، إنها أكثر العدسات راحة وهي العدسة الشمسية الوحيدة التي تقصي الوهج الحاجب للرؤية

ينوي فيها العميل استخدام النظارة الشمسية. بادرا دائما بشرح مزايا عدسات البولورايزد – انها العدسات الوحيدة التي يمكنها أن تتخلص بواسطتها من الوهج الحاجب للرؤية. ثم قم بإختيار العدسة المناسبة لتقديم أفضل حماية وأفضل مظهر. من أجل أفضل منع للوهج، أقترح أنا شخصيا عدسات خالية أسطحها الخلفية من الوهج لكافة النظارات الشمسية.

عدسات البولورايزد

فقط عدسات البولورايزد يمكنها أن تقلتر الإنعكاسات القوية للضوء التي تصبح مستقطبة ومكثفة عندما ترد من الأسطح المستوية. إن طبقة رقيقة من البولورايزد المميز مغلفة في داخل العدسة، تمنع بشكل اختياري الموجات الأفقية من الوهج المنعكس. مع النظارات الشمسية العادية تصبح كل وميض حاجب للرؤية من سطح مستو أقل سطوعا لكنها تظل عرضة دائما للنفوذ من خلال العدسة الى العين.

وحيث أن الشاشات المزودة بالكريستال السائل (LCD) على أجهزة الهاتف النقال، وكذلك الأجهزة الحديثة الأخرى، وكذلك شاشات عرض الأمامية في السيارات وعلى ماكانت محطات الوقود تكون هي الأخرى مزودة بطبقة البولورايزد (على درجة ٤٥) ، فإن درجة ١٨٠ من عدسات البولورايزد قد تحجب قسما من الشاشة وهذا طبيعي. تأكد من أن تصصح عميلك وتقترح عليه أن يوميء برأسه أو بهاتفه النقال بدرجة ٤٥ للحصول على رؤية أفضل.

العدسات الملونة

العدسات الملونة تكون قد غمست في الصنع أو تشكلت بطبقة مغلقة بصبغة موحدة. الأصباغ تعرف باللون ودرجة العتمة أو نسبة النفاذية. اطلبها من المعمل بالدرجة المطلوبة من العتمة والكثافة. معظم المعامل تزودك بعينات من الألوان، حتى يتسنى للعميل و الفني و المعمل الإتفاق على لون العدسة ونسبة النفاذية.

عدسات الفوتوكروميك

عدسات الفوتوكروميك يمكنها أن تغير اللون ودرجة العتمة. إنها تبدأ شفاقة وتنتبدل الى شمسية داكنة عندما تتعرض الى الأشعة فوق البنفسجية أو ضوء الشمس ومن أمثلة تلك العدسات :

Transitions Vi و HOYA Sun Tech و Vision-Ease LifeRX (Younger Drivewear و TransitionsXTRActive) . إلخ.. (ومن العدسات الشمسية التي تتبدل من اللون الغامق الى الأغمق) . تأكد من أن تناقش مع عملائك احتياجاتهم من العدسات الشمسية اذا ماكانت الميزة الأساسية في عدسات الفوتوكروميك هي تقديم الراحة فهم في ظل درجة العتمة التي يريدونها. في بعض الحالات (جو حار، أو في داخل السيارة) ، قد لا يتغير اللون الى الأغمق كما يفضل العميل. لذلك، يجب على العميل أن يتعامل مع تعبير الفوتوكروميك على أنها عدسات صالحة لكل الأحوال وأن يفكر بإقتناء عدسات XTRActive البولورايزد الغامقة في النظارات الشمسية.

سواء كانت العدسات من اللون الثابت أو الفوتوكروميك يمكنك أن تطرح الموضوع للجدل فيهما للعديد من الرياضات والأنشطة التي تمارس خارج المنزل. تقهم الخيارات المفضلة لدى عميلك ثم اقترح عليه طبقا لها.

لون العدسة

الرياضات والأنشطة المختلفة يفضل ممارستها بأنواع مختلفة من العدسات الملونة أو البولورايزد، حيث أنها (كيمياة) اللون هي التي تصفي أطوال الموجة للضوء بطرق مختلفة.

وهذا يعني أن كرة لعبة التنس الصفراء أو الأجسام التي تظهر مع خلفية خضراء (الغولف) تتوافق مع عدسات تستطيع أن تؤكد الوضوح.

من أي نوعية يجب أن تكون مادة العدسة ؟

عدسات الشمس لأغراض الرياضة أو التنزه أو شد الحبل المطاطي أو لمجرد الإسترخاء على المسبح. إن النشاط الذي يمارس هو الذي يفرض نوعية العدسة. العدسة السهلة للشمس هي البلاستيك لكن تأكد من أن العدسة تحتوي على الطبقة الواقية من الأشعة فوق البنفسجية، وعلى كل حال، فإن الأنشطة الرياضية والنظارات الشمسية التي ترتدى في محيط المنزل حتى أثناء عمل روتيني تتطلب متانة أفضل للتصدي. اقترح عدسات البوليكربونات و التريفكس كعدسات شاملة الجودة خاصة الطبية منها لأن الى جانب مقاومتها المتينة، فهي عدسات أكثر رقة وأقل وزنا.

العدسات ذات المرآة العاكسة

تضاف طبقة المرآة العاكسة عن طريق عملية تفرغ تطلال فقط السطح الأمامي من العدسة. إنها تعكس الضوء، إنه مفيد في تخفيض مستوى نفاذية الضوء من خلال العدسة، وهو يضيف امتصاصا إضافيا (عتمة) وتوفر الحماية من ضوء الشمس الشديد. إن طبقة المرآة العاكسة مفيد أيضا في إنعكاس وإمتصاص الأشعة فوق البنفسجية والأشعة تحت الحمراء (يعتمد ذلك على المعدن المستخدم في تحديد لون المادة العاكسة). السطح العاكس هو سطح مرآة فعال وأحادي الجانب). والمشهد يرى نفسه على سطح العدسة من الخارج، بينما الشخص المرتدي يرى الأشياء بوضوح على الجانب الآخر.

طبقات عدسات المرآة العاكسة تنتج عادة باللون الفضي التقليدي، أو الذهبي، أو الأزرق، أو بألوان قوس القزح. إنها يمكن تصنع باللون الأصلي للمرأة أو باللون المدرج الأحادي و الثنائي. وتحدد درجة كثافة الإنعكاس إن أمكن تسميتها "FLASH" (أكثر نفاذية وأقل كثافة فاعلة) أو "DIELECTRIC" (لا توجد فيها نفاذية على السطح الأمامي، مع درجة انعكاس عالية).

بينما لا تعتبر الأشعة تحت الحمراء خطرا لمرتدي النظارات

الشمسية.فإن احدى الأمثلة تطبيق على حارس الإنقاذ، الذي يجلس لساعات تحت الشمس على الشاطيء. إن الأشعة تحت الحمراء سوف تنتج حرارة إضافية، خصوصا في المنطقة الداخلية بين العدسة والعين. وكذلك فإن المرأة الذهبية تمتص الأشعة تحت الحمراء حتى تستطيع أن تبقى المنطقة الداخلية بين العدسة والعين باردة.

خلاصة الموضوع

النظارات الشمسية المميزة تثبت للمعلماء جانب" أنا أهتم لأمرك بكل إخلاص". الناس يعشقون اقتناء النظارات الشمسية. إنهم يرون أنفسهم بشكل مختلف بالنظارات الشمسية ويمكنهم أن يرتدوا موديلات أكثر جرأة من موديلات النظارات الطبية. لذلك فإنه من السهل مساعدتهم على الخروج من تحفظاتهم. إنهم يعشقون أن يظهروا بمظهر المشاهير الذين غالبا ما يتم التقاط صورهم وهم يرتدون نظاراتهم المميزة.

إجعل عرض النظارات الشمسية شيئا مهما في المحل. تشير الأبحاث الى أن المستهلكين يميلون أكثر الى شراء النظارة الشمسية من المحل الذي يبدو عليه متخصصا في تجارة النظارات الشمسية. وينصح بأن يشتمل ٢٥ الى ٥٠ بالمئة من البضاعة المعروضة على نظارات شمسية، بينما يمكن أن يكون المعروض في حدود ٣٥ بالمئة أمرا مثاليا. ويمكن أن يتم عرض بعض النظارات الشمسية خارج المحل في صناديق عرض زجاجية تجسيدا لما يعرض في داخل المحل. الجميع يريد نظارة شمسية ذات جودة عالية، سواء كانت شمسية فقط أو طبية شمسية. فإذا أردت أن تبيع نظارة شمسية بنجاح، ابدأ أولا بتلخيص وتيسيط الموضوع، ثم حاول أن تفهم آخر التقنيات المعروضة عن العدسة والإطار، وفي النهاية استمتع وامرح كثيرا. استخدم النبرة الصحيحة لجلب انتباه العميل ولجعله يفهم القيمة الحقيقية للنظارة الطبية الشمسية لتصبح النظارة الأخرى بنفس أهمية الأولى.

المصدر ٢٠/٢٠

ترجمة وتحرير آيزون

النشاط / لون العدسة

البيسبول

- الرمادي أو البني
- البولورايزد

ركوب الدراجات

- الرمادي أو البني
- الفوتوكروميك
- بعض أنواع الأخضر
- الأحمر للإهتزاز وتميز التباين

قيادة السيارة

- الرمادي أو البني
- البولورايزد

صيد السمك

- البني، الأحمواني، الرمادي

الجولف

- الأخضر والبني

قيادة الدراجات النارية

- معظم الألوان البنية
- بعض الألوان الرمادية والخضراء
- الفوتوكروميك
- البولورايزد

التزلج

- البرتقالي، الأصفر، البني
- البولورايزد

السباحة

- الشفافة، الأزرق الفاتح، الأصفر الفاتح

كرة التنس

- البرتقالي، الأصفر، البني، والشفافة
- البولورايزد

Sunwear, the Other First Pair ... (Continued)

GLARE CONTROL SUNWEAR

Protective Lens Options

Glare control lenses can do all of the following:

- Provide comfort in any outdoor light
- Eliminate blinding glare
- Prevent squinting as well as the pain experienced by some in very bright light
- Protect the eye from the harmful effects of UV and blue light
- Enhance contrast and colors

Describing each of the benefits of glare control lenses and choosing the right combinations is the optician's job. Determine the color, selective absorption and darkness of the lens based on the age of the patient and the conditions in which they will wear their sunglasses. Always describe the benefits of polarized—they are the only lenses that can eliminate blinding glare. Then choose the right lens material to deliver the best protection and looks. To best eliminate glare, I always recommend a no glare back lens surface on all sunwear.

Polarized Lenses

Only polarized lenses filter the intense reflections of light that become polarized and intensified when bouncing off flat surfaces. A specially oriented polarizing film, encapsulated within the lens, selectively blocks the horizontal waves of reflected glare. With ordinary sunglasses, any blinding flash from reflected surfaces would be reduced in brightness but still transmitted through the lens and into the eye.

Since the liquid crystal screens (LCD) on cell phones, PDAs, car dashboards and gas pumps are also polarized (at 45 degrees), the 180 degree orientation of polarized lenses may block some of the screen—that's normal. Be sure to advise patients and suggest tilting their head or the cell phone 45 degrees for

GLOSSARY

- **Transmission**—the percent of light that passes through a lens (Visible Light Transmission 'VLT').
- **Lens Color**—the appearance of color, i.e., gray, brown, gradient, etc.
- **Absorption**—light absorbed or filtered by lenses, identified as #1 tint (A) lightest, #2 (B) medium and #3 (C) darkest, least transmission.
- **Example:** Ray-Ban G-15, 15% transmission absorbs 85% of light.
- **Selective Absorption**—different wavelengths (color) are absorbed at varying levels depending on tint or lens material chemistry. This accounts for brown and amber lenses absorbing more blue light typically than gray lenses. Two brown lenses that look very similar may actually filter differently.

SOUND BYTES FOR GLARE CONTROL

Back surface reflections?

- They're annoying and are very bright against the dark sun lens.
- Even reflections of your own eye can get in the way.

We recommend no glare sun lenses, they eliminate reflections and improve sharpness.

Don't like sudden changes in brightness?

- It's annoying and causes squinting or a hand up or head turn.
- If you are in and out of a store or car, consider lenses that change tint.

We recommend no glare, photochromic lenses or a medium tint lens.

Direct sunlight, that is just too bright?

- Can be disabling, "just plain hurts" and causes continual squinting.

We recommend either polarized, photochromic or dark tints, all no glare.

Blinded by intense flashes of reflected light?

- Called blinding glare
- Temporarily blocks vision and can create a dangerous situation.

We recommend no glare, polarized lenses, the most comfortable and only sun lenses that eliminate blinding glare.

greater visibility.

Tinted Lenses

Tinted lenses are dip-dyed or molded with an encapsulated film of uniform color. Like polarized lenses, tints are identified by color and darkness or percent transmission. Order them from your lab at the darkness or density required. Most labs supply tint sample sets so patient, optician and lab can all agree on lens color and transmission.

Photochromic Lenses

Photochromic lenses change tint and darkness. They start clear and turn sun lenses dark in the presence of UV radiation, sunlight (i.e. Transitions VI, Vision-Ease LifeRX, HOYA SunTech, etc.) and sun lens versions, somewhat dark to darker (Transitions XTRActive, Younger Drivewear). Be sure to discuss with patients their sun needs since the major advantage of photochromics is their convenience—they are as dark or light as needed. In some conditions (hot weather, inside the car), they may not get as dark as the patient prefers. Therefore, the patient should think about their photochromics as general purpose and consider polarized, dark tinted or XTRActive sunwear for sunglasses. Fixed tint or photochromics can be argued both ways for many sports and outdoor activities—understand your patient's preferences and recommend accordingly.

Lens Color

Different sports and outdoor tasks are best with different tints or polarized lens colors, since it is the color (chemistry) that filters wavelengths of light differently. This means that a yellow tennis ball or objects against a green background (golf) benefit with lenses that can accentuate visibility.

Which Lens Material?

Sun lenses—think sports, outdoors, bungee jumping or just lazing by the pool. The activity suggests the lens material. Easy sunning—plastic—though be sure that the lens is UV protective. However, sports activities and sunwear worn around the house even to do chores also requires better impact strength. Recommend polycarbonate and Trivex as good general purpose

materials especially in Rx because aside from its excellent impact resistance, it creates thinner and lighter lenses.

Mirrored Lenses

Mirrors are applied in a vacuum process to the front surface of a lens only. It reflects light, is beneficial in reducing the light transmission through the lens, adds additional absorption (darkness) and offers protection from intense sunlight. Mirror coatings are also beneficial in reflecting or absorbing both UV and IR (depending on the metal used to make the colored mirror). The mirrored surface is effectively a one-way mirror. An observer can see him or herself in reflection, but the wearer can see clearly through the lens from the back.

Reflex mirror coatings are produced in standard colors of silver, gold, blue and rainbow colors. They can be done in solid mirrors, single or double gradients. The intensity of the reflection determines whether the mirror is called "flash" (more transparency, less reflective intensity) or "dielectric" (no front surface transparency, high reflectivity).

While infrared (IR) is not considered hazardous for the sunglass wearer, one example to consider is the life-guard, sitting for hours in the heat at the beach. The IR will produce extra heat, especially behind a wrap sun lens. A gold mirror absorbs IR so the lens space behind the lens will be kept cooler.

Putting It All together

Great sunwear lets you show patients your "Truly I Care" side.

People love wearing sunglasses and trying them on. They see themselves differently in sunwear and will wear more daring styles than they would for clear eye-wear. So it's easy to help them push their own limits. They love to look like the celebrities so often photographed with their great shades.

Make sunwear a big part of the practice. Research shows that consumers are more likely to purchase sunwear if it appears the practice is in the sunwear business. It is recommended that 25 to 50 percent of your inventory be sunwear, with about 35 percent being ideal. Sunwear can easily be incorporated with a variety of displays in areas outside the dispensary.

Everyone needs quality sunwear, either plano or prescription. In order to successfully sell sunwear, first condense and simplify the message, then understand the latest in lens and frame technology, and finally have lots and lots of fun. Present "sound bytes" to get the patient's attention and enable them to understand the true value of Rx sunwear—that other first pair.

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ACTIVITY/ LENS COLOR

- BASEBALL**
 - Gray or Green
 - Polarized
- CYCLING**
 - Gray or Brown Photochromics
 - Some Greens
 - Most Browns
 - Red for vibrant and enhanced contrast
- DRIVING**
 - Gray or Brown
 - Polarized
- FISHING**
 - Brown, Amber, Gray
- GOLF**
 - Green and Brown
- MOTORCYCLING**
 - Most Browns
 - Some Grays and Green
 - Photochromics
 - Polarized
- SKIING**
 - Orange, Yellow, Brown
 - Polarized
- SWIMMING**
 - Clear, Light Blue, Light Yellow
- TENNIS**
 - Orange, Yellow, Brown and Clear
 - Polarized

Sunwear, the Other First Pair

By Mark Mattison-Shupnick, ABOM

Sun Protection is Your Responsibility

More consumers than ever before are active outdoors, making sunwear just as important as indoor eyewear. And if they work outdoors, sun protection can be even more important.

I work a few days each month for an independent optician. I feel that I have done patients a disservice when they leave without being aware of the importance of UV protection and the availability of prescription sunwear.

Considering what is known about the sun's potential damage to skin and eyes, and because we're living much longer, it's every optician's responsibility to introduce information to every patient about the risks of not protecting their eyes with quality sunwear. That information should include:

- A discussion of who needs quality sunwear
- Potential damage caused by UV and blue light radiation
- Lifestyle cues for choosing the best types of sunwear
- How the optician should position sunwear in the office



Figure 1

In general, consumers know little about the sun's effects on their eyes and equally less about quality sunwear. Three things are required on your part.

First condense your conversation into simple phrases, sound bytes that give patients reasons to want to own the sunwear you recommend. To do this you must understand the technical background that allows you to talk with confidence. In this way, sunwear becomes a valuable eyewear asset and just as important, their "other first pair."

Second, show your knowledge of some of the technical aspects of quality sunwear.

Third, present the benefits and value of purchasing quality frames and lenses.

The Sunwear Discussion

Since most patients have contact with front office staff

and technicians before seeing the doctor, they should mention the necessity of good quality sunwear while taking a patient's history and during early contact. Both the ophthalmologist and the optometrist should include discussing the need for good quality sunwear while the patient is in the chair.

Then the optician should discuss good quality sunwear with every patient. During their lifestyle consultation with the patient, identify the times not only when a patient would benefit by having sunwear, but the fact that it may even be more important than their indoor pair. It's really the responsibility of everybody who works in the practice and interacts with the patient to discuss good quality sunwear.

Talk to parents about the importance of sunwear for children. The average child receives three times the annual UV exposure of an adult mainly because the bulk of lifetime UV radiation exposure occurs prior to age 18; and because the clear lens of the young child transmits 7.5 times the amount of potentially harmful UV radiation as does the yellowing lens of an adult (75 percent transmission at age 10, 10 percent at age 30). Damage caused by exposure to UV radiation is cumulative and therefore protection needs to begin as early as possible.

For these reasons, ECP's should not limit their discussion of sunwear to just adults, but should include all ages including children.

Lifestyle Questioning

Lifestyle questioning uses direct and open-ended questions to find out the lifestyles of your patients. It allows a personalization of benefits that resonates with patients.

Example 1: "Mr. Jones, please discuss your outdoor activities with me, so that I may guide your choices." A statement such as this, followed by a question will get your patient thinking.

"Mr. Smith, you stated that you drive for a living. Did you know that blinding glare is responsible for a very high percentage of traffic accidents? Let me explain how quality polarized no-glare prescription sunwear could actually make you safer while you drive."

Example 2: "Ms. Jones, you mentioned you do a lot of boating. Let me demonstrate to you how good quality, polarized lenses can make you more comfortable on your boat. You can also get prescription lenses in these great designer brand frames, just like celebrities."

Knowing the Facts: Radiation, Exposure and Protecting the Eyes

Three Concerns: UV, Blue Light and Glare

The eye is exposed to the sun's radiation, both invisible and visible. Called the Electromagnetic Spectrum, the visible portion provides color, blacks, whites and grays. Invisible ra-

INTRODUCTORY SOUND BYTES DID YOU KNOW...

- Sunwear is just as important as your indoor eyewear?
- Real sunwear is available in prescription?
- There are risks in not protecting your eyes with quality sunwear?

THE DISCUSSION

Talk to:

- Prescription eyeglass, contact lens wearers
- Refractive surgery patients
- People on certain medications, have emerging cataracts, have had cataract surgery
- Anyone who spends time outdoors in the sun
- People who want to look "cool"
- Parents about their kids, toddlers

Sound Bytes

Please try these sunglasses

- These real sunglasses can be made with your Rx.

Ask

- How much time do you spend outdoors?
- Do you drive for work?
- How are you protecting yourself from sunlight and ultra-violet light?
- Does glare bother you?
- Do you have problems with dry eyes?
- Are you active in any sport with specific visual requirements?
- What sunwear do you currently wear?

diation borders the visible. The shorter wavelengths are called ultra-violet (UV), the longer called Infrared (IR).

Glare (visible) or the excess of light is another concern. It can be everything from annoying to blinding. With an understanding of the ways that patients will wear their sunwear, an optician can personalize the lens materials, colors and coatings so that both the wearer and eyewear perform spectacularly.

Invisible: Ultraviolet Radiation and its Effects

Ultraviolet Radiation is invisible. It is divided into three categories—UVA, UVB and UVC. UVC, 190 to 280 nanometers (nm), is filtered by the earth's ozone layer. UVA (aging rays, 315 to 380nm) and UVB (burning rays,

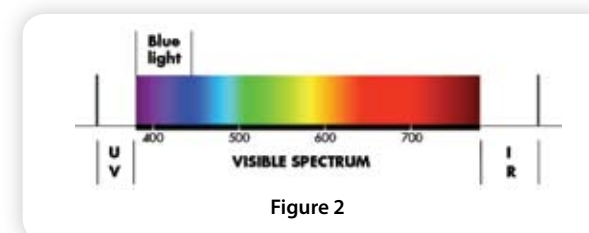


Figure 2

280 to 315nm) can cause damage to the tissues of the body including the eye. The effects of UV are cumulative. Excessive exposure as a child can't be undone as an adult wearing sunwear. In fact, it is estimated that 80 percent of the eyes' UV is accumulated by the age of 18. The sooner the right sunwear is worn, the better.

Both UVA and UVB are known causative agents for skin cancers, i.e., basal, squamous and melanoma cancer. UV is the only proven carcinogen found in the natural environment. Given long life and a lack of understanding, these cancers have reached epidemic proportions. Tanning salons contribute to the problem since they deliver not only high levels of UVA, but also reinforce the notions that a tan is inherently appealing, suggests health and is associated with wealth, privilege and mobility. As a result of the popularity and use of tanning parlors, we may be now seeing the appearance of what were formerly old age cancers in a much younger population.

Sources of UV include direct exposure from the sun and reflective surfaces like water, sand and snow. UV exposure to the eye leads to increased risks of sunshine or brown cataracts, pingueculae, increased pterygium, and photokeratitis, not to mention lid and skin cancers around the eyes. In addition, we can see an increase in accelerated ocular aging, weakened color vision as well as other permanent visual damage.

Infrared (IR) radiation produces heat but when present is uncomfortable, so it is typically avoided. Therefore, most eyewear experts agree, there are few applications where IR is considered a hazard in eyewear.

Visible: Blue Light and Glare

High-Energy Visible Blue Light (HEV) encompasses the blue and violet portion of the visible light spectrum. Research has shown that it is a contributing factor to age-related macular degeneration (AMD).

High Energy Visible (HEV) light, i.e., blue light, when accumulated over a lifetime, is of concern because the shortest wavelengths of the visible spectrum contain significant energy. HEV light is powerful enough to injure human cells, mainly through the production of oxygen free radicals. This prevents the normal metabolism of the retinal cells, causing damage or cell death. Extended exposure to HEV blue light, like UV radiation, can also cause damage to the eye and the skin around the eye.

Glare from too much visible light always reduces clear and comfortable vision. It can be as simple as the reflections off the back of a sun lens that interrupt clear vision; to a super bright sunny day, to that blinding reflective flash off the dewy wet pavement while driving on a sunny morning. Glare causes squinting, eye fatigue and reduced vision. It is generally annoying and can become the cause of a car accident if you're blinded to something in the road that you should be able to see. Probe the patient for the real ways they will use sunwear. Be sure to get glare control right.

For example, a baseball player needs to see accurately when searching for the ball against a blue or overcast sky; a skier must pick out the ice and moguls at speed; and when fly fishing, seeing how the fly just touches the surface of the river may be the difference between fish or steak for dinner. Professional drivers, like mom and dad, need all the visibility they can get with the right pair of sunglasses. Seeing clearly, with the best contrast, can sharpen reaction time. In fact at 60 mph, even a quarter of a second equals 22 feet. A decision that is even a second faster can make the difference and avoid an accident.

SOUND BYTES—BLUE LIGHT RADIATION

Blue Light - High Energy Visible (HEV)

- HEV is composed of the blue and violet portion of the visible spectrum.
- Research suggests that it is a contributing factor to age related macular degeneration (AMD).
- AMD results initially in central vision blur, later may cause a central vision blind spot.

Dispensing Point

HEV absorbing lenses in gray, brown, green and amber are recommended.

Marco Mengoni

Lozza
Originale dal 1878.



Back
from
the 70's


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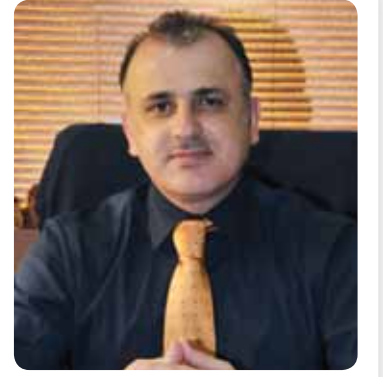
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أخبار

أوبتيكال سبلايز تتجه نحو تحقيق أرقام قياسية في مبيعات العدسات الملونة في 2011

واقترحات العملاء يوحى له بالكثير حيث أصبح يضع تصاميم وألوان العدسات بنفسه مع عدم التهاون مع المسألة الأهم وهي الجودة التي تؤمن الراحة للعين طوال الوقت. هذا وتمتلك الشركة شبكة واسعة من الموزعين في مدن عديدة في المنطقة وهي تعمل ضمن منظومة تسويقية تتكفل بها الشركة من خلال التعاقد مع مجموعة من المشاهير أمثال المذيعة حصة اللوغانى والفنانة غادة عبد الرازق. ومن ضمن الأسواق الواعدة الجديدة التي تنوي الشركة الدخول فيها بشكل جدي هي سوق المملكة المغربية حيث يتم التباحث حالياً لافتتاح مكتب هناك في القريب العاجل.

يعتبر السيد ابراهيم وهبي - المدير العام لشركة أوبتيكال سبلايز أن الشركة أصبحت تحقق تطوراً ملموساً في مبيعات العدسات اللاصقة الملونة في الشرق الأوسط، ويرجع السيد وهبي السبب إلى تميز عدسات بيللا بالجودة بالإضافة إلى التجديد الدائم في الألوان التي يتم طرحها بطريقة مبتكرة. ويضيف أن التواصل مع رغبات



السيد إبراهيم وهبي
مدير عام شركة أوبتيكال سبلايز

رؤية واضحة لصناعة النظارات الفرنسية بدبي

دائماً ما تكون الألوان مليئة بالحيوية ومنعشة لدى OXIBIS ومنتجاتها ذات رسومات أصلية لدى Banana Moon، ألوان صارخة أو رصينة، قوية أو راقية... وكثيراً ما تبدو النظارات الشمسية رياضية ونشطة تطلق العنان للإبداع: Parasite Noego بطرازها PARASITE DESIGN، وألوان تبرز الجمال والرقي لدى Enrico Cecchi بطرازها VISIOPTIS بالإضافة إلى Zilli.

سيستنى لكافة الشخصيات التعبير عن أنفسهم عبر الطرز الرصينة وعالية الذوق لدى Tanneur، أو الهادئة والمتقدمة والمتوازنة لدى Cogan Power Design أو ستجد نفسها ترتدي أشهر العلامات التجارية الخاصة بـ GROSFILLEY LUNETTES التي تصنع علامات تجارية شهيرة مثل Azzaro وKKS وCharriol وThierry Mugler أو Smalto وكذلك علامتها التجارية الخاصة بها X-one.

إذا كانت صناعة النظارات الفرنسية ستشهد تواجداً قوياً بمعرض فيجن إكس، فلن تكون الوحيدة التي تمثل هذا القطاع. فسوف تعرض ESSILOR INTERNATIONAL، الرائدة العالمية في مجال عدسات العيون، نتائج أحدث أبحاثها، كما ستقدم OFTAL مجموعتها الخاصة بمعدات المتخصصين في مجال النظارات التي تتسم بالجودة الفائقة والأسعار المناسبة للغاية.

كذلك سوف توجه سيلمو، خلال فعاليات معرض فيجن إكس، الدعوة لكافة المهنيين بهذا القطاع لحضور معرضها الدولي للبصريات والذي سيعقد بباريس في الفترة من 29 سبتمبر وحتى 2 أكتوبر القادمين.

سيعرض متخصصو البصريات الفرنسيون منتجاتهم بالقاعة أ بمعرض فيجن إكس. للمزيد من المعلومات: www.ubifrance.fr

ستستعرض ستة عشر شركة فرنسية إبداعاتها بمعرض فيجن إكس بدبي الذي سيعقد في الفترة من 24 وحتى 26 مايو المقبل. ولقد قامت يوبيفرانس بجمع هذه الشركات في الجناح الوطني حيث ستصحبها جمعية "نظارات فرنسا" التي تجمع وتطور هذا القطاع بأكمله.

لقد تمكنت صناعة البصريات الفرنسية من الاستفادة من خبرتها التي تعد ثمرة تقليد يتم إتباعه منذ زمن طويل، ومن التنوع وكذا من تلبية المتطلبات الحالية للمستهلكين التي جعلت من النظارات أحد أدوات الأزياء مما يستلزم أداءً تقنياً أكثر تعقيداً وتقدماً.

هذا ويعتبر كل من MOREL France وOPHL LAFONT وFIDELA مثلاً معبراً عن مختلف الأجيال التي توارثت أفضل خبراتها ثم أثرت عن طريق إضافة تقنيات عالية الأداء مع الاحترام الدائم للأصالة والجودة.

ويكمن الابتكار خصيصاً في الخامات التي تناسب كافة الأشكال الممكنة: أسيتات السيليلوز بالنسبة إلى ELCÉ والتيتانيوم والبيتا تيتانيوم والكربون والبلاستيك والXP2 والجلد والخشب..... إلخ، وفي الارتقاء بالأحجام أو بتفاصيل طرز Exalto والأشكال الهندسية لخطوط Xenith أو خطوط Ted Lapidus الخاصة بـ LOOK VISION، والتقنية المتقدمة لمفصلات الأذرع الخاصة بـ Enrico Cecchi أو بـ OXIBIS، أو الأذرع المتغيرة الخاصة بـ Dilem. إن الراحة هي السمة الدائمة، وقد تبرز أحياناً كطابع مهيمن لدى MININA التي تقدم طرز خفيفة للغاية تتواءم تماماً مع هيئة كل من يلبسها.



5th Annual eyewear convention gathers Gulf Trading Eyewear Division and Menrad Group together



Group photo souvenir

Saudi Arabia's key Optical shops' owners and Purchase Managers joined Gulf Trading Corp Ltd. in Beirut at its fifth "Annual Eyewear Convention" that took place at Ramada Hotel -Down Town. The event a great success. About 30 guests representing the best optical shops in KSA were present: Al Salman Optical, Al Mira Optical, Optic Center, Al Sahel Optical, Mougla optics, Zaina optics, Bent Goude optics, Consulting Clinics, Oyouni Lak optics, Dina Optics, Golden Palace optics, Crazy optical and others.

Menrad Group was represented by its Middle East Manager, Mr. Jules Tabet. As for Rudy Project, it was represented by the Export Manager Mr. Claudio Fatim. Gulf Trading Eyewear Division Manager, Mr. Pierre Nahas and his sales team were there to receive guests.

It was a great opportunity to launch Rudy Project's Optical line. Mr. Claudio Fatim had a very interesting presen-

tation elaborating how Rudy Project is succeeding in integrating its optical line in the sport sunglasses business. Moreover, the guests had the chance to discover the latest collection of Menrad's famous eyewear brands Jaguar, Davidoff, Zeiss, and Menrad. Mr. Jules Tabet offered a new concept in the optical line the "Zeiss box". The show box contains 16 optical frames with 6,500 combinations -make your own frame- best comfort with the best suitable design. As for Mr. Pierre Nahas, his presentation elaborated the challenges that the retail business is facing in Saudi Arabia and how GTCL will play an effective

role with its partners in facing those confrontations.

The guests had the chance to enjoy the beautiful scenery of Lebanon's snow covered mountains. They had an exciting Gala dinner at Sharayar Restaurant. The group spent four unforgettable days: a combination of business and fun. Partners, suppliers, customers and distributors had a great chance to socialize and discuss very important business issues.



Mr. Pierre Nahas presenting

Huvitz participates in Vision-X Dubai 2011

In line with its newly launched products, Huvitz is participating in the much-awaited optical exhibition in the Middle East, the Vision-X Dubai 2011. Happening from May 24 to May 26, Huvitz will present the products and vision alongside its authorized distributor in UAE, CBC medical.

During Vision-X Dubai 2011, the company will be introducing to the Middle East market its new products such as HRK-8000A (Wavefront based auto ref-keratometer) and HT-5000 (Digital applanation tonometer). According to Mr. Oh, Huvitz Overseas Sales Manager, "The newly-launched HRK-8000A could be a new wave of auto ref-keratometer market because it contains very new features which could not see in previous model or any other competitors."

Also, ahead of Vision-X, Huvitz already participated in other global exhibitions in Milan (MIDO), Shanghai (SIOF),

and Tokyo (WOF). In MIDO, Huvitz showed HRK-8000A, and HT-5000 as new launched products in Europe market. In SIOF, Huvitz also parted in great position in the center of the show with the distributor, Haitong Company. In WOF, Huvitz took the opportunity to present to Japan market that is actually famous of its number of domestic player and quality reputation. Huvitz is the only foreign optical manufacturer in the show. It means that Huvitz quality is regarded as good as other Japanese player. Right now, Huvitz gets its sharing larger and larger in Japan market, too.

From taking part in these events, many suggestion knocks Huvitz for Wavefront Technology and RGP Lens Fitting Function of HRK-800A. After launching HRK-8000A, Huvitz got so many suggestions from relative business such as Eyeglass Lens Manufacturer, RGP contact lens supplier or even Chain optical shops. Because of its unique function, it can be so easily adopted to this technical market.



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mido 2011 Exhibition



Signs of a recovery in the entire industry confirmed at the international event.

Huge success for the revamped exhibition layout

Milan, 7 March 2011 – The 41st Mido – International Optics, Optometry and Ophthalmology Exhibition – closed yesterday. Its role as the leading international exhibition for the eyewear industry was confirmed: 6 exhibition pavilions, more than 1,100 exhibitors, all the largest companies from across the globe attending, new small producers and, for the first time prominent players from the modern trade sector as well. Attendance figures were very good: +7% for Italian visitors and basically stable for visitors from overseas.

«An extremely good result for an exhibition whose leading role on the world scene has been confirmed», stated Cirillo Marcolin, Executive Vice President. It was the revamped exhibition layout – divided into theme areas – that was the most successful. «The Mido Fashion District was extremely popular and turned out to be the real big news this year», commented Marcolin at the end of the exhibition. An exclusive space where the most glamorous eyewear companies showcased their finest brands and product ranges «It was by all means the most popular area for companies and visitors. This goes to show how the leading names in the sector can work in synergy, despite any natural competition».

All the exhibition areas had a great appeal. As always the more creative visitors had a penchant for the Mido Design Lab (Pav. 24), now a regular fixture and hosting the most avant-garde companies in terms of testing. The other exhibition and educational areas such as the Health&Innovation Forum (Pav. 22) also had a wide appeal.

«The expectations were good and I am happy to say that the event lived up to these expectations. I hope that this result represents a turning point for entire industry worldwide » Marcolin continued.

Another strength was this year's focus on communications targeted at the foreign media, given the exhibition's strong international reach. Among the other things, a meeting with foreign journalists only was organized in collaboration with the Foreign Press Association in Italy at its Milan premises. Videos were prepared for all the TV stations and interviews were held with businessmen from the industry and are now available on www.mido.it

This result can be attributed to changes underway in the economies around the world which are showing some signs of a rebound, but also – and most importantly - to the spirit that has always driven the exhibition organizers. «We have worked very hard and our efforts have been rewarded. Our strength lies in the fact that we are never satisfied and are always enthusiastically focused on the future, in our attempt to fine-tune the exhibition tool, by making it more in sync with the business needs of individual companies. We have many other new ideas in store and are already working on next year », Vice President Marcolin ended.



CHAROPS



Vision-X 2011 to present leading ophthalmic technology



Vision-X Dubai, the Middle East and Africa's most important optical and ophthalmic event is gearing up to welcome more than 3,800 top industry professionals from more than 63 countries and 120 leading companies from five continents.

Technical Limits Overcome

In a region where the emphasis on optical health is becoming more and more prevalent, issues surrounding vision deterioration and correction will play a large part in the event. Running throughout the show, seminars and workshops will highlight the region's most important industry challenges and opportunities.

The 6th Vision-X Dubai Conference, co-organized by Dubai World Trade Centre and the Emirates Medical Association Ophthalmic Society (EMAOS), will be held on 24 May 2011. The conference will host prominent international figures in ophthalmology who will concentrate on topics such as advances in cornea refractive surgery.

Amico Corporation, leading suppliers in many fields of optical medicine, will also showcase the most contemporary surgical and diagnostic equipment used in ophthalmology, and present an expert series of free-to-attend seminars taking place on 25 May.

"Eye care is an increasingly important element in this region, both from a medical point of view with the prevalence of diseases such as diabetes, and from a protection perspective against harsh climatic conditions," said Trixee Loh, Senior Vice President, Dubai World Trade Centre, organizer of Vision-X Dubai, organizer of the event, which runs from 24 – 26 May, 2011 at the Dubai International Convention and Exhibition Centre. "Vision-X Dubai is the most influential platform for both ends of the optical spectrum to showcase developments, products and services for the MENA markets,"

An exclusive area for eyecare, 'Vision Opticare', will host 42 exhibitors dedicated to the fields of medical and technical equipment and machinery. The very latest technology includes A-Scan, Auto-Refractometers, Corneal Analysis, Cryo, Diathermy, Examination Units, Nerve Fiber Analysis Equipment, Phaco, Slit Lamps Topography, Specular Microscope, Vitroretinal Simulator, YAG Laser and much more.

As Vision-X Dubai continues to expand its geographical

reach, country pavilions at this year's event will include a host of first time exhibitors: from Germany, Carl Zeiss Vision, Nigura Metzler, Satisloh and Wagner & Kuehner; from France Essilor International, Grosfilley, Look Vision Lunettes and Parasite Design; pavilions for Italy and Hong Kong have also been expanded to showcase the latest in luxury eyewear.

Colin D'Cruz, Chief Operating Officer, Charmant Gulf, said: "The international attendance makes this an excellent prospect for eye-care professionals and those who work in related fields to either explore the region for the first time or look at expanding their business. As one of the major exhibitors at Vision-X, Charmant Group has been renowned worldwide in the optical market for its pioneering work in research and development of new technologies. Vision X is a great opportunity for us to showcase our innovation and demonstrate exactly why we are a leading company in this optical industry."

'Vision Lifestyle', will once more place host to over 100 exhibitors in the field of fashion eye wear, showcasing the latest Contact lenses, Frames, Licensed brands, Shop Equipment & Furniture and Sunglasses.

As part of the Vision-X Dubai Lifestyle program, the 'Fashion Catwalk' will feature the latest trends from the most popular brands, including ESPRIT, Maui Jim, Porsche Design, PUMA and TruTrussardi. The shows take place daily at 12pm and 4pm. Egma Lens, will also present hourly seminars on individual spectacle lenses throughout the show.

Industry leaders that have confirmed their participation at Vision-X Dubai include Platinum Sponsor Egma Lens, Bakarar Optical, Future Optics, Johnson & Johnson, Lomic, Atlas Medical, CBC Medical, Maui Jim Middle East and Oscar Optics.

Vision-X Dubai will be held in Sheikh Saeed Halls 2 & 3 at Dubai International Convention and Exhibition Centre from 24 – 26 May 2011. Timings are from 10am – 7pm daily. Vision-X Dubai is strictly a trade-only event and is not open to members of the public. Vision-X Dubai Conference delegate prices: AED 200 for EMAOS Members; AED 300 for non-members.

Registration is available in advance online at www.vision-x.ae. Pre-registered visitors will be automatically entered in a raffle draw with spectacular prizes: SEA WING presents a thrilling 40 minute "dock to dock" aerial experience focusing on the the Burj Khalifa and the Burj Al Arab. Win

up to 4 tickets valued at AED 1,249 each. The draw will take place on the last day of the show at 4pm.



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MAUI JIM at Vision - X



Maui Jim, the fastest growing premium polarized sunglass maker in the world will be showcasing a very impressive presence at this year's Vision - X exhibition held in Dubai from May 24th-26th.

Maui Jim's activities at Vision-X include the display of the new launched Maui Gradient and other different ranges and styles of Maui Jim sunglasses, a Hawaiian cocktail evening to commemorate partnerships with esteemed associates and the press which will include performances by the specially flown in Polynesian dance troupe and other displays of the 'Aloha Spirit' that encompass Maui Jim's philosophy. So far, 2011 has promised to be

an exciting year for Maui Jim, starting with the newly appointed Sales Director Ms. Martine Larroque taking the helm with focus on expanding presence and commitment for the Middle East region.

Increased sales force, spend, presence at Vision-X and special training sessions for partner opticians, store management and sales staff are few of the other indicators of Maui Jim's faith in the region and its future potential.

Maui Jim will be presenting the new products which Martine Larroque describes as: "Single Gradient Polarized lenses, named "Maui Gradient". We will be presenting the first models featuring this lens. Also we will show the first styles for our new flagship line Maui Flex, memory metal frames." As to colours, no exceptions or preferences, as these are left to the end consumer.

"Maui Jim is about showing you the world in all its splendour. With all colours, not leaving any of them out, just in case it is your favourite".



Maui Jim goes single

Company launches first line of styles for single gradient lenses

Maui Jim, the fastest growing premium polarized sunglass maker in the world and leader in the development of polarized sunglasses, has always been known as the leader in double gradient lenses. These lenses are dark at the top, light in the middle and dark at the bottom. But this season, Maui Jim is going single—single gradient, that is, with the launch of its newest collection of sunglasses featuring proprietary MauiGradient lenses.

MauiGradient features a darker coating at the top that gradually gets lighter moving down the lens. So an appropriate amount of light is allowed to filter through certain areas, while less in places where protection is paramount.

"Our market research shows that some people find their eyes prefer a single gradient lens," said Linda Gassel, Vice President of Marketing for Maui Jim. "Adding a single gradient lens to our portfolio made sense because our goal is to enhance how our customers see the world around them."

All single gradient lenses are precision engineered using the company's SuperThin lenses that are super lightweight, scratch- and impact-resistant, and 20% thinner than conventional laminated polarized lenses. Each lens uses the company's patented PolarizedPlus² technology to cut glare and enhance color. The ultraviolet ray reduction is superior because each lens has up to 9 layers of built-in protection.

Maui Jim's new single gradient lenses can be found in a range of frames, from fashion-forward to retro-aviators, crafted from lightweight, highly durable acetate or titanium with anti-corrosive hardware.

Selected options in the Pau Hana, Lani and Lava Flow frame styles feature the company's trendiest, colorful designs, some with one color on the exterior of the frame, and another on the interior:

- Pau Hana is a unisex frame for smaller faces that comes in black with dark brown interior and neutral grey lenses; Tokyo tortoise with Maui Rose lenses; honey with HCL[®] bronze lenses; or dark tortoise with green interior and Maui HT lenses.
- Lani, for women, is an oversized squared-off duo-tone acetate frame available in gloss black, Koa tortoise or amethyst fade with neutral grey lenses; Tokyo tortoise with Maui Rose lenses; or ruby with sandstone interior and HCL Bronze lenses.
- Lava Flow delivers a fashionable statement in gloss black with neutral grey lenses, or a colorful burgundy



tortoise frame with HCL Bronze lenses. The modified rectangular frame with a mid-size wrap complements most facial shapes.

The hottest new aviators on the market include Baby Beach and Wiki Wiki in pure titanium:

- Baby Beach, designed for smaller faces, is available in silver with neutral grey lenses; gold with HCL[®] Bronze lens; or gloss black with Maui HT lenses.
- Wiki Wiki is a double nose-bridged, square aviator available in gloss black with Maui HT lenses; gold with HCL Bronze lenses; or silver with neutral grey lenses.

About Maui Jim, Inc.

Maui Jim began as one man selling sunglasses on the beaches of Maui, Hawaii, back in the early 1980s. As local demand grew for sunglasses that provided advanced protection from the severe glare and UV rays of the Hawaiian sun – without distorting the beautiful colors of the Islands – the company developed proprietary technology – PolarizedPlus², which was later patented and subsequently enhanced to create the company's newest technology, PolarizedPlus².

Maui Jim was "born" with an original line of seven sunglasses styles. At first, the sunglasses were exclusively sold in Maui, Hawaii. In 1991, the company was purchased by Hester Enterprises, and in 1994, Hester enlisted RLI Vision Corporation of Peoria, Illinois, to be the mainland distributor of Maui Jim Sunglasses for the ophthalmic market. Maui Jim, Inc. was established in December 1996, when Maui Jim Sunglasses acquired RLI Vision. This provided the financial resources and infrastructure to accommodate the phenomenal sales growth of Maui Jim Sunglasses. Today, the company sells more than 70 styles and 200 SKUs and is the fastest growing polarized sunglass maker in the world.

Clear vision for the French spectacle trade in Dubai



Sixteen French companies will storm the tradeshow with their creativity at VISION X Dubai next May 24th and 26th. Gathered in the national pavilion by UBIFRANCE, they will be joined by the "Lunettes de France" Association, which assembles and promotes the entire trade.

The French optical industry has successfully made use of its know-how, the fruit of a long tradition, to diversify and meet current consumer demand, which has raised spectacles to fashion item status while requiring ever more sophisticated technical performance.

FIDELA, OPHL LAFONT and MOREL France are pure examples of the many generations that have exchanged the best of their knowledge, enhancing it with high-performance technology while at all times keeping an eye on quality and authenticity.

There is much innovation in the materials, adapted to all possible shapes: cellulose acetate for ELCE, titanium, beta titanium, carbon, plastic, XP2, leather, wood, etc., and the sublimation of volumes or details in Exalto models, the architectural or geometric shapes in the Xenith or Ted Lapidus lines from LOOK VISION, the technically advanced hinges made by Enrico Cecchi and Oxibis, or the interchangeable temples from Dilem. Comfort and ergonomics are everywhere, occasionally becoming a leitmotiv as they do with MININA which offers ultra-light models that perfectly fit the wearer's

morphology.

Colors come in energetic, tangy tones for Oxibis, vibrant with original patterns for Banana Moon, lively or sober, intense or refined...

Sunglasses are often sporty and energetic, giving free rein to creators: Parasite Noego for PARASITE DESIGN, beautifying and refined for Enrico Cecchi at VISIOPTIS, as well as Zilli.

All personalities will get a chance to express themselves with the sober, tasteful models from Le Tanneur, or the discrete, dynamic and balanced models from Cogan Power Design, or assert themselves with famous brands from GROSFILLEY LUNETTES, manufacturer for such renown brands as Azzaro, Charriol, IKKS, Thierry Mugler and Smalto, and for its very own X-One brand.

While the French spectacle trade will make a particularly strong showing at VISION X, it will not be the only industry representative. ESSILOR INTERNATIONAL, world leader in ophthalmic lenses will be introducing the results of its latest research, and OFTAL will be offering its range of instruments for opticians that are excellent value for money.

Also attending VISION X, SILMO is inviting all sector professionals to be at its International Optical Tradeshow, to be held in Paris from next September 29th to October 2nd.

The French optical industry will be exhibiting in Hall A at VISION X!

www.ubifrance.fr



Marchon Eyewear, Inc. establishes new offices in Dubai



Melville, NY (April 4, 2011) – Marchon is pleased to announce the establishment of their new international offices in Dubai, UAE.

Marchon Gulf has officially opened on March 1, 2011 serving the Gulf market to exclusively represent our brands. The space is located at the Dubai Airport Free Zone and will serve as the base of operation for Sales & Marketing and will also include a dedicated showroom for our customers to easily view our collections.

"We're very excited to open our international offices in Dubai. It will help us to better assist accounts and provide superior customer service to our consumers in the

area," said Claudio Gottardi, Marchon President and CEO Marchon International.

Nicola Zotta, VP and Managing Director EMEA said, "This move is part of an overall strategy to strengthen our distribution and market shares in EMEA together with many other strategic decisions we have already implemented and are about to implement."

Marchon Eyewear, Inc. is one of the world's largest manufacturers and distributors of quality eyewear and sunwear. The company markets its products under prestigious brand names including: Calvin Klein, ck, Coach, DIANE von FURSTENBERG, Disney/XGames, Emilio Pucci, FENDI, Flexon, Jil Sander, KARL LAGERFELD, Marchon, Michael Kors, Nautica, Nike and Sean John. Headquartered in New York, with regional headquarters in Amsterdam, Hong Kong and Tokyo, Marchon distributes its products through numerous local sales offices serving customers in a network of 100 countries.



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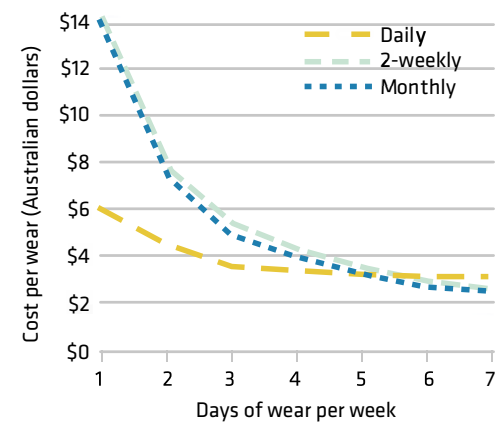
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Figure 5: Cost per wear for daily, two-weekly and monthly replacement spherical lenses.



After Efron[®] with permission from *Clin Exp Optom*

week. Multifocal lenses have cross-over points for daily versus two-weekly lenses at 4-5 days' wear per week and for daily versus monthly lenses at 3 days per week. The authors conclude that daily disposable lenses are more cost-effective for part-time wear, with reusable lenses being more cost-effective for full-time wear.

The model can be applied to the cost of contact lens wear in different countries and the relative costs of different forms of lens wear are unlikely to vary. The cross-over point will vary depending on the cost of individual lens brands being compared. Practitioners could apply this principle to examine the impact of different cost inputs and assumptions in their own practices. Cost per wear can also be used to aid compliance by demonstrating to patients the cost-effectiveness of their replacement regime and wearing schedule.

These authors also observe that the most frequent reason given by daily replacement lens wearers for noncompliance is 'to save money', showing that cost can also be a clinical issue, although compliance with replacing daily disposables is generally high across markets.²⁸

Conclusions

The key to success with an individual patient is the ability to select the lens (material and design), replacement frequency and wearing modality that best meets his or her individual needs. That decision will be based on a variety of factors: clinical, most likely to comply, practical considerations such as wearing patterns and lifestyle, and cost. This will help deliver not only optimal physiological response and vision, but also comfort performance, the main reason for lapsing from lens wear.

While the optimum replacement interval for soft lenses will continue to be debated, the contention that 'fresher is better' from the clinical standpoint is supported by many studies over the past 30 years.

There are conflicting findings on compliance with different replacement frequencies. However, a better approach might be to acknowledge that almost all contact lens wearers are noncompliant to some degree and focus on identifying these behaviours and the reasons behind them. Encouraging compliance will help ensure that all wearers get the best from their lenses and wear them as comfortably and safely as possible.

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Table 1: tips to improve patient compliance with replacement frequency

- Reinforce compliance advice at every opportunity
- Use open questions to identify patients who are non-compliant
- Explain the comfort, vision and ocular health benefits of replacing lenses as recommended, with illustrations of the potential consequences of over-wear (e.g. using grading scales)
- Use memorable analogies to reinforce lens replacement
- Track order patterns to identify patients using fewer than expected lenses
- Use direct to patient shipments to aid compliance with replacement schedule
- Ensure practice supply, delivery and pricing aspects aid compliance; a care plan including aftercare allows regular monitoring of patients
- Suggest the 1st and 15th of the month as replacement days to aid compliance with two-weekly replacement lenses
- Use electronic reminder systems to prompt patients when to change their lenses
- Remind patients always to have an adequate supply of lenses to aid replacement compliance and a back-up pair of spectacles.

order patterns to identify those who are using fewer than expected lenses; a direct to patient shipment method can also aid compliance with a replacement schedule. Supply, delivery and pricing considerations can also be used to aid compliance, and offer a care plan that includes aftercare for all lens types so that you can monitor your patients regularly. For two-weekly replacement lenses, suggesting the first and 15th of the month as replacement days may aid compliance.

Use the ACUMINDER™ electronic reminder system or a device such as the Lens Alert case to remind patients when to change their lenses, since more than half of those not replacing lenses when recommended report that they simply forgot which day to replace them.³⁰ In this study 53 percent of wearers believed that a reminder system would aid compliance, the most popular methods being a mobile phone reminder or text message (29 percent) and a nominated day each week or month (26 percent).

Remind patients always to have an adequate supply of lenses on hand as an aid to replacement compliance. Make sure that patients also have a back-up pair of spectacles, since a higher proportion of those non-compliant with replacement frequency do not have an up-to-date spectacle prescription.³⁰

The good news is that better communication has been shown to facilitate greater compliance with replacement frequency. Discussion between practitioner and patient is more extensive for patients who are compliant. Moreover most wearers (78 percent) acknowledge that it is extremely important or important to replace lenses on schedule.

Cost, convenience and replacement frequency

Clinical factors are not the only determinants when choosing a replacement schedule for a particular individual; other patient factors also come into play. The decision is often based on lifestyle and leisure pursuits, and this is particularly the case with daily disposable lenses which are a convenient option for occasional or part-time wear, for social use, sports and travel.

Cost is another important issue that is often neglected in the literature. A model developed recently in Australia introduces the concept of 'cost-per-wear' to allow direct comparison of the cost of different lens replacement frequencies.³⁷

Cost-per-wear is the total cost incurred by a patient over 12 months, taking into account professional fees and the cost of lenses and solutions, and dividing this by the number of times the lenses are worn over that period.

The model shows that cost-per-wear for spherical lenses is almost identical for two-weekly and for monthly replacement but decreases with increasing frequency of wear. For daily replacement it is lower than for reusable lenses when worn 1-4 days per week but higher when worn 6-7 days per week. The cross-over point is at five days' wear a week, when cost-per-wear is virtually the same for all three commonly prescribed lens replacement frequencies (Figure 5).

A similar but higher cost pattern is observed for toric lenses, with cross-over at 3-4 days' wear per



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The importance of compliance to comfort and vision in SiH lens wearers has been highlighted in another recent study in the US.³³ Patients wearing either two-weekly or one-monthly replacement SiH lenses rated their comfort and vision in the morning, at the end of the day, when lenses were new and when they needed replacing.

Compliant patients had better comfort and vision at end of day and when the lenses needed replacing than non-compliant patients, and this was the case regardless of replacement modality. However, a potential limitation was that the samples used in this study differed, with more toric lens wearers in the two-weekly group than the monthly group, which may have influenced the results.

These authors observe that some lens materials may be optimally replaced every two weeks whereas other materials could be comfortably worn for a month. In fact multiple lens attributes can impact contact lens comfort, including material properties such as modulus, smoothness, wettability and wetting agents. Comfort also depends on how proteins, lipids and allergens deposits on the surface over time.³⁴

Arguments for and against prescribing a particular replacement frequency from the compliance viewpoint may therefore be misplaced. It may be more appropriate to select the best combination of lens attributes for a given patient and the way the lens is to be worn.

A new US study sheds more light on the relationship between contact lens-related ocular complications and compliance with soft lens replacement schedule.³⁵ Patients who 'stretched' their lens life more than three times the recommended interval were found to have significantly more complications than compliant patients.

Interestingly, this study found that compliance varied not just with replacement frequency but with lens type. Compared with patients wearing SiH lenses, those using conventional hydrogels tended to over-wear their lenses 3-4 times longer on average beyond the recommended replacement frequency (44.8 average days over-wear for noncompliant patients wearing hydrogels compared to 16 days with SiHs).

These authors argue that although compliance is important, the number of days that the patient

exceeds the recommended schedule is also a key factor. They observe that even patients who are not fully compliant can still reduce their rate of complications by reducing the number of days they over-wear their lenses.

A further issue which has received attention is that of practitioners prescribing replacement that differs from MRRF.³⁰ Possible reasons cited include the perception that some lens types do not degrade in performance when worn for longer periods and that their replacement frequency can therefore be extended. In some cases replacement more frequent than the MRRF was recommended; this occurred only for 1 percent of two-weekly lenses but for 18 percent of monthly lenses.

Reinforcing compliance

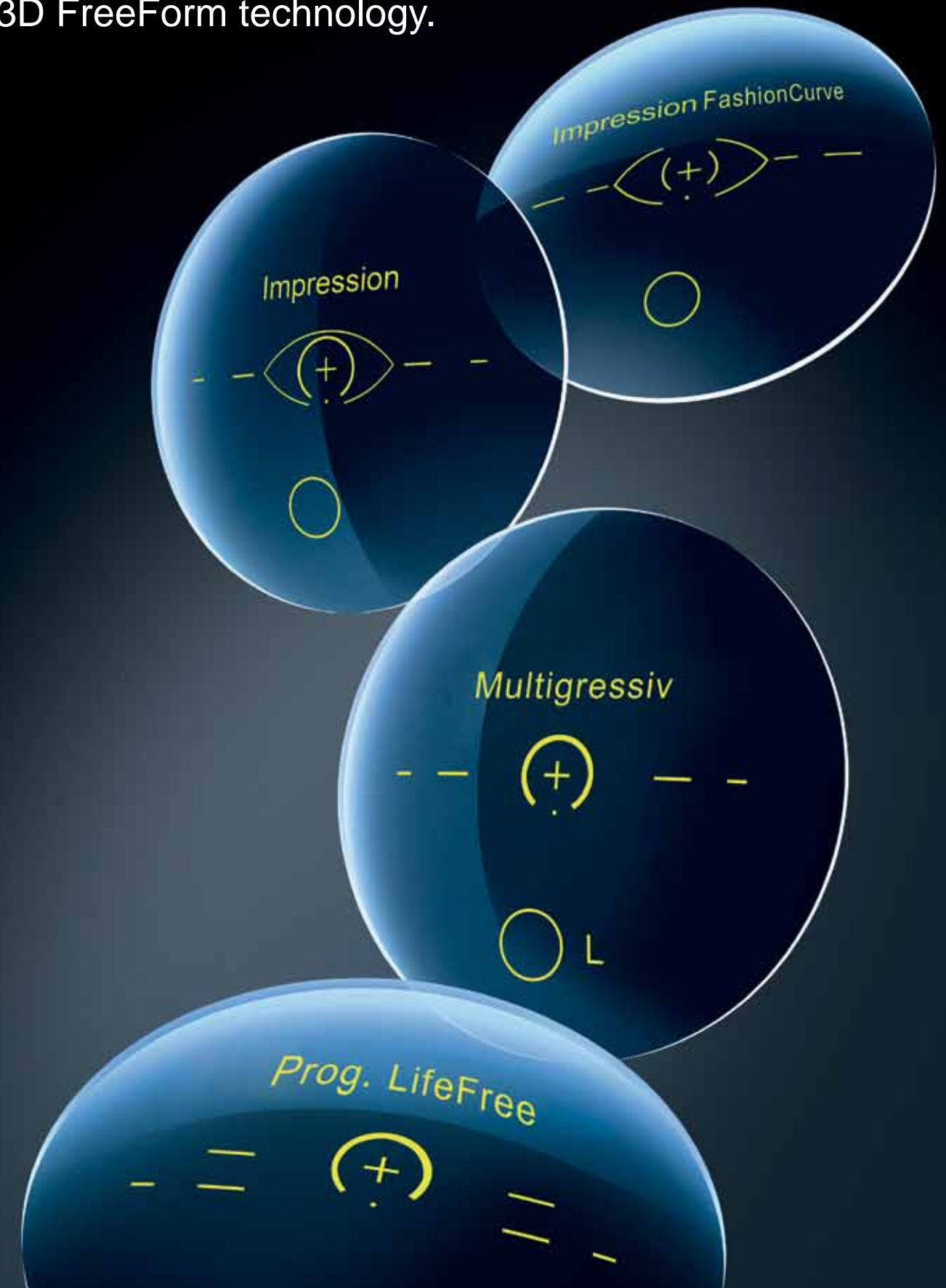
If the debate continues on the optimum replacement frequency, there is general agreement that, for reusable lenses, perfect compliance levels overall are low. Practice procedures should therefore be directed at identifying those who are noncompliant and encouraging compliance at every opportunity.³⁶ Examples of ways to improve compliance are summarised in Table 1.

Carefully question the patient using open questions to elicit non-compliant behaviours, such as 'How often do you replace your lenses?' rather than 'Are you replacing your lenses every two weeks?'. Empathise with the patient so that they feel more able to admit to stretching, while emphasising that comfort and vision will not be optimal unless lenses are replaced as recommended and, at worst, could put the health of the eyes at risk. Explain that wearing lenses longer than recommended may be associated with a higher risk of contact lens-related complications.^{30,35}

However, it is worth remembering that compliance is about much more than just replacement schedule. In fact only 2 percent of contact lens wearers are thought to be fully compliant with their contact lens wear and care regime.²⁹

Try employing a memorable analogy for reinforcing lens replacement; in the case of daily disposables, re-using a wet wipe or paper tissue could be a useful analogy. Reinforce your advice at every visit and track

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CONTACT LENSES

A survey of SiH and daily disposable wearers was conducted through eye care practices in the US that included lens wearer distribution of 16 percent daily disposable, 45 percent two-weekly SiH, and 39 percent monthly SiH.³⁰ One percent of monthly lens wearers, 4 percent of daily disposable wearers, and 18 percent of two-weekly wearers were given instructions that did not conform to the manufacturers' recommended replacement frequency (MRRF). Four percent of patients reported that their practitioner gave no recommendation on replacement frequency.

Four in 10 patients completing the survey exceeded the MRRF. Asked after how many days or months they replaced their lenses, 15 percent of daily disposable wearers said they replaced their lenses after more than a day, 29 percent of four-weekly lens wearers after more than 31 days, and 59 percent of two-weekly wearers after more than 17 days. The most frequent reasons given were 'forgetting which day to replace lenses' (51 percent) and 'to save money' (26 percent).

A study in Canada and the US by the same group showed similar results although prescribing rates differed.³¹ Non-compliance rates for actual replacement frequencies reported by patients were lowest for daily disposables, followed by monthly lenses (33 percent Canada, 28 percent US) and two-weekly lenses (50 percent Canada, 52 percent US).

However, recent findings support the view that the problem of 'stretching' replacement interval is worse

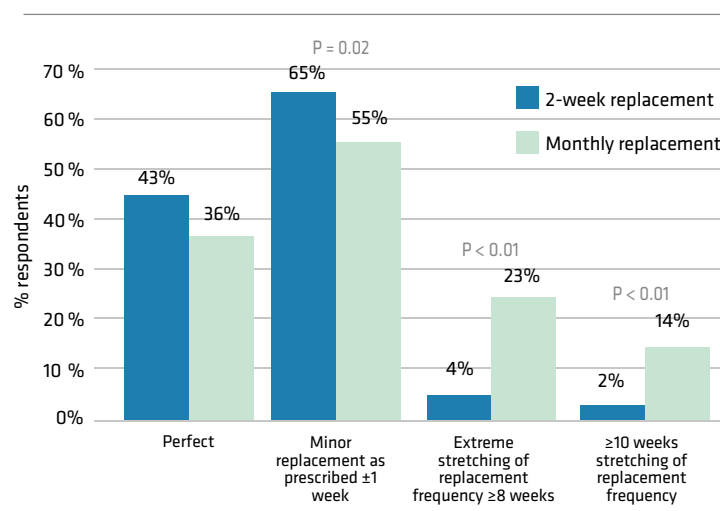
among patients wearing a monthly lens than in those with a two-weekly replacement schedule.³² An online survey was conducted among randomly selected US consumers who were unaware that the information was being sought by a contact lens manufacturer.

The results showed that only 43 percent of patients who were prescribed a two-weekly replacement lens and only 36 percent of patients prescribed a monthly replacement lens were complying perfectly with the prescribed schedule.

'Minor stretching' (up to one week) was identified among 65 percent in the two-weekly replacement group and 55 percent of those in the monthly replacement group. But only 4 percent of patients in the two-weekly group displayed 'extreme stretching' (8 weeks or more) compared to 23 percent in the monthly group (Figure 4). Monthly wearers were therefore more prone to extreme over-wear, potentially leading to problems with comfort and/or vision.

For the authors of this work,³² it was counterintuitive that patients who were noncompliant with a two-week replacement schedule would be more adherent to instructions if allowed to wait four weeks to change their lenses. When noncompliance with frequent replacement was an issue, switching to daily disposable lenses was probably a better alternative, they suggested.

Figure 4: 'Stretching' of lens replacement interval from survey of 645 frequent replacement contact lens wearers³²



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significant difference between the two lens types.

Asked which week of the month, in general, these wearers started to notice that their lenses were uncomfortable, more than nine out of 10 (95 percent) said that they became aware of discomfort in weeks three and four. Monthly SiH lens wearers who experienced discomfort tended to notice it earlier in the lens cycle than hydrogel wearers.

For over half of wearers, subjective perceptions of vision and ocular health also worsened over the course of a month's wear. Around two thirds (64 percent) felt their vision was less clear at the end of the month compared to the first day they put the lenses in, and just over half (53 percent) felt the lenses were less healthy for their eyes. Again these perceptions were shared by SiH and hydrogel wearers alike.

There was also evidence that some monthly wearers replaced their lenses more often than once a month in order to maintain comfort, regardless of lens type. About one in three (34 percent) felt they had to replace them before the end of the month due to discomfort and this was the case for both hydrogel and SiH wearers.

Other authors have found a decline in lens performance with lens age. A recent study investigated patient wearing experience (comfort, symptoms and comfortable hours of wear) with two daily wear SiH lenses, the two-weekly ACUVUE® OASYS® with HYDRACLEAR® Plus and monthly replacement AIR OPTIX® AQUA lens.^{22,23}

Both lenses showed performance declined across their recommended life, in some cases in the first week of wear. With the two-weekly replacement lens, comfort slowly declined across the wearing schedule (Figure 1). In contrast, the monthly lens showed a sharp drop in the proportion of patients who were satisfied with overall comfort during the first week of wear (85 percent to 60 percent), and the proportion of patients who were dissatisfied with comfort increased over the remaining three weeks (26 percent at the end of the monthly lens' wear cycle compared to 10 percent at the end of the two-weekly lens' wear cycle).

Results for end-of-day comfort (Figure 2) showed a similar distribution, and, for the monthly lens wearers, uncomfortable hours of wear continued to increase over the four-week life of the lens (2.2 hours average increase in uncomfortable wear from two to four weeks, a statistically significant difference). Clinical evaluations of deposits, wettability, corneal staining and limbal redness also showed a decline in performance over time, which may partly explain the decrease in comfort and increase in dryness symptoms.

Researchers have also looked at the impact of replacement frequency on scheduled and unscheduled visits in SiH wearers.²⁴ The median return for an annual visit for two-weekly and monthly prescribed lens wearers was the same, at 13 months. But significantly more monthly wearers returned for an unscheduled visit due to clinical complaints related to their contact lenses than two-weekly lens wearers (13 percent vs 8 percent, Figure 3).

Figure 1: Overall comfort satisfaction during a randomised, parallel group, 2-4 week subject masked, daily-wear study²²

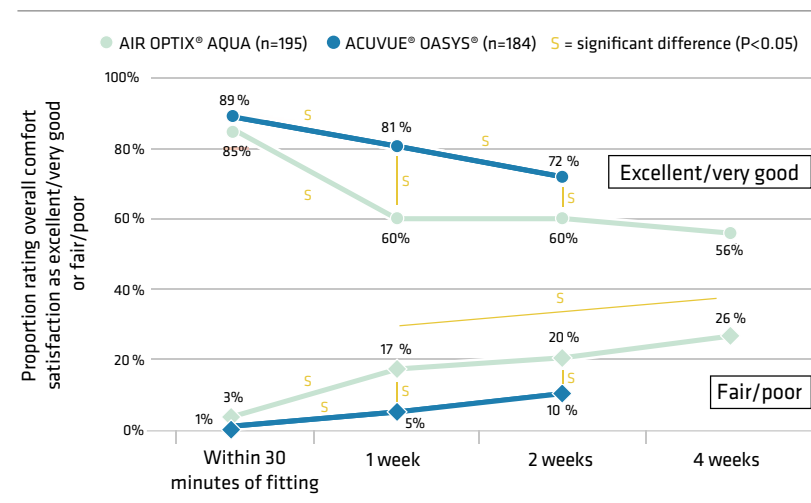
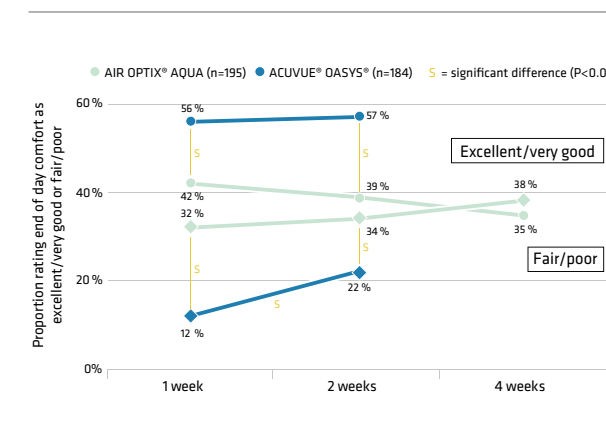


Figure 2: End of day comfort satisfaction during a randomised, parallel group, 2-4 week, subject masked, daily wear study²²



Complaints included irritation, discomfort and blurred vision. Return visits for medical reasons were not different in this study.

For patient satisfaction and practice efficiency, practitioners should consider these findings when deciding on optimal replacement frequency for SiH lenses, the authors conclude.

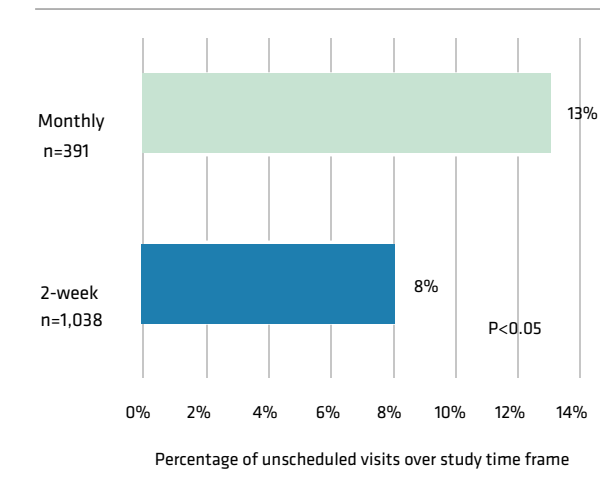
However, some studies of soft lens wearers (SiH and hydrogel) have revealed no differences in other clinical findings between replacement schedules. The Contact Lens and Dry Eye study²⁵ found no significant difference in the frequency of contact lens-related dry eye between different modalities. More recently, lens factors other than replacement schedule, such as water content, material, wearing time and deposition, have shown an association with corneal staining.²⁶

Compliance with replacement interval

If 'fresher is better' for clinical reasons, is it also better for patient compliance? The overwhelming consensus is that daily disposable wearers are the most compliant group, despite initial concerns when these lenses first became available that patients might re-use them. Jones et al⁶ were among the first to report that wearers of daily disposable lenses were more likely to be compliant with the prescribed wearing schedule than other disposable and frequent replacement lens wearers (98 percent vs 89 percent).

Recent consumer surveys have supported this finding. In the US, a survey of wearers with recommended replacement intervals up to six months found that

Figure 3: Percentage of patients returning for a contact lens-related unscheduled visit²⁴



daily disposable wearers were the most compliant; 94 percent of wearers told to replace their lenses every day complied, less than 6 percent discarded lenses every two days and 0.5 percent waited up to a week before replacing their lenses.²⁷

A study by Donshik et al²⁸ found good correlation between the prescribed lens replacement schedule and patients' actual replacement, and that the recommended schedule was followed less as the replacement interval increased.

Morgan²⁹ reported very high levels of compliance among daily disposable users in the UK, with as many as 97 percent of wearers discarding their lenses on a daily basis, compared with 81 percent of two-weekly wearers and 82 percent of monthly wearers who replaced their lenses within the recommended period. This author also noted very wide differences in compliance rates between countries.

Other authors support the view that compliance with lens replacement in the UK is similar with two-weekly and four-weekly lenses. Jones et al⁶ found equal levels of compliance with these modalities (89 percent), and a maximum replacement interval of 28 days for two-weekly lenses and 50 days for four-weekly lenses.

Recent studies have added further to the compliance debate. Dumbleton and co-workers have published a series of papers based on surveys conducted in North America about replacement frequency of soft lenses, patient and practitioner compliance with these recommendations and reasons for patient noncompliance.

lowest overall complication rate of soft daily wear modalities and the complication rate to rise as the replacement interval increased.^{11,12}

More recently, the relative incidence of more serious complications with different modalities has been the subject of further research. In the UK, a study in Manchester showed that daily disposable users had the lowest incidence of non-severe keratitis of all soft lens types.¹³

Other studies by Stapleton and Dart^{14,15} did not find a lower risk of microbial keratitis (MK) compared to other soft daily wear lenses. However, of those daily disposable users presenting with MK, about half (52 percent) admitted to at least occasional overnight wear,¹⁴ a major risk factor for MK. Also, the daily disposable modality seemed to be associated with the lowest risk of severe MK, although there was a difference in relative risk noted between brands.¹⁵

From the clinical standpoint, numerous studies have therefore supported the contention that 'fresher is better' for soft lens replacement.

One study looked at the effect on comfort of replacing hydrogel lenses more often than daily, and although replacing lenses mid-way through the wearing day led to an initial improvement in comfort with the new lenses, there was no difference in end-of-day comfort scores.¹⁶

Many of the large-scale studies comparing clinical performance with different replacement frequencies were conducted in the 1990s with hydrogel lenses. Over the past decade not only have new designs emerged to correct a wider range of patients but silicone hydrogels (SiHs) have overtaken hydrogels as the materials of choice in most markets across the world. Further studies with currently available lenses have therefore shed more light on the arguments for and against each replacement frequency.

The advent of silicone hydrogels

In 1999, the introduction of the first SiH lenses marked a major step forward in contact lens technology. But the clinical performance of the first generation of SiHs and the reluctance of practitioners to embrace extended wear initially caused relatively low uptake. Today, SiHs have become the most

commonly prescribed materials in the UK, accounting for half of all new fits and two in every three refits.¹⁷ Only a small minority of lenses (5 percent) are prescribed for extended wear.

With an increasing number of prescribing options, soft lens replacement interval has continued to be debated. The first generation of SiHs were recommended for monthly replacement and up to 30 nights' continuous wear. Two-weekly SiH options emerged in 2004 with ACUVUE® ADVANCE® with HYDRACLEAR® and, the following year, ACUVUE® OASYS® with HYDRACLEAR® Plus, the first of a new generation of SiH lenses with low modulus of elasticity and coefficient of friction, and wettability achieved without the need for a surface coating.

In 2008 came the world's first daily disposable SiH lens, 1-DAY ACUVUE® TruEye™, which meant that SiH lenses were now available in all three of the most commonly prescribed replacement frequencies. Almost all new lenses fitted in the UK today are for replacement at intervals of one month or less (99 percent) and almost half (45 percent) are for daily replacement.¹⁷

The frequency of lens replacement continues to vary greatly among markets.¹⁸ Daily disposable lenses, for example, are prescribed for 6 percent of fits in Croatia and for 75 percent of fits in Hong Kong. However, North America remains below the global average for the proportion of daily disposables fitted (30 percent). The US and Japan markets have the highest overall contact lens penetration (16 percent and 22 percent respectively)¹⁹ where two-weekly lenses are the most commonly dispensed reusable lens types.²⁰

Several studies have investigated the influence of replacement frequency on the performance of modern lenses. A survey in 2007 to investigate monthly soft lens wearers' experience with their contact lenses asked wearers using a variety of monthly lens brands - traditional hydrogel and SiH - about their attitudes to their current lens performance.²¹

More than two-thirds of monthly lens wearers (68 percent) noticed a decrease in wearing comfort over the course of a month and the sensation of growing discomfort was experienced almost equally by wearers of hydrogel and SiH lenses, with no

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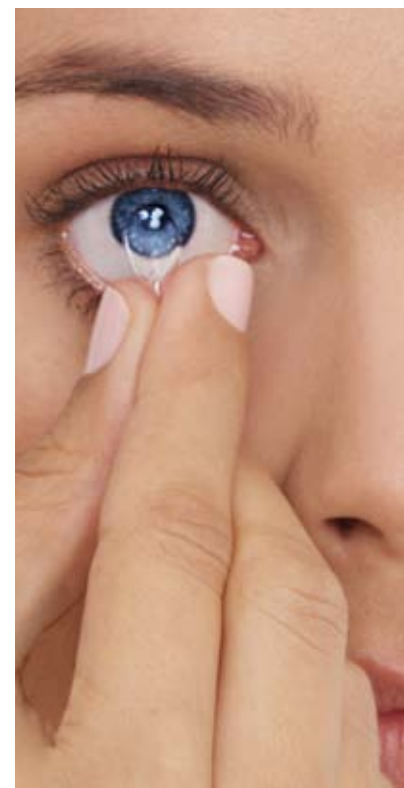
Studies compared vision performances between ACUVUE® OASYS® for ASTIGMATISM and PureVision® Toric, Proclear® Toric & Air Optix® for astigmatism. 1. McBrath R, Young G, Hart C. Toric lens orientation and visual acuity in non-standard conditions. CLAE 2010; 33 (1): 23-26. 2. Chamberlain P et al. A vision chart to quantify disturbances in acuity during wear of toric contact lenses. Optom Vis Sci 2008; E-abstract 85079. 3. Zhou G et al. Rotational Stability of Toric Soft Contact Lenses During Natural Viewing Conditions. Optom Vis Sci 2007; 84 (11): 1039-1045. 4. Class 1 UV Block: 96% UVA; 100% UVB; UV absorbing contact lens are not substitute for UV-blocking sunglasses as they do not completely cover the eye and the surrounding area. 5. JVC Data on File 2010. All other companies brand names mentioned herein are the trademarks of their respective owners. ACUVUE®, ACUVUE® ADVANCE™ for ASTIGMATISM and SEE WHAT COULD BE™ are trademarks of Johnson & Johnson (Middle East) Inc. © Johnson & Johnson (Middle East) Inc. 2011.

The long and the short of soft CL replacement

The optimum replacement interval for soft contact lenses has been debated since the first hydrogel lenses emerged almost 50 years ago. Anna Sulley and Sheila Hickson-Curran review the background to this debate and the latest research findings.

KEY POINTS

- Many clinical studies and patient satisfaction surveys support the contention that 'fresher is better' for soft contact lens replacement, especially when replaced daily
- Soft lens performance generally declines with lens age
- Almost all soft lenses fitted today are for replacement at intervals of one month or less
- In the US and Japan two-weekly lenses are the most commonly dispensed reusable lens types, markets with the highest contact lens penetration rates
- Compliance with lens replacement varies between countries
- Daily disposable wearers are most likely to comply with lens replacement
- Extreme 'stretching' is more likely among monthly than two-weekly replacement lens wearers
- Failure to replace lenses at the recommended interval is associated with discomfort and complications
- Monthly wearers are more likely to make unscheduled visits for clinical complaints than two-weekly wearers
- Practitioners need practice strategies to reinforce compliance with lens replacement
- 'Cost-per-wear' for spherical and toric lenses is similar for two-weekly and for monthly replacement



How often should wearers replace their contact lenses?

When Professor Otto Wichterle produced the first wearable soft contact lenses in 1961 using a Meccano set and the generator from his son's bicycle, he had already considered how long each lens would last and how often it should be replaced. Asked what should be done with the lenses when they were dirty, Wichterle would simply say throw them away.¹ Fifty years later, contact lens manufacturing and materials may be a world away from those early days of soft lenses, but the optimum replacement interval for Wichterle's pioneering invention still provokes debate.

The original soft lenses were replaced when damaged, lost or spoiled such that they became uncomfortable and vision deteriorated. Depending on the patient, disinfection system and lens material, replacement intervals could be as long as two to three years although, as soft lenses became more widely prescribed, some practitioners began to introduce their own replacement schemes based on their clinical experiences of lens life.¹

The industry's concept of planned or frequent replacement for soft contact lenses first emerged in 1985 with a three-monthly replacement scheme. It was in 1988, when the ACUVUE® lens was first introduced to the UK, for weekly replacement, that 'disposable' became the accepted term for these lenses. In the late 80s, more two-weekly and weekly options emerged, whether for daily or extended wear.

With a variety of replacement schedules available, researchers studied the relative merits from a clinical standpoint. Literature reports of the benefits of frequent replacement and disposability over unplanned replacement are extensive, and centre primarily around the influence on lens deposits and their impact on clinical performance.

Several early studies demonstrated the clinical benefits of replacing lenses at least monthly. With high water content hydrogel lenses, front surface wettability is better maintained and lens deposits decrease if lenses are replaced monthly rather than every three months.² Replacing lenses every month or more frequently maintains performance throughout the period of use, whereas increasing the replacement interval to three months leads to a significant loss of performance.³

Other studies also support the choice of two-weekly over monthly replacement for clinical reasons. As early as 1980, it was suggested that disposing of lenses either weekly or two-weekly could help to minimise lens deposits that adversely affect patient comfort.⁴ Later, protein and lipid deposits on Group II lenses were shown to increase progressively over four weeks' wear.⁵

A survey of more than 1,000 soft lens wearers found fewer dryness symptoms and end-of-day discomfort with two-weekly replacement lenses than with monthly lenses.⁶ Comfort at replacement was the same with daily disposable and two-weekly lenses and both were significantly more comfortable at replacement than monthly lenses. Other authors showed that two-weekly replacement lenses, when combined with a multi-purpose solution, provide better patient comfort and satisfaction than other, monthly replacement lenses.⁷

Replacement frequency also appears to be a factor in developing papillary changes. Patients on a one-day to three-week replacement cycle with hydrogel lenses had a significantly lower risk of developing giant papillary conjunctivitis (GPC) than patients who replaced their lenses at longer intervals.⁸

That 'fresher is better' when it comes to soft lens replacement interval was therefore evident from the early days of planned replacement and disposability. And although some specialist lenses were still replaced less frequently, the most commonly prescribed hydrogel lenses came to be replaced at intervals of one month or less.

Daily disposables debut

In 1995, the introduction of the first daily disposable lens offered the simplicity and convenience of contact lens wear free from cleaning and disinfection and led to comparisons of clinical performance with other modalities.

When re-fitted with a daily disposable lens, conventional daily wear users showed improved vision, comfort, symptoms, slit-lamp findings and overall satisfaction.⁹ The incidence of corneal complications with lenses replaced daily was lower than with other lens types, including gas permeable lenses.¹⁰ Daily disposables were shown to have the

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■ من بين الصناعات في منطقة الشرق الأوسط، لا تحتاج كلمة إيجما إلى المزيد من التوضيح، الجميع يعرفون عنها. تنظر إليها صناعة البصريات بتقدير واحترام كبيرين ويعود فضل هذا المستوى العالي من التميز لهذه الإدارة الصناعية في الأسواق إلى شخصيتين متابرتين ساعدتا في تشكيلها: إغترافي الأب وإغترافي الابن.

■ الشركة التي كانت تسمى في السابق مصنع إيجما لصناعة العدسات، تسمى الآن إيجما للتجهيزات البصرية، وهي تسير في خطى الموروث العائلي بقيمه العالية التي عمل غرسها رجلين عرف عنهما الحكمة والشغف في عالم البصريات وهما السيد ضياء اغترافي والسيد پويا اغترافي. فبينما قام السيد ضياء اغترافي بتأسيس المنشأة عام ١٩٧٥، استمر السيد پويا في الحفاظ على تراث الوالد.

■ يقول السيد پويا بأن عمله ضمن الجيل الثاني في المنشأة لم يكن اجبارياً، فبينما اختار شقيقه الوحيد أن يصبح محامياً، عقد العزم هو شخصياً لكي يصبح مساهماً في تطوير إيجما. وعندما ينظر إلى الوراء، يتذكر نشأته في مصنعهم في المملكة العربية السعودية. وكفتى يافع يزور المصنع بانتظام، حيث كان المعمل بمثابة الملعب بالنسبة إليه فقد تعلم كيفية صقل العدسات وكان له الأثر في تأسيس الشغف لديه في البصريات.

■ التحق السيد پويا رسمياً في العمل ١٩٩٥ حيث عمل في المخزن. عندما أوكلت إليه إدارة المنتجات وجرى المخزون وتحديث المنشأة التي مضى عليها عقود من الزمان بتقنيات جديدة. ثم، وفي عام ٢٠٠٠، قررت إيجما نقل مقرها إلى دبي من أجل الاستفادة من الإمكانيات اللوجستية.

■ يشير السيد پويا أن أمر الانتقال كان سهلاً حيث التسهيلات التجارية التي حظى بها في الإمارات العربية المتحدة ساهمت في تأسيس أرضية قابلة للنمو تليق بالمركز الرئيسي للمنشأة. وقد ساهمت الخبرة التي اكتسبها في بناء المصنع في تعلم

الكثير من الحقائق، وفتحت له آفاقاً جديدة أجازت له اتخاذ قرارات بحرفية أكثر، واجتناب الأخطاء الصغيرة عند بناء المصنع الثاني في ٢٠٠٢.

■ عندما يستعيد ذكريات الماضي فيما يخص حياته المهنية، يقول أنه يشعر بفخر شديد لدوره في التعليم. فهو يردد أنه يشعر بالرضا لكونه عاملاً مساهماً حتى ولو بجزء صغير في تثقيف الاختصاصيين في البصريات ودفعهم إلى مستويات أعلى في اختصاصهم. ففي إيجما، تعقد العديد من الدورات التدريبية للفنيين، وفاحصي البصر بالإضافة إلى أفراد المبيعات حول مهارات البيع.

■ يعتقد السيد پويا بأن عملية بيع العدسات الطبية على وجه الخصوص تصبح مثيرة للملل إذا ما اعتقد البائع أنه يبيع شيئاً عادياً. لكنها بالنسبة إليه فهو فالأمر على النقيض تماماً. في الواقع، إنها عملية غاية في الإثارة، كما أنها تمثل تحدياً. ويمضي السيد پويا بأنه يحاول أن يكون خلاقاً وأن يطبق طرقاً جديدة عند بيع العدسة، وذلك عند تعريفها بالطريقة التي يوصل بها حاجات العميل إلى المعمل ثم تسليم الحاجات إلى العميل.

■ يتذكر دائماً الأوقات التي يشعر فيها بالإعزاز عندما يتصل به الفنيون ويسألونه عن أنواع معينة من عدسات البروجرسف، ويقول أنه ربما بدأت حلقات التدريب التي باشر بنشرها مع إيجما تؤتي ثمارها بمنحها المعرفة لأصحاب الاختصاص في مجال النظارات. ويضيف إنها فعلاً لحظات تشعرني بالاعتزاز، وبالإضافة إلى ذلك فهو يعتبر أن الإنجاز الحقيقي له كشخصية رئيسية في إيجما هي القدرة على تقديم رودنستوك وبناء الاسم كواحد من أكبر الأسماء في الشرق الأوسط ويضيف ضاحكاً أنه يعرف هنا في الشرق الأوسط باسم "مستر رودنستوك".

■ هذه العلاقة المذهلة بين إيجما ورودنستوك سوف تشهد مشاريع جديدة هذا العام، وسوف يكشف عنها في معرض دبي للبصريات هذا الشهر. وطبقاً للسيد پويا فإن هذه السنة ستكون

سنة مذهلة له ولصناعة العدسات على وجه العموم لأنها سوف تشهد التقنية الجديدة للعدسات المتشكلة مسبقاً والتي سوف يتم تقديمها في معرض دبي للبصريات. إنها تحول كامل لما يمكن أن يقدمه إيجما لعملائه حيث لن يضطر أن يقول لهم أنه سوف يطلب العدسات من ألمانيا. إن أي نوع من العدسات التي تنتج في ألمانيا سوف نستطيع انتاجها هنا، فهو يؤكد أن ذلك سيكون شيئاً عظيماً. أنواع جديدة من البروجرسف، بمواد جديدة، ومنتجات جديدة - إنها في الواقع عدسات تصلح للجميع.

■ وفي الجانب الآخر حيث الوكالات الحصرية، فإن إيجما سوف تعلن في خلال فعاليات معرض دبي للبصريات الموديلات الجديدة من بورش ديزاين ودنهل وكذلك مرسيدس بنز التي ستطرح قريباً في الأسواق.

■ وعلى الرغم من النجاحات الظاهرة للعيان، فإن السيد پويا كان مدركاً للتحديات التي واجهت الصناعة باستمرار، ويقول مبتسماً بأن تجارة العدسات لا يوجد فيها نص مكتوب، ولا قوانين يجب تطبيقها، مما يدفعك لكي تكون خلاقاً أكثر. ويضيف: "كيف تستطيع أن توصف عدسة شفافة وكيف يمكن أن تجعل الأمر مثيراً؟".

■ يمتاز بأنه في إيجما، يحرص على تقديم منتجات متميزة جداً ولكن بطريقة ما في تجارة مثل هذه، تحكى قصة المنتج بواسطة الماركة نفسها، والمسوقون عليهم فقط أن يروجوا تلك القصة. لكن في موضوع العدسات فإن القصة لم تكتب ولم تفهم من قبل الجميع بعد. إن فهم الأمر ليس بتلك السهولة، وأحياناً لا توجد هناك قصة على الإطلاق، لذلك فإن كيفية إيصال الرسالة إلى الفني وبالتالي إلى المستهلك يعد تحدياً مثيراً للسيد پويا وفريقه.

■ التحدي المثير الآخر أنه يجب أن يرى حدوث بعض التغييرات في أمور الرقابة وكذلك التعليمات المتعلقة بهذه الصناعة. فعلى عكس ما يحدث في الدول المتقدمة حيث يوجد فيها نظم محددة

تضمن بها الجودة والرقابة عليها، فإن صناعة البصريات لا تزال بعيدة عن ذلك. ففي الوقت الحاضر يبقى هذا النقص موجوداً. ويستشعر السيد پويا بأن النظم الرقابية متى ما طبقت فإن العمل سيكون صعب، ومع ذلك فإن إيجما فعلاً تتبع المعايير والنظم العالمية. إنه يعتقد أنه من الصعب أن تكون مرخصاً بحيازتك لتلك المعايير لكن الأمر يستحق أن تستحدث مؤسسة أو هيئة لمراقبة الجودة.

■ لا شك في أن الرجل القادم من الجيل الثاني في مجموعة إيجما ملتزم بعمله، فأبواب مكتبه المفتوحة على الدوام ومهاراته الشخصية في التواصل الودي، وكذلك الجو العائلي مع فريق عمله البالغ عددهم ٧٠ موظفاً إنما هي دلائل تؤكد على إنجازاته ونجاحه. فهو يؤمن أن المال ليس كل شيء إنما الناس فتبقى. وبالنسبة إليه، فإن ذلك هو أفضل درس في العالم يريد أن يشارك فيها جميع الناس. وبالإضافة إلى كل ذلك، فإن سر نجاحه يكمن في عشقه لعمله. ويستذكر مقولة الشهير دونالد ترامب: يجب عليك أن تحب ما تعمله حتى تتجح فيه.

■ بسؤاله إن كان هذا العشق يسري في عائلته هو، هل يمكن أن يستمر هذا التراث في أولاده؟ يجيب السيد پويا مؤكداً: "لا تردد في ذلك على الإطلاق." ويؤكد على أنه سوف يمرر تراث إيجما إلى أكبر أبنائه والذي يبلغ من العمر تسع سنوات. إنه يأخذه معه إلى مكتبه في أيام العطل الدراسية، ويستطيع السيد پويا أن يرى بوضوح أن ابنه يستمتع بذلك، ويستمتع بوجوده في المكتب. في الواقع، إنه يرى نفسه في ابنه عندما كان في مثل عمره - وللحقيقة إنها إشارة جيدة إلى أن التراث سوف يستمر ويستمر.

■ لا عجب أن الشغف في البصريات يسري في دم عائلة إغترافي. يقول السيد پويا أن الدروس التي تلقاها من والده منها الأمانة، الولاء والصبر هي من ضمن نفس القيم التي سوف يمررها إلى أبنائه. ويختتم حديثه بأن والده إتصف بالحكمة وشغف وإبداع الشباب، وبالنسبة له - وكذلك بالنسبة لنا - فإنه مزيج عظيم.

Masters at work

Poya Eghterafi: Continuing the EGMA Legacy



■ In the Middle East's optical industry, the word "Egma" does not need further introduction. Everyone knows about it – the industry recognizes it with great understanding and respect. And, that high level of recognition in this market is attributed to two amazing individuals that helped shaped the industry: the Eghterafis.

■ The company that was previously known as EGMA Lens Factory, now more aptly called as EGMA Optical Supplies, trails back its rich family-owned history from two wise and passionate men in the optical world: Mr. Zia Eghterafi and Mr. Poya Eghterafi. Mr. Zia is the one who founded it in 1975 while Mr. Poya continues on today with the legacy of his father.

■ In Eye Zone's exclusive chat with Mr. Poya, he said that being the second generation to run the business was not an obligation for him. While his only brother became a lawyer, he on one hand personally wanted to take part in the development of EGMA. Looking back, he remembered growing up in their factory' in Saudi Arabia. As a young boy visiting regularly, the laboratory used to be his playground as he learned how to grind lenses. This actually prompted the beginning of his passionate take in optics.

■ But it was in 1995 when Mr. Poya officially joined the company running the storeroom, handling product management, accounting inventories, and incorporating new technologies in the decades-old business. Then, in 2000, EGMA decided to move its location to Dubai for more logistics capability.

■ Mr. Poya mentioned that it was an easier move since the ease of business processing in the emirates helped in establishing a fertile ground to their new headquarters. The experience he had in building the factory allowed him to learn a lot of things, and paved the way for committing more professional way and avoiding lesser mistakes in establishing their sec-

ond factory in 2002.

■ Taking a retrospect in his professional career, Mr. Poya told us that he is most proud of his share in education. He told Eye Zone that he is pleased that he had been an instrument of even a tiny part in educating optician on higher level of optics. In EGMA, they conduct a number of training courses to train opticians, optometrists plus sales people on the art of selling lenses.

■ Mr. Poya continued to share that the lens specifically is the most boring item to be sold if one salesperson is looking for an exciting item to sell. But for him, it is the other way around. In fact, it is very exciting, as it is challenging. Mr. Poya explained that he tries to be creative and put up new ways in introducing the lens, in introducing it in a way that they will be able to convey the message to the optical industry and in turn to the end consumer.

■ He recalled the times when he felt quite proud when opticians would call and ask for specific types of progressive lenses. Apparently, the continuing education that he and EGMA initiated was paying off in imparting knowledge to the optics professionals. He said that those were the exact moments when he actually felt proud.

■ Aside from this, Mr. Poya would consider that his major achievement as the main man in EGMA is the company's ability to introduce Rodenstock and build it as one of the biggest players in the Middle East. He laughingly shared that here in the Middle East, he is quite known as Mr. Rodenstock.

■ This amazing relationship of EGMA and Rodenstock would witness more projects this year, to be unveiled in the upcoming Vision-X exhibition in Dubai. According to Mr. Poya, this year is amazing for him and the whole lens industry as it would see the launching of new pre-form technology in Vision-X. This is a full

transformation of what EGMA can offer to customers as there is no more I will order for you in Germany.

■ Any kind of lens that can be produced in Germany will be produced here. There will be no delay, but still with the same kind of quality assured by Rodenstock. He assured us that this is the biggest thing. New progressive design, new materials, new products – it's a lens year for every one indeed.

■ On the other hand, in distribution front, EGMA would announce n Vision-X the latest products Porsche design and dunhill eyewear as well as Mercedes Benz that will soon be in the market.

■ Despite the apparent success, Mr. Poya was well aware of the challenges he continuously faced in the industry. He quipped that in the lens business, there is nothing written, no rule to follow, which leads to being more creative. In his own words: How would you describe a transparent piece of plastic and how do you make it exciting?

■ He furthered in the thought that in EGMA, they distribute very high end products but somehow in that part of the business, the story is already told by the brand and they just need to promote it. But in lenses per se, the story is not yet written and understood by all. It is not that easy to understand, and sometimes there is no story at all. So, how to convey these to the optician and to the end consumer is very interesting challenge to Mr. Poya and to his team.

■ Another interesting challenge that he would like to see some changes is the lack of control and regulations in the industry. Unlike in other countries where specific regulations guarantee quality and control, the optical industry in the region is still quite far from this. He explained that at present the industry lack control and regulations. Mr. Poya understands that if the regulations are implemented then it is going to be hard job. But he assured that even now, EGMA al-

ready follows international standards and regulations. He believes that it will be hard work to get certified but it will be worth if the industry can initiate an association or union to control what is good quality or not.

■ Indeed, the man behind the second generation of EGMA is clearly involved in his business. His open office management style and his ability to incorporate friendly, family culture in his 70-member staff would be testament to his achievements and success. Mr. Poya is the kind of man who believes that money is not everything but people stay. For him, it is the most important lesson in the world that he can teach anyone. Moreover, his secret to success is his love for what he does. As he quoted the infamous Donald Trump: you should love what you do to succeed in it.

■ Is this love in optics rubbing off to his family? Asking him if he would pass on the legacy to his children, Mr. Poya nodded with an affirmative answer, no hesitation at all. He exclaimed that yes, he will pass on the EGMA legacy to his eldest son who is now nine years old. He takes him to the lab and to the office whenever he is on school holidays. Mr. Poya can see that his son loves it, and enjoys being in it. In fact, he can see himself in his son when he was young self in him – indeed a good sign that the legacy will continue on and on.

■ No wonder, passion for optics runs in the Eghterafi blood. Mr. Poya told us that the lessons he learned from his father – honesty, loyalty and patience – are the same things that he would pass on to his sons. He concluded his retrospection that his father has the wisdom. But, he had the passion and creativity as a young one. And, for him – and we believe – that it is of great combination.

turn up the dark



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في السيارة



في الداخل



المزيد من التعيم في الخارج



جديداً

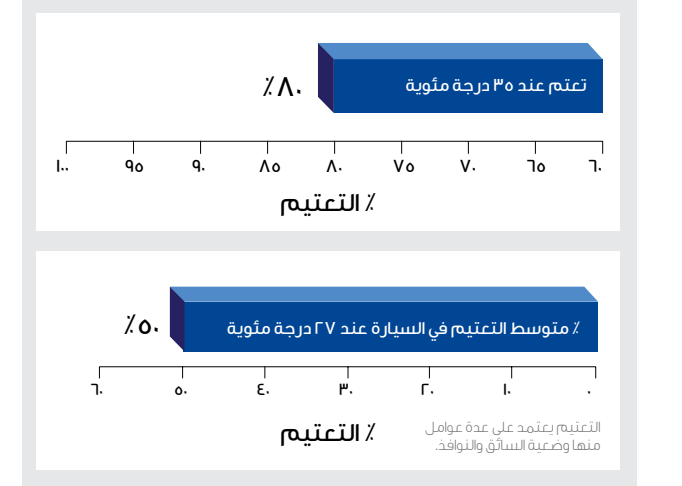
نضيف إلى ترانزشنز VI،

Transitions® XTRActive™

عدسة ذات تعيم إضافي للإستخدام اليومي، تعتم أيضاً داخل السيارة

المزيد من المزايا

Transitions VI	Transitions XTRActive™	
●	●	تعتم في الخارج
●	●	تحفف الوهج
●	●	تحجب 10٪ من الأشعة فوق البنفسجية
●	●	عدسة شفافة في الداخل
	●	تعيم قليل في الداخل
	●	تتغل إلى حد ما في السيارة
	●	تعتم إلى حد كبير في الخارج
●		أسرع عودة إلى حالة الشفافية
●	●	باللون الرمادي
●		باللون البني



Tell your clients to **turn up the dark** with Transitions XTRActive lenses – by far our darkest everyday lens ever. They even darken inside a car and fade back indoors. The newest addition to the line of Transitions adaptive lenses.



new... Transitions® XTRActive™
ADAPTIVE LENSES

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للمزيد من المعلومات زوروا موقعنا: www.transitions.com أو www.transitionsXTRActive.com

ترانزشنز والسوبريل هي علامات تجارية مسجلة لشركة ترانزشنز أوبتيكال، ٢٠١٠. شركة ترانزشنز أوبتيكال.

High sales time for Transitions Lenses

Glare is caused by an excess of light and results in difficulty seeing. This can range from annoyance or discomfort to visual impairment, and is a significant threat to proper vision. Glare is a year-round problem, but it can be particularly troublesome in the winter months. Whether it's the shorter days, longer nights, or reflections from snow, ice and wet surfaces, winter glare can get in the way of seeing your best.

Shorter Days

The winter months mean shorter days. The sun rises later in the morning and sets earlier in the evening. Unfortunately, these altered times for sunrise and sunset often correspond to times when we are out and about. People coming to and from work often have to deal with the sun when it is lower in the sky, and are more likely to find the glare from the low sun distracts them or impedes their vision.

Longer Nights

The winter months also have longer nights relative to other seasons. This means more of our time spent outdoors is during the night time, in lowlight conditions, which poses other challenges for seeing well. Glare from bright lights, such as street lights or headlights from cars, can be distracting.

Focusing the eye can be more difficult in these situations, and may lead to squinting and eye fatigue.

Reflected Light

Snow and wet surfaces reflect the sun's rays, creating additional sources of glare that can reduce vision on sunny winter days. Because of this, we often have two sources of glare to worry about in the winter: direct

glare from the sun, and indirect glare from reflections.

In some cases this may be a simple distraction, but it can also cause squinting and lead to eye fatigue.

Transitions Lenses protect against Glare and UV Rays

Winter glare makes seeing in the winter more difficult, and exposure to UV rays can damage the eyes and lead to vision impairment. Being aware of these dangers makes it easy to understand the benefits of Transitions Lenses during the winter months:

Transitions Lenses are adaptive lenses that block 100% of harmful UV rays to protect your eyes everyday.

They are perfectly clear indoors to give you the best of your sight.

When going outdoors they automatically adapt to light conditions to protect you against glare and enhance your vision.

Transition Lenses don't just correct your vision, they also protect your eyes and help you see better in changing light conditions. Transitions Lenses are available for all prescription types and designs, making them an ideal solution in almost any situation.

Present

Training Seminar

During Vision X Dubai from 24 May to 26 May

by



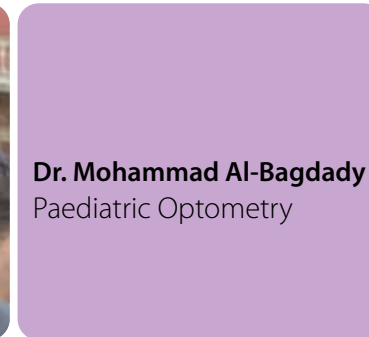
Dr. Aisha Natto
Selling Optical Lenses



Florian Zwink
Rodenstock
Free Form Technology



Dr. Mohammad Al-Bagdady
Paediatric Optometry



Dr. Aisha Natto
Selling Optical Lenses

Seminar Schedule					
	11:00 AM - 11:45AM	12:00 PM - 12:45PM	1:00 PM - 1:45PM	3:00 PM - 3:45PM	4:00 PM - 4:45PM
Tuesday 24 May 2011	Florian Zwink Rodenstock Free Form Technology	Dr. Mohammad Al-Bagdady Paediatric Optometry	Dr. Aisha Natto How to Sell Optical Lenses (Arabic)	Florian Zwink Rodenstock Free Form Technology	Dr. Mohammad Al-Bagdady Paediatric Optometry
Wednesday 25 May 2011	Florian Zwink Rodenstock Free Form Technology	Dr. Mohammad Al-Bagdady Paediatric Optometry	Dr. Aisha Natto How to Sell Optical Lenses (Arabic)	Florian Zwink Rodenstock Free Form Technology	Dr. Aisha Natto How to Sell Optical Lenses (Arabic)
Thursday 26 May 2011	Florian Zwink Rodenstock Free Form Technology	Dr. Mohammad Al-Bagdady Paediatric Optometry	Dr. Aisha Natto How to Sell Optical Lenses (Arabic)	Florian Zwink Rodenstock Free Form Technology	Dr. Aisha Natto How to Sell Optical Lenses (Arabic)



THE DANGERS OF UV & GLARE

IN THE WINTER MONTHS

High sales time for Transitions Lenses

The winter months are a challenging time for vision. On one hand, the eyes need protection from glare caused by reflections from bright or wet surfaces, especially when the sun is low in the sky. On the other hand, with fewer daylight hours, the eyes need the maximum amount of light possible during low-light conditions. Not surprisingly, many people turn to Transitions Lenses during the winter months to help them protect their eyes while seeing their best. This makes the winter a high sales time for Transitions Lenses.

To help you introduce the benefits of Transitions Lenses to your customers, recall that these lenses are everyday clear lenses that do more:

Block UV rays

Transitions Lenses protect your eyes by blocking 100% of harmful UV rays

Clear Indoors

Transitions Lenses are perfectly clear indoors to help you see your best

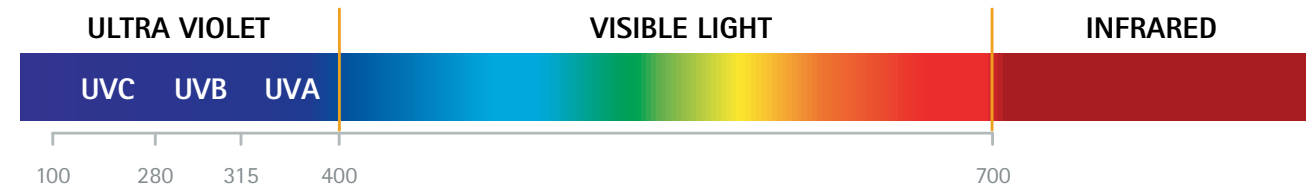
Adapt to Light

Transitions Lenses automatically adapt to changing light conditions outdoors to protect against glare and enhance your vision

UV Rays: An invisible danger

Ultraviolet (UV) rays have short wavelengths that make them invisible to the naked eye.

They are typically divided into 3 different groups:



- UVA: 315-400 nm**
- UVB: 280-315 nm**
- UVC: 100-280 nm**

UVC rays are typically filtered out by the ozone layer of the atmosphere, but UVA and UVB rays reach the earth's surface and can cause serious damage to unprotected eyes.

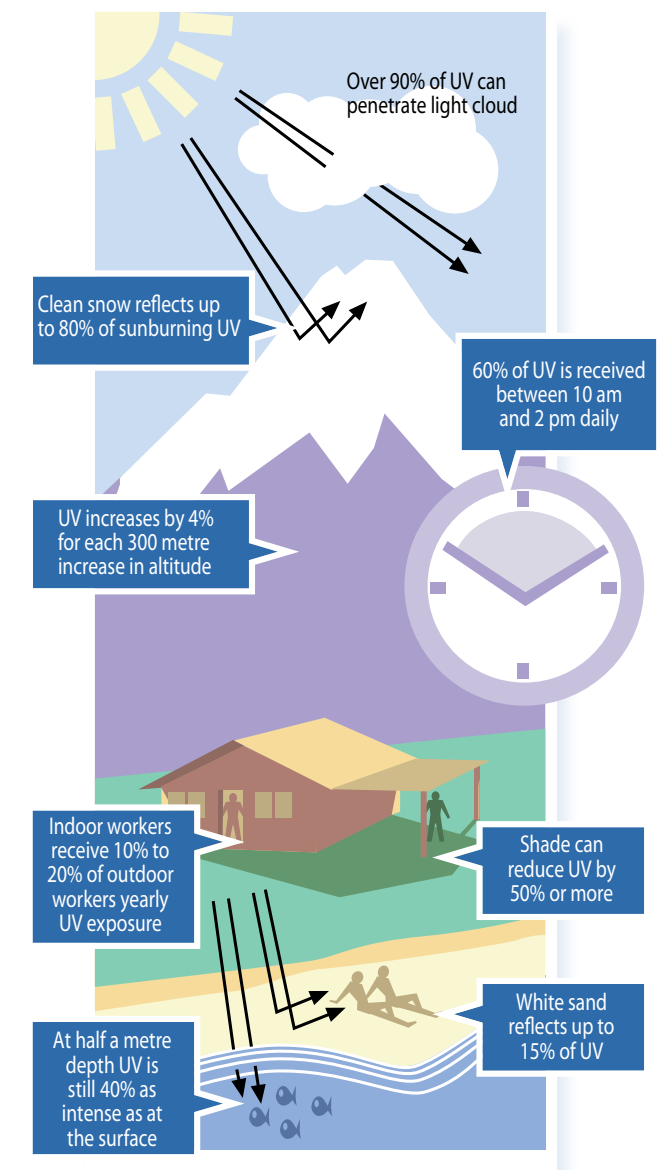
In fact, over 90% of UV rays can pass through light cloud cover.

These harmful rays are reaching our eyes all the time, even when it is raining or cloudy.

Because of this, damage from UV rays is sometimes underestimated in the winter months, when it is snowing, raining, cloudy or grey.

In addition, snow doesn't just reflect visible light; it reflects UV rays as well. With fresh snow, up to 80% of UV rays can be reflected. This means that on snowy winter days we can be exposed to UV rays not only directly from the sun, but also indirectly from UV rays reflected by snow all around us.

Knowing the dangers that UV rays pose for healthy vision, make sure not to underestimate UV in the winter months. Remember that eyes require constant protection against this invisible danger!



THE 11TH CHINA (SHANGHAI) INTERNATIONAL OPTICS FAIR Shanghai Everbright Convention & Exhibition Centre

18th – 20th February 2011



The 11th edition of the China (Shanghai) International Optics Fair (SIOF 2011) heralded its exciting closing after unveiling for 3 days. SIOF 2011, the Asia's premier and largest optical fair, was endorsed by the Ministry of Commerce, P.R. China, organized by the China Optometric & Optical Association and China Light Industrial Corporation for Foreign Economic & Technical Co-operation and co-organized by Orient International Exhibition Co., Ltd.

As a matter of fact, the organizer are happy to announce that both the China International Optics Fair (CIOF) & the China (Shanghai) International Optics Fair (SIOF) have been officially endorsed by the Ministry of Commerce, P.R.China as two of the important and distinguished exhibitions of China.

The 3-day fair has successfully attracted 44,000 traders and buyers entries from 77 countries and regions, reaching a remarkable number as compared with last year. This year, 694 exhibitors occupied a 38,000 square meters exhibition area. Actually there were 247 companies with international brands from China, Australia, Austria, Canada, Denmark, France, Germany, HKSAR, Holland, Israel, Italy, Japan, Korea, Singapore, Spain, Switzerland, Taiwan Region, Thailand, the United Kingdom, the United States. Amidst the exhibitors include the domestic pavilions of various production bases of China from Wenzhou, Xiamen & etc, Hong Kong Pavilion formed by the Hong Kong Optical Manufacturers Association and the overseas pavilion by SILMO exhibition of France.

With global economic recovery as well as the noticeable effect of China's policies of bolstering consumption and demand, China's drastically dropping import & export of optical items have seen improvement in 2010. According to customs statistics as of January to July 2010, China's export of optical products was valued at USD 1.65 billion, registering a growth of 28.8%, as compared with the same period the year before. Whilst

the import amounted to USD 207 million, increased by 54.08% over the same period of the precious year, this has reinforced that China's optical market has proven resilient against the slowing trend of global economy and confirmed the huge consumption power of the Chinese. To fulfill the exhibition space demand from exhibitors who are very eager to share in this growth, the organizer has used all the exhibition areas of the center: the West Hall, East Hall and built an Outdoor Hall plus all the function rooms in the adjacent Shanghai Everbright Hotel. Nevertheless, the organizer has to limit and squeeze the size of exhibition booth requested by exhibitors so as to accommodate as many companies as possible to exhibit in the fair. Although making such measures, there are nearly a hundred local and overseas enterprises unable to get space.

To illustrate and confirm the positive support from exhibitors, shown below are the world-renowned and local brands of different categories in our fair: 18K GOLD SUPREME, A.V.V., ADIDAS, ALAIN DELON, ALEXANDER MC QUEEN, ALFRED DUNHILL, AMANI, ANNE ET VALENTIN, ARMANI EXCHANGE, ARROW, ASAHI, BALENCIAGA, BALENO, BARBIE, BAYER, BERLAC, BIO LUC THIN, BMW, BOLLE, BOSS HUGO BOSS, BOTTEGA VENETA, BRIOT, BRIOT/WECO, BUGATTI, BUICK, BYBLOS, CALVIN KLEIN, CALVIN KLEIN-CK, CANON, CARRERA, CELINE, CHAROPS, CHARRIOL, CHASE DIAMOND, CHOPARD, CHROME HEARTS, COACH, COBURN, DAC VISION, DIOR, DONG YANG, ED HARDY, EFE, ELEGANCE, EMILIO PUCCI, EMPORIO ARMANI, ERMENEZILDO ZEGNA, ESCADA, EUCLID, EURACOAT, EVISU, EXALTO, EXTE, FACE A FACE, FENDI, FRATEMA, FRED, FURLA, GIORGIO ARMANI, GIVENCHY, GOLD & JEWELRY COLLECTION, GRAND SEIKO, GUCCI, HELLO KITTY, HOYA, HUGO HUGO BOSS, HUVITZ, HYDRON, INDO, ISSEY MIYAKE, J.FREY, JEEP, JHANE BARNES, JIMMY CHOO, JUICY COUTURE, JUST CAVALLI, KANSAI, KARL LAGERFELD, KOOKI, LACOSTE, LAFONT, LEGO, LEVI'S, LEYBOLD OPTICS, LINDBERG, LOEWE, LOTTO, LUNETTERIE, M MISSONI, MA-JI, MASATOMO, MARC

BY MARC JACOBS, MARC JACOBS, MASUNAGA, MAX MARA, MAX&CO., MCGREGOR, MECCANOTTICA MAZZA, MEI, MERCEDES BENZ, MIKA, MILA SCHÖN, MINI COOPER, MINIMA, MISS SIXTY, MIZUNO, MYKITA, NAUTICA, NEW BALANCE, NEXUS, NIDEK, NIKE, NINE WEST, NOMAD, NORVILLE AUTOFLOW, OPTISAFE®, OXIBIS, PAL ZILERI, PHANTOM®, PICHINA, PIERRE BALMAIN, POLAROID, POLICE, PORSCHE DESIGN, PORTS, POTEK, PRO-CLEAR, PRODESIGN, PUMA, REICHERT, RENOMA, RICH-DOME, ROBERTA DI CARMERINO, ROBERTO CAVALLI, RODENSTOCK, ROMEO GIGLI, ROTLEX, RUDY PROJECT, S.T. DUPONT S.T., SAMBO TECH, SANTA MONICA, SATISLOH, SCHNEIDER, SCHUMAN, SEIKO, SENJU, SERENGETI, SHIN-NIPPON, SHISEIDO, SILHOUETTE, SISLEY, STERLING ULTRA PRECISION, SYNERGY, TAG HEUER, TAKAGI, TED LAPIDUS, TOMEY, TOMMY HILFGER, TONYSAME, TOPCON, TRANSITIONS, U.S. POLO ASS'N, UNICOS, UNITED COLORS OF BENETTON, VALENTINO, VERA WANG, VISIONIX, WECO and YVES SAINT LAURENT. Furthermore, it is noteworthy that BOLLE, JEEP, LOTTO, YOUNGER OPTICS, LOADPOINT make their debut appearance alongside with Safilo and Buick who made their prodigious participation again at SIOF 2011. Without doubt, 3D Glasses displayed in the fair also attracted the eyeball of participants for its profound business potential on the horizon. Moreover, traders and buyers can check national or regional prestigious product trademarks of China in the halls, they are Balong, Cobra, Conant, Honsun, Jinggong, Lixin, Tornado, MCT, Ming Yue, Parim, Porpoise, Prosun, Riccino, SS Pair, Surjel, Wan Xin, Weixing, Xinyuan and Yingchang. Additionally, a catwalk show to present the latest optical trend has won a great applause from the traders and buyers in the dinner party co-hosted by the organizer and the co-organizer.

In spite of their busy schedule, trade visitors and buyers crowded the conference rooms to attend 4 technical seminars, which are presented by Satisloh Ltd for 3 different topics and by Shanghai Chemat Advanced Ceramics Technology Co., Ltd. for its specialty. Beside the technical seminars, trade visitors and buyers also exulted on the introduction of the standardization for China and International Optics Industry as well as the presentation of the current economic situation of China

& worldwide by Madam Ren Xing-zhou of the Development Research Centre of the State Council of China. The organizer will keep on organizing this kind of seminars to let the industry know the latest development and trend of China and her optical market!

In retrospect, China's optical industry had enjoyed a fast growth in the 11th Five-Year Plan for Economic and Social Development of the country. In 2010, the aggregated industrial output of COOA's members reached Rmb35 billion and the export of China's optical industry was US\$3 billion, and the average annual growth rate of COOA's members and the export of China's optical products over the 11th Five-Year Plan were 13% and 20% respectively. As the year 2011 marks the beginning of China's implementation of the 12th Five-Year Plan for economic and Social Development, Chinese Optical Industry will leap forward into a new era facing the need to change the mode of development, the responsibilities of adjusting product structure and upgrading production. Moreover, China Optometric and Optical association will make use of SIOF as a platform to strengthen the exchange and cooperation with the local and international counterparts to enhance and improve the optical industry together. Anticipating the opportunities embedded in the 12th Five-Year Plan for China's optical industry, SIOF will be the most unparalleled platform to grasp the vast business potentials in the booming lucrative China optical market and will perform as the efficient platform for worldwide buyers sourcing and procuring the most sought-after optical products and equipment! The 12th edition of SIOF will be held on 22nd to 24th February 2012.

Another cannot-be-missed optical exhibition is SIOF's sister Autumn Fair, the forthcoming 24th China International Optics Fair (CIOF 2011), which will be held on 14th – 16th September 2011 at China International Exhibition Centre, Beijing, China.



Industry eyes Dubai

Vision-X Dubai offers definitive regional platform to the industry

OFFICIAL SHOW
PREVIEW
Dubai International Convention and Exhibition Centre
24 - 26 May 2011
www.vision-x.ae



Vision-X Dubai, taking place 24 - 26 May 2011, is the leading exhibition in the ophthalmic industry to highlight preventative optical care and the latest consumer eyewear trends.

Ophthalmic and optometry professionals from more than 63 countries are setting their sights on Dubai for the Vision-X Dubai exhibition, which takes place from the 24 - 26 May 2011 at the Dubai International Convention and Exhibition Centre. The three-day event brings together leading international companies and industry professionals to network, conduct business and keep abreast of key ophthalmic issues in the region.

Segmented into two areas, Vision Opticare and Vision Lifestyle, Vision-X Dubai incorporates the full spectrum of eye care. Vision Opticare will showcase the latest medical Ophthalmic, Optometric and Technical Equipment and Machinery, while Vision Lifestyle will focus on innovations and trends in Eyewear Fashion and Accessories.

"Eye care is an increasingly important element in this region, both from a medical point of view with the prevalence of diseases such as diabetes, and from a protection perspective against harsh climatic conditions. Vision-X Dubai is the most influential platform for both ends of the optical spectrum to showcase developments, products and services for the MENA markets," said Trixee Loh, Senior Vice President, Dubai World Trade Centre, organiser of Vision-X Dubai.

Marwan Asad, General Manager, Barakat Optical, said: "Vision-X Dubai is a great opportunity to launch the new technologies of optical instruments and machines to the region, and an important event for us to meet new customers from all over the region every year."

Industry leaders that have confirmed their participation at Vision-X Dubai include Platinum Sponsor Egma Lens,

Bakarat Optical, Future Optics, Johnson & Johnson, Lomic, Maui Jim Middle East and Oscar Optics. The Vision-X Dubai fashion show also returns this year, showcasing the latest and most stylish eyewear products to be launched globally.

Country pavilions at this year's exhibition will include a host of first time exhibitors, including Satisloh, Nigura and Wagner & Kuehner from Germany; Essilor International, Parasite Design, Grosfilley Lunettes and Lookvision from France; and pavilions from Italy and Germany, which have expanded to showcase the latest in luxury eyewear.

"Vision-X Dubai is the most comprehensive event in the wider Middle East for the ophthalmic industry and brings together some of the most illustrious companies not just from this region but much further afield. The international attendance makes this an excellent prospect for eye-care professionals and those who work in related fields to either explore the region for the first time or look at expanding their business," said Colin D'Cruz, Chief Operating Officer, Charmant Gulf. "As one of the major exhibitors at Vision-X Dubai, Charmant Group has been renowned worldwide in the optical market for their pioneering work in research and development of new technologies.

Striving for perfection and high quality throughout their products, the company has grown into one of the most important organisations in the eyewear industry. Vision-X Dubai is a great opportunity for us to showcase our innovation and demonstrate exactly why we are a leading company in this sector."

Taking place alongside Vision-X Dubai is the 6th Vision-X Dubai Conference, which is co-organised by Dubai World Trade Centre and the Emirates Medical Association Ophthalmic Society (EMAOS), to be held on 24 May. Delegate Prices are AED 200 for EMAOS Members and AED 300 for non-members. The conference will host prominent international figures in ophthalmology who will concentrate on topics such as advances in cornea refractive surgery and present video sessions on complex eye surgeries.

Visitors can also attend on-site workshops from leading exhibitors including Johnson & Johnson on May 25, as well as free to attend daily seminars from Egma Lens, showcasing their new range of products and services for the Middle East.

Many new launches will take place throughout the event, as well as the latest brands and trends of fashion eyewear from around the world, and can be experienced through the twice-daily Vision-X Dubai fashion shows.

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www.vision-x.ae

قطاع البصريات يتطلع إلى دبي

فيجن إكس يشكل منصة إقليمية لقطاع البصريات



يقام فيجن-إكس دبي، الحدث الرائد في قطاع طب العيون، بين ٢٤ و٢٦ مايو ٢٠١١، وسيبسط الضوء على الرعاية البصرية وأحدث توجهات المستهلكين.

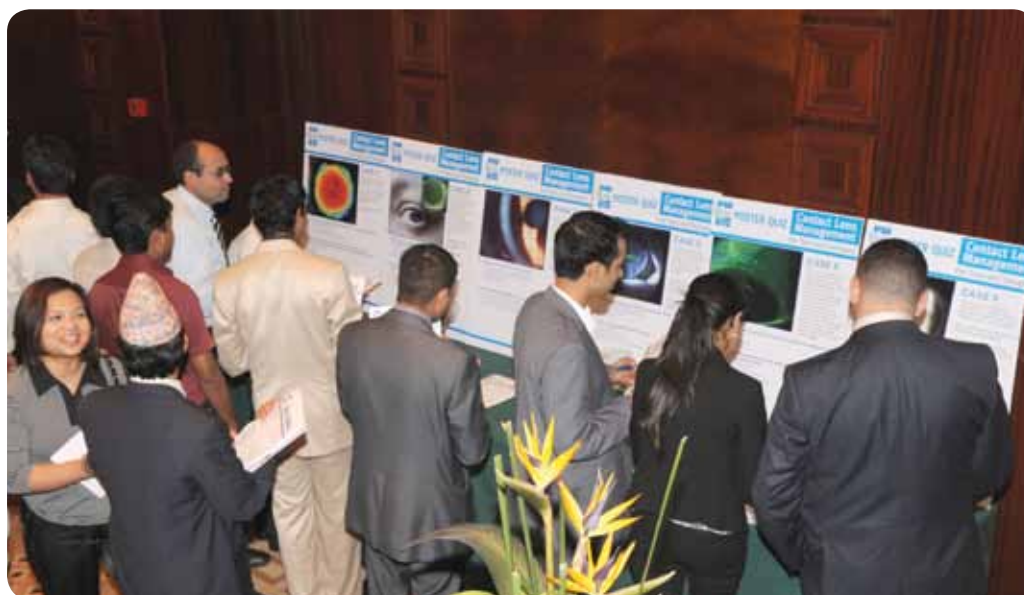
يقام على هامش الحدث في ٢٤ مايو مؤتمر فيجن إكس دبي السادس، الذي يجري تنظيمه بالتعاون بين مركز دبي التجاري العالمي وشعبة العيون بجمعية الإمارات الطبية. يوفر هذا المؤتمر أرضية ملائمة لتسليط الضوء على أهم المسائل التي تواجه القطاع ومن أبرزها الجراحات الانكسارية، وأحدث التوجهات في مجال علاج العيوب الانكسارية، كما يتضمن المؤتمر عروض فيديو للعمليات البصرية المعقدة، كلفة حضور المندوبين ٢٠٠ درهم لأعضاء جمعية الإمارات الطبية و٢٠٠ درهم لغير الأعضاء، ويستضيف الحدث عددا من الندوات وورش العمل التعليمية التي تؤمن منبرا تفاعليا يتيح أمام الزوار اكتساب المعرفة والاطلاع على الأبحاث التفاعلية والتطورات التقنية، من بينها ورشة عمل جونسون أند جونسون في ٢٥ مايو، بينما تقدم إيغما لينس ندوات مجانية يومية تستعرض من خلالها أحدث منتجاتها وخدماتها لمنطقة الشرق الأوسط، وسيختلل الحدث تديشين عدد كبير من المنتجات للمرة الأولى، إضافة إلى عرض الموضة الخاص بالنظارات الذي سيقام مرتين يوميا لاستعراض أحدث العلامات والمنتجات من حول العالم.

أما الأجنحة الوطنية في معرض هذا العام فسوف تضم مجموعة من الشركات المشاركة للمرة الأولى، منها كل من ساتسلو، ونيفيورا، وروانغر أند كيونر من ألمانيا، وإسبلور العالمية، وبراسايت ديزاين، وغروسفيلي لونيت، ولوكفيجن من فرنسا، فيما جرى توسيع لجنة لمانيا وإيطاليا لعرض أحدث منتجات العيون الرقيقة. واعتبر كولين دي كروز، رئيس العمليات في مجموعة شارمانت الخليج، أن معرض فيجن إكس، هو أكثر الفعاليات المتخصصة في قطاع البصريات شمولا في منطقة الشرق الأوسط، فهو يجمع عددا من أشهر الشركات وأقوى الأسماء العالمية في هذا القطاع، وقال: «إن الحضور العالمي في المعرض يجعله وجهة حيوية للخبراء والمهنيين العاملين في قطاع العناية بالبصر». وأضاف دي كروز: «تعتبر مجموعة شارمانت من أكبر العارضين في فيجن إكس دبي، ولطالما اشتهرت في أرجاء العالم في مجال البصريات بعملها الريادي لا سيما في مجال الأبحاث حول التقنيات الجديدة والتطوير، وبشكل خاص في مجال البصريات المتخصصة، ونظارات أوسكار. كما يعود في معرض هذا العام عرض الموضة الخاص بالنظارات ومنتجات العيون التي سيجري طرحها إقليميا وعالميا في الحدث.

مركز دبي التجاري العالمي، أن قطاع الرعاية البصرية بات متزايدا الأهمية في جانبه الطبي مع شح أمراض العصر كالسكري، وجانب حماية العيون من الظروف المناخية القاسية، وقالت: «يلعب معرض ومؤتمر فيجن إكس دورا حيويا في تسهيل الأعمال والعلاقات التجارية بين الشركات ومختلف الجهات ذات الصلة، إلى جانب ما يتيح من تبادل للمعلومات وأحدث الخبرات على كافة المستويات عبر منطقة الشرق الأوسط وشمال إفريقيا». من جهته، قال مروان أسعد، المدير العام لدى بركات للبصريات: «يشكل فيجن إكس دبي فرصة مثلى لطرح والاتصالات البصرية الجديدة على المستوى الإقليمي واستعراض تقنياتها، ويمثل الحدث فرصة سنوية هامة بالنسبة لنا، للقاء العملاء الجدد من مختلف أنحاء المنطقة». من الشركات المشاركة في فيجن إكس هذا العام إيغما لينس، التي تشارك كراع بلاستي، وبركات للبصريات، ونظارات المستقبل، وجونسون أند جونسون، ولوميك، وماوي جيم الشرق الأوسط، ونظارات أوسكار. كما يعود في معرض هذا العام عرض الموضة الخاص بالنظارات ومنتجات العيون التي سيجري طرحها إقليميا وعالميا في الحدث.

يجمع في دبي خلال شهر مايو المقبل خبراء ومختصون بقطاع طب العيون ومختلف المهن البصرية من ٦٣ دولة للمشاركة في فعاليات معرض ومؤتمر فيجن-إكس دبي للبصريات ومنتجات العناية بالعيون، الذي يقام بين ٢٤ و٢٦ مايو في مركز دبي الدولي للمؤتمرات والمعارض، وهو يشكل منصة راسخة تحظى باعتراف دولي، تتيح للمشاركين بها إيجاد فرص تجارية مهمة في المنطقة وللناطق المجاورة وتمكنهم من الاطلاع على أحدث المستجدات الإقليمية في قطاع البصريات. ستقدم الدورة الثانية عشرة من الحدث للمختصين فرصا واسعة للاطلاع على أحدث التوجهات وأفضل الممارسات في كل من السياق الطبي وسباق الموضة والجمال عبر قسمي الحدث: «فيجن أوبتيكير» و«فيجن لايف ستايل» اللذين يشاركون فيهما عدد كبير من الشركات المختصة في كلا المجالين. سيستعرض قسم «فيجن أوبتيكير» أحدث الآلات والمعدات التقنية لقطاع البصريات، بينما يتناول قسم «فيجن لايف ستايل» أحدث الإبداعات والتوجهات في مجال منتجات العيون وأكسسواراتها. واعتبرت تريكسي لو، النائب الأول للرئيس في

Johnson & Johnson Vision Care Road Show in Gulf Region Teenagers, Communication and Contact Lenses



Contact Lens Poster Quiz

In pursuit of educational campaign, Johnson & Johnson Vision Care recently conducted a three-day consecutive road show in the following Gulf key cities: Dubai, Abu Dhabi and Kuwait started from April 26 till April 28, 2011. Eye care professionals, front staff personal and sales professionals attended these road show events organized by the Johnson & Johnson Vision Care in Middle East to learn about the latest findings in the area of teenagers and contact lenses as well as find out about different ways and strategies to communicate with potential contact lens wearers. A total of more than 400 attendees came to these three events in three different cities

The road show started first in Dusit Thani Hotel in Dubai before moving the next day to the city of Abu Dhabi. More than 150 attendees came that night of April 26th, 2011 to witness these breakthrough and highly educational presentations delivered by well known experts in their respective specialties. The participants were welcomed in a well-decorated venue which included a special corner for the Vision Care Institute® where interested individuals went there and collected information about the upcoming courses that the Institute delivers on regular basis. The courses include about communication, contact lens management, astigmatism, health and hygiene as well as many other courses. The objective of these courses is to keep the eye care professionals and their support staff informed with the latest technologies and scientific knowledge. The second corner was dedicated for the ACUVUE® newly launched website. The participants had the opportunity to navigate

through the website www.acuvuearabia.com specially designed for the consumers whereas the other website www.jnj.visioncare.ae specially dedicated for the eye care professionals to go there to download information about different types of ACUVUE® family of contact lenses as well as find out the recent updates in the field of eye care and contact lens management. The third corner was a display section for all the marketing tools developed by Johnson & Johnson/ Vision Care ranging from posters to all the way to the consumer educational program that has been launched recently under the name of the Eye Health Advisor™ that includes six consumer friendly leaflets which

cover about different topics related to eye care, contact lens management, the damages that can be caused to the eye by the harmful ultraviolet rays and ways to protect and many others. Furthermore, there was a section where the attendees spent time to answer poster examination related to challenging cases in the field of contact lens care.

The event started with a short presentation delivered by Dr. Gurdeep Singh, a Consultant Pediatric Ophthalmologist from The City Hospital in Dubai. He provided hospital-based cases where contact lenses played a major role in managing those cases



Mr. Colin Abercrombie delivering his presentation

The second speaker was the main speaker of the event who was Professor Christina Grupcheva, currently National Professor at the Medical University of Varna in Bulgaria. She is a regular speaker in the major conferences in Europe such as European Contact Lens Society of Ophthalmology and British Contact Lens Association Yearly Conferences. She delivered the night's much-awaited presentation. Given her vast experience in the field of ophthalmology, she is very well-knowledgeable on the matter of offering contact lenses to teenagers. As she began her talk, she first showed a lively video presentation that actually caught the interest of the audience. Through that video, she noted that contact lenses for teenagers is not mission impossible. In fact, on the contrary, it is a mission highly possible.

In her presentation Professor Grupcheva showed in details the science and clinical values of offering contact lenses to the teenagers. The professor mentioned that teenagers these days want to have a good vision and they want to look good at all times which means they try in any way possible to avoid wearing spectacles. Therefore, the major considerations in encouraging them to use contact lenses are vision, looks, activity and parental approval. Furthermore, her talk highlighted

that those teenagers who wear contact lenses score higher in the areas of activities, satisfaction and appearance as shown in different recently published researches.



Professor Christina Grupcheva delivering her presentation

Given these considerations, another factor that was brought up was the exact age that any young people can be fitted with contact lens. The answer according to Professor Grupcheva was dependent on the maturity of the teenager. She said that there should be no specific age that one could start, but eye care professionals should be able to tell if the patients were mature enough to handle usage of contact lenses. Professor Grupcheva recommended usage of daily wear silicone hydrogel contact lenses for the young people. She noted that this is the best product for the teenagers most especially when caring about their hygiene concerns. Also, she provided practical tips in fitting contact lenses to teenagers. At the end of her talk, Professor Grupcheva shared six real-life successful cases of her patients, further encouraging the eye care professionals in attendance to pursue recommending contact lenses to teenagers.

Mr. Abercrombie a communications expert as well as a faculty member of the Vision Care Institute™ gave the third and final presentation of the night. He shared Top Ten Tips to Grow the Contact Lens Practice. He discussed in great details the opportunities as well as different strategies in attracting new contact lens wearers. He went in details explaining different approaches through communication as well as showing practical tips to attract new wearers and encourage contact lens trials. He emphasized that the eye care professional as well as the sales team must be very proactive in offering contact lenses to all suitable clients. He went into details discussing about increasing the contact lens visibility in the stores as well as explained different ways of educating the patients or customers as well as motivating the staff in the store to support the process of contact lens trials. He also noted that contact lens wearers are more profitable given that they visit the store more frequently and they are more loyal. Furthermore, he stated that the contact lens wearers use other optical products such as a back up pair of spectacles as well as fashion sunglasses.

The event was filled with educational presentations which provided value to the attending eye care professionals. It clearly demonstrated the importance of offering contact lenses to the teenagers as well as showed the opportunity and the benefit of attracting new wearers into contact lenses through active recommendations. The affair capped off with intimate dining where the practitioners were able to interact more with the Johnson & Johnson team and amongst each other as well.

Revert introduces its new Polar Junior collection



Bright colors, eye protection and ultimate comfort are the key features of the children's sunglasses collection

Dynamic, vibrant and full of energy, the Polar trademark has always set itself apart for its modern and lively essence, capable of engaging, most of all, the younger crowd. This new brand for children is inspired by the same vision: creativity, color and fun are in fact the key ideas behind Polar children's sunglasses.

Round and square frames alternate to suit the tastes and needs of each child. The little ones will love to emu-

late adults by wearing classic aviator styles, one of Polar's traditional items, now in a junior version to give children a modern look. Plastic and metal are the materials used in this collection, combining different shapes and styles in intense and brilliant shades of color to capture the children's attention. The attractive design of the glasses is accompanied by a great fit and the ideal visual comfort provided by the Polarized Premium® lenses. Born of a high-tech Japanese technology, these polarized lenses can filter and direct almost all the sun's rays that cause reflection: thanks to these features, the risk of sunglare is minimized. Colors are perceived more clearly and objects can be viewed safely, especially when brightness is intense. Protecting

children's eyes from harmful sun rays is crucial. At the same time, children can enjoy wearing a pair of sunglasses.

Thanks to the brilliant mix of innovation, design and superior quality standards, the Polar Junior collection offers a trendy accessory with high-performance levels. Herein lays the success of Revert and its trademark: the ability to combine quality and passion in a single product that reflects a philosophy of life and a way of being that are just as exceptional.



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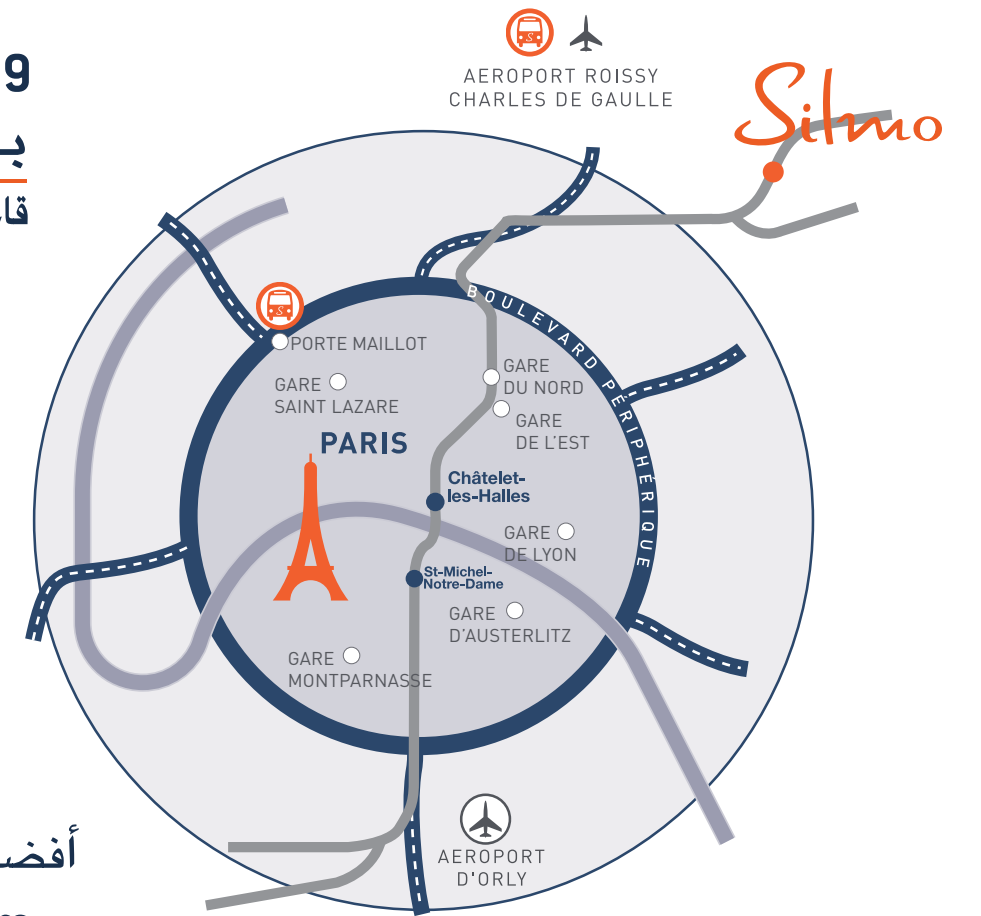
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*الطموحات تصبح واقعاً

29 سبتمبر - 2 أكتوبر 2011

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Ossé MUSTANG EYEWEAR HAWK EYEWEAR optelli

Merve Optik is the one of the leading companies of optical frames business in Turkey. Merve Optik has the most widespread and powered organization with its employees and offices in Turkey. It the Turkish optical sector with a percentage of 30%.

Merve Optik collections are available internationally in the markets. Our products are exported its to more than 20 countries. Merve Optik's main goal is to share knowledge and experience with its valuable customers, while continuously providing quality.

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- 15 sales offices in Turkey
- 3000 distributors in Turkey
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Technology, precision, innovation

Wavefront Technology and its advantages in Optometry (Continued)

relation with Zernike polynomials. It is a quadratic sum of the Zernike coefficients that give the power of the aberrations for the terms that have been summed. For example higher order RMS is the total of all the higher order aberrations. You can also come across "Total RMS", which is the overall magnitude of all the eye's refractive errors (sphere, cylinder and HOAs)

In a Zernike polynomial, the correct way to combine the aberration coefficients is to take the root mean square of them. Aberrometers use the RMS to record and measure optical aberrations as detailed as 0.01 microns.

Thanks to this kind of accuracy, aberrometers can express lower and higher order aberrations in terms far more accurate than ever seen in clinical eye care. With the RMS system, we can reconstruct the mathematical calculations of an aberration into Zernike polynomials.

How are wavefronts used to measure accommodation? Why is this important?

The way to measure accommodation with an aberrometer is to make the internal fixation target start from the far point of a subject and then make the target approach over a custom defined distance and in a custom defined number of steps. At each step a wavefront measurement will be taken and by measuring the defocus, we get also a measure of the patient's ability to accommodate. It is then possible to analyze the evolution of all the components of the optical quality of the eye with accommodation: sphere (with a direct link to presbyopia), cylinder and also higher-order aberrations.

With a rapidly aging population in the West, presbyopia is a problem for more and more people. Having a tool that can measure this is an important step forward in eye care. Having a tool that also allows to measure any related aberrations to accommodation can provide valuable insight into a patient's evolution of visual quality.

Is SH wavefront aberrometry a difficult technique to learn? How long will it take to get up and running?

SH wavefront aberrometry is not difficult to learn because the measurements are very easy to do (comparable to that of an auto-refractometer), and because there is more and more literature available and an increasing number of practitioners with experience. Doing a measurement can be learnt in minutes and having a good working knowledge of exploiting the information is a question of practice and can take some weeks, depending on the intended application and previous experience of the user.

Why is wavefront aberrometry an essential part of modern ophthalmic practice?

Eye care has known a number of major technological innovations in recent years. Aberrometers have made it possible for the first time to measure higher order aberrations in the clinic. This breakthrough has been a runaway success with refractive surgeons from the outset, and now there is a growing realization in the market that the type of precision and detail offered by aberrometers is increasingly needed in the general practice as well.

There are a growing number of new correcting elements based on information coming from aberrometry. Best known are Lasik and IOLs; aberrometers can help making a sharper prescription.

Contact and spectacle lens manufacturers are under tremendous pressure to offer custom correction solutions. Aberrometers have been the key enablers for this trend. It is clear that aberrometers are an essential part of the forward-looking ophthalmic practice.

What should I look out for when selecting a SH wavefront aberrometer?

Not all Shack-Hartmann wavefront aberrometers are alike. Different manufacturers offer products with varying degrees of accuracy, dynamic range, max./min. pupil diameters, analysis features and compatibility with other devices. Two of the key factors when choosing a Shack-Hartmann aberrometer are accuracy and dynamic range.

Accuracy is directly linked to the number of points measured and the spread of these measuring points. The higher the number of points the better, but some aberrometers underachieve because of an uneven spread of the points, even though they have a high number of them.

Sometimes manufacturers use software algorithms to enhance the optical resolution of their wavefront sensors; this is called software interpolation. This process takes data from nearby points to calculate, by approximation, what the desired added data points would be if they could be measured physically. The inherent room for error with this type of technology is evident because the device is not providing a true, physical measurement of each point, but an approximation calculated by the software.

As for Dynamic range, the quality of the design of the wavefront sensor directly impacts its ability to detect the higher and lower ranges as well as the subtleties in the wavefront's variations. A good way to gauge an aberrometer's overall dynamic range is to look at the cylinder range. Aberrometers built around less precise wavefront sensors do not enable users to detect disorders including keratoconus, corneal scarring and severe higher-order aberrations.

1•DAY ACUVUE® TruEye™

The first time a contact lens has been shown to be as healthy as wearing no lens¹

1•DAY ACUVUE® TruEye™ Brand Contact lenses are designed – and now shown – to be as healthy as wearing no lens.¹

In a 12-month controlled, randomised and masked clinical study – conducted by Eurolens research at the University of Manchester – the performance of 1•DAY ACUVUE® TruEye™ daily disposable silicone hydrogel contact lenses in a group of new wearers was compared to a control group of matched spectacle wearers.

Subjects wearing 1•DAY ACUVUE® TruEye™ had no differences in their subjective responses to those wearing spectacles for vision, comfort and overall satisfaction.

Equivalent findings were observed between subjects wearing 1•DAY ACUVUE® TruEye™ to those wearing spectacles for key biomicroscopic scores, with the exception of conjunctival staining. All levels of biomicroscopic scores were low and the difference observed between the groups on conjunctival staining was not considered clinically significant.

The assessment in a group of new wearers against a 'naked eye' spectacle correction represents the ultimate test for any new lens type, and it is evident that 1•DAY ACUVUE® TruEye™ was able to meet this 'gold standard'.

1•DAY ACUVUE® TruEye™ as healthy as no lens wear¹

After one year, across a range of health and comfort measures, 1•DAY ACUVUE® TruEye™ maintained healthy lens wear – comparable to no lens wear.¹

Given the other attributes of contact lenses such as lifestyle enhancement and the overall visual benefits of lenses over spectacles, this work has demonstrated that 1•DAY ACUVUE® TruEye™ contact lenses offer an excellent, comfortable form of vision correction, and are able to exhibit minimal alterations to ocular physiology.

An independent study shows 1•DAY ACUVUE® TruEye™ lenses to be as healthy as wearing no lens¹

Oxygen availability ²	✓
Vision	✓
Comfort	✓
Limbal and bulbar hyperaemia	✓
Conjunctival staining	The difference is not clinically significant ✓
Corneal staining	✓
Papillary conjunctivitis	✓
UV-blocking ⁶	✓

LESS GOOD THAN THE NAKED EYE IMPROVEMENT ON NAKED EYE

Note – not drawn to scale



No other daily disposable has been tested against no lens wear; the first time a lens has shown to be as healthy as no lens wear.¹

1•DAY ACUVUE® TruEye™ lenses allow 100% oxygen consumption, comparable to no lens wear.² HYDRACLEAR® 1 technology embeds a wetting agent into silicone hydrogel, creating ultra-smooth lenses with high wettability for comfortable eyes.³

Additionally, 1•DAY ACUVUE® TruEye™ offers the highest UV protection available in any daily disposable lens⁴ and supports everyday eye health, thanks to the hygiene and convenience benefits of a fresh new lens everyday.⁵

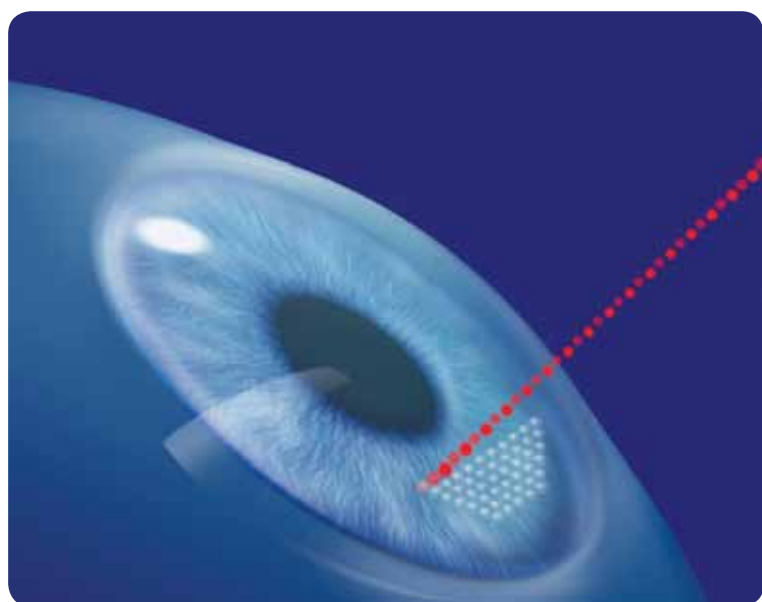
Recommend 1•DAY ACUVUE® TruEye™ to your patients – shown to be as healthy as no lens wear.¹

1. JJVC, data on file 2010. Physiological response of neophytes with a daily disposable silicone hydrogel lens. 1-year results after 12 months, n=48, from a randomised, double-masked, parallel group study.
2. Corneal oxygen consumption was calculated using the method of Brennan, which represents an index of corneal oxygen metabolism during open eye and thus cellular energy production. Brennan NA, OVS. 2005 Jun; 82(6):467–72. Brennan N, Morgan P. CLAE 2009; 32(5): 210–254.
3. Chamberlain P. Comfort and physiological response of neophytes with a daily disposable silicone hydrogel contact lens. CLAE 2009; 32: 220.
4. Walsh K. UV radiation and the eye. Optician 2009; 237(6204): 26–33.
5. Veys & French K. Health Benefits of Daily Disposable Lenses. Optician 2006; 231(6050): 16–20.
6. UV absorbing contact lenses do not substitute devices like sunglasses because the contact lenses do not cover the entire eye.

For more information visit: www.jnjvisioncare.ae



Wavefront Technology and its advantages in Optometry



As the name indicates, an aberrometer measures aberrations, and an aberration is a vision defect that occurs when light rays are improperly bent (refracted) in the eye. An aberration may occur because of a flaw in the structure of the eye. There are lower order aberrations, sphere and cylinder, and there are higher order aberrations such as coma, trefoil and spherical aberration. Patients who complain of glare, halos, starbursts and poor night driving often have increased higher-order aberrations.

What is Shack-Hartmann (SH)? How does SH wavefront aberrometry differ from other wavefront measurement techniques? Is this Adaptive Optics?

Shack Hartmann is the wavefront measuring technology chosen by the majority of aberrometer manufacturers. A Shack-Hartmann-

based system measures a wavefront in one shot, which makes it quicker compared to other technologies that use consecutive measurements. This gives it a high repeatability, because the longer the measurement takes, the more negative effect eye movements will have on the repeatability. Shack-Hartmann can have a very high resolution which is directly related to the number of measuring points.

Ray tracing is the main alternative technique. This is a fine method to measure wavefront but it needs more time to measure since it is not a one-shot but a consecutive measurement. It has also fewer measuring points, thus reducing the precision. But most damaging is the fact that ray tracing incurs the aberrations twice because it passes light through the eye to create a wavefront and then retrieves it from the retina to measure it. This fundamentally hampers both the repeatability and precision.

Adaptive Optics consists of 3 elements:

- Wavefront sensor
- Algorithms
- Deformable mirror

A Shack-Hartmann wavefront sensor uses the first two elements of Adaptive Optics, but not the third.

How do aberrometers differ from auto-refractometers? How do aberrometers differ from corneal topographers?

What is a wavefront?

A wavefront is a physical representation of the optical quality of a light beam's optical quality. The quality of a light beam can be degraded by any imperfect optical element, a lens, a piece of glass, and in the eye, a cornea for example. When the light beam is "perfect" in terms of optical quality, the wavefront is plane (flat). When light is degraded by an optical element, the corresponding wavefront is not plane anymore, but has a disrupted shape. A representation of this shape, by way of its variations and amplitude, gives a precise knowledge of the amount of perturbation that was introduced by the optical elements.

Some ophthalmologists have described a wavefront in recent years as a measure of the total refractive errors of the eye, including myopia, hypermetropia, astigmatism, and other refractive errors that cannot be corrected with glasses or contacts.

How are wavefronts measured?

In ophthalmology, wavefronts are measured by devices called aberrometers. Aberrometers use wavefronts to objectively measure the overall refractive power error of the eye. They do this by mapping how light rays travel through the eye and by providing maps using color gradients to represent magnitudes of the refractive errors, which enables ophthalmologists to locate and possibly correct even obscure imperfections that cause vision defects.

Aberrometers differ from auto refractometers because they measure more optical parameters than auto-refractometers do.

Auto refractometers measure the average optical quality of the eye. Aberrometers measure this same average quality and also detailed local differences in optical quality. This is important because the optical quality in an eye is not homogeneous.

Auto refractometers measure sphere and astigmatism. Aberrometers measure sphere, astigmatism, and also what is known as irregular astigmatism. Irregular astigmatism is a group name for those optical defects that were near impossible to measure before the introduction of the aberrometer.

The optics of the eye is mostly determined by 2 elements: the cornea and the crystalline lens. Aberrometers differ from corneal topographers in that corneal topographers are only able to measure the optical quality of the eye linked to the cornea. Aberrometers measure the global optical quality of the eye, due to both cornea and crystalline lens.

What are higher order aberrations? Is this the same as irregular astigmatism? How do they influence the quality of my patients' vision?

Lower order aberrations (LOAs):

- 1st Order Aberration - tilt (prism)
- 2nd Order Aberration - defocus (sphere) and cylinder (astigmatism) Some of the most important higher order aberrations (HOAs):
- 3rd Order Aberration - coma and trefoil
- 4th Order Aberration - spherical aberration and quadrefoil
- 5th Order and higher – pentafoil etc.

Approximately 90% of the eye's optical imperfections are due to lower order aberrations with the rest being made up of higher order aberrations.

Everyone has a certain degree of higher order aberration in their visual system that may affect the way they see. People with significant higher order aberrations may not see perfectly, even with the best glasses or contact lenses possible. Two common and potentially disruptive higher order aberrations are spherical aberration and coma. Spherical aberration creates halos around points of light while coma makes points of light appear comet-like with a blurry tail-like smudge to them.

Irregular astigmatism was a term used before the aber-

rometer arrived to better identify unknown causes for lack of visual acuity due to the optical quality of the eye. The aberrometer has now opened our eyes to much higher detail.

Another example to show the influence of higher order aberrations is sphere. Sphere can be seen on a wavefront as a spherical shape all along the pupil of the eye, that means that the optical defect, myopia for example, is the same in all parts of the pupil of the eye. If only sphere is considered, the myopia will be the same for any pupil size of the patient. When looking at higher order aberrations, it is possible to identify wavefront shapes that vary in the pupil area. For example spherical aberration is a higher order aberration, which is characterized by a variable power over the pupil. This means that if also this higher order aberration is taken into account, the myopia of the patient will vary with his pupil size. This could explain why someone with high spherical aberration can see halos at low light conditions, when the pupil is big.

What is Zernike and how do I use it?

Fritz Zernike was a Nobel Prize winning physicist who developed a set of mathematical functions (polynomials) to very precisely describe very complex shapes like wavefronts. He introduced that a set of pre-determined known shapes, of growing complexity, can be combined to precisely describe a surface that fits as well as possible to a measured wavefront.

Zernike analysis describes the wavefront mathematically as the weighted sum of Zernike basis functions or modes. The weight which must be applied to each mode when computing the sum is called a Zernike coefficient and is usually expressed in microns.

Each mode describes a certain three-dimensional surface and corresponds with ocular aberrations. For instance, second-order Zernike polynomials represent the conventional aberrations such as defocus and astigmatism. Zernike polynomials above the second order represent the higher-order aberrations that are suspected of causing night glare and halos.

Zernike polynomials help to simplify the wavefront technology by combining all aberrations into one single map. This is called a wavefront map and is usually a two-dimensional map using colour gradients representing powers of the aberrations. These Zernike polynomials can also be displayed as a pyramid starting from 0 (no aberrations or piston) to, theoretically, as high as you want to go.

What is RMS? What is the RMS of a "normal, healthy" eye?

RMS stands for Root Mean Square, a term that is used in



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قضايا
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فلي عينك على الثورة الفائزة



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في الأسابيع الماضية حدثت الثورة الفائزة بفوز قصة أختي في عملها الاجتماعي مع فاقد السمع. قلب حياتنا التقنية وجعلنا نتعرف على المواقع الاجتماعية.

وهي أول ثورة في حياتنا التقنية تدرنا فيها على التصويت والانتخابات. وبرزت دورة الأسرة الممتدة والأسرة النواة، وجد بناتنا وشبابنا أنفسهم لبيت الخبر الفائز على شبكة الإنترنت، وعلى تطبيقات الهواتف النقالة وحولوه إلى منصة عرض تفاعلية متعددة الوسائط والقنوات والمنصات على مدار التصويت لمواقع الإنترنت ومحركات البحث ومواقع التحميل.

ومن الفوز الفائز نتعلم عزيزي القارئ أنه علينا التغيير ومواكبة التقنية لتسويق أنفسنا ومنتجاتنا ومهنتنا عن طريق المواقع الاجتماعية ووسائل الإعلام الرقمية. فهناك قنوات التواصل المتعددة التي تضع منتجك أو خدمتهم ومهنتك عليها. استفد منها فكل منا يحمل آلات التواصل بيده ما علينا إلا الاستفادة منها.

اليوم يستيقظ الناس في أنحاء العالم يديرون قنواتهم التقنية، فأجهزة "الأي باد" وغيرها لها أدوار جديدة نلعبها في واقعنا العربي انطلاقاً من سهولة التواصل مروراً بشبكات التواصل يجب توظيفها في التسويق، ولكن السؤال: ماذا نحمل خيراً أو منتجاً للمتصفح أو القارئ؟ هل الأخبار والأسفار لامست همومه وبجره وماؤه وترايه وجيبه؟

مهما بلغت عواطفنا ومشاعرنا، فنحن أعجز من أن نضع أنفسنا مكان الزبون. ومهما بلغت حدود المشاركة، لا أحد يمكنه أن يدرك مشاعر الخوف والحب التي ساورت الشخص المحتاج للخدمة أو المنتج أو المعلومة! لذلك علينا التفكير ماذا نقدم له؟

أنت من يقرر عزيزي القارئ؟ وخلي عينك على الثورة التقنية ■

Protection against UV radiation is a must for your eyes



Willich, April 2011. Frank Lautenbach, Graduate Engineer (UAS) Ophthalmic Optics/BSc, is a Product Manager for the Spectacle Lenses at SEIKO Optical Europe and responsible for the SEIKO brand. UV protection is one of his key topics that, he thinks, no spectacle wearer should ignore. In the following interview with EYEZONE, he explains why.

plains why.

Why is UV protection so important for spectacle wearers?

Preventive measures protecting your eyes from UV radiation are absolutely vital. When the invisible UV rays penetrate the pupils, they may eventually cause or speed up the development of diseases that are usually age-related, such as cataract or macular degeneration. The number of patients suffering from these illnesses is supposed to rise in the coming 10 to 15 years.

What should the consumer be particularly attentive to when buying sunglasses?

First, I would prefer organic spectacle lenses over mineral ones, because they offer a much higher UV protection beyond the so-called UV cut. You need to distinguish, though, between ready-made sunglasses without correction and tinted corrective lenses. Ready-made sunglasses of a good quality are marked with a specific symbol. A long time ago SEIKO Optical started to increase the UV cut of tinted and untinted corrective lenses. The limit between the invisible UV range and the visible light is between 380 and 400 nm. The higher the UV cut, the better the protection for spectacle wearers. SEIKO continuously improves the UV cut and has found the best protection to be at 395 nm.

The standard finish SEIKO Super-ResistantCoat gives extra protection. It makes the SEIKO spectacle lenses scratch and shock-resistant, durable, and easy to clean for contrast and reflection-free vision. Moreover, the super anti-reflection coating softens the unwanted share of blue light.

Tinted spectacle lenses are no sunglass lenses. What does SEIKO Optical think about this statement?

Basically, that's right. The tint alone protects your eyes from

glare - and the darker the selected absorption, the better the protection - but it does not protect from UV radiation. Looking at it simply, tinted lenses make vision more relaxed and there is no need to squint any more. Dark tints, however, cause the pupils to enlarge, and without an appropriate protection UV rays get easy access and can cause irreparable damage as mentioned before. Unless all the tinted lenses have 100% UV protection, just as the SEIKO range of 200 different tints. The contrast-enhancing BlueBlocker colours RoadStar, SkyFun or Sunny Yellow are a perfect addition to SEIKO's tinted lenses.

As we get older, our eyes need more and more protection. What would you recommend wearers of pro-gressive lenses regarding light and UV protection?

SEIKO Transitions® are a good alternative to sunglass lenses. They darken and lighten up depending on lighting and weather conditions. The wearer does not need to change between sunglasses and corrective spectacles any more. Many consumers rightly expect permanent UV protection in combination with a variable tint when they see the "optimum light protection" label. These properties have been ideally combined in SEIKO Transitions® lenses, which are available in brown and grey for single-vision and progressive lenses.

We recommend the SEIKO EMBLEM product family to wearers of progressives, who want pure sunglass lenses from the SEIKO range. EMBLEM lenses are among the latest inner progressive lenses and guarantee first-time and experienced wearers smooth and relaxed vision. In combination with the contrast-enhancing polarising filter and the suitable sunglass tint, wearers do not only wear the right lens power, but also protect their eyes 100% from UV radiation.



SEIKO EMBLEM Progressive lenses for maximum comfort

SEIKO

EYEVIT DISTRIBUZIONE



EYEVIT DISTRIBUZIONE srl is located in the region of Marche, at Porto San Giorgio, and was established in the year 2000, though its founder Federico Vitali has been in the field for over 20 years.

His professional background begins with the collaboration with specialized firms, as Sales Manager for Italy, in particular Alain Mikli and Claude Montana, names, which then, were already a creative vanguard expression applied to the sector of the eyewear.

Subsequently, the company specialized in the introduction of exclusive brands from Northern Europe onto the Italian market, amongst

which the German Hoffmann, unique prestigious handmade frames produced in materials such as buffalo horn and gold, intended for the luxury-bracket clientele.

Of great value has been the long collaboration with the French company of EYE'DC, very innovative eyewear brand for shape and style, through which EYEVIT has then run the development of the sale in Italy of the German brand IC! BERLIN, then still unknown in the country but soon to affirm itself as one of the most trendy in the world market.

EYEVIT has always carried on a work of market research for his loyal customers importing to Italy and distributing, only in the best retail shops, the most interesting brands of the moment bringing them to success.

In 2004 EYEVIT signs the agreement with CESARE PACIOTTI spa, that provides the licence for sunglasses and optical frames with the trademark Cesare Paciotti and 4US CESARE PACIOTTI, famous for the precious shoes, bags, leather accessories and for the snaker casual chic.

The business of the company assumes at once a more International connotation, as the licence provides the right of a worldwide sale and also the structure of the company enlarges strongly that today employs 18 people.

The Styling office is composed of two professional designers that deal with: market analysis for the individualization of trends, stylistic proposals also on briefing of the head office, respective technical designs, prototypes and inspection of the final product.

They both come from previous experiences made in

big Italian companies of the sector.

In April 2007 an agreement is signed with the group of Binda srl of Milan, leader in the sector of watches and steel jewels, for an ambitious project of world licence for the glasses line branded BREIL.

At present EYEVIT has built up in Italy a customer portfolio of about 1.500 points of sale, punctually served through a network of 18 professional reps.

Abroad, during the past two years, EYEVIT has conquered the presence in about 30 markets availing itself of the partnership of valid distributors in place.

MISSION

Elements which the company aims at and his points of strength:

- The achievement of a top quality product,
- The preservation of a good quality/price relation,
- The valorization of Made in Italy,
- The creation of a strong image/personality of the product through care for details, search for characterizing materials (stones, leather, wood, rubber etc...) and study of appetizing POP material,
- The supplying of a fast and kind after-sale service,
- The making of a creative and synergic working environment, characterized by a sound competition and a slim and flexible structure prone to adapt itself to the quick changes of the market.



شركة النظاراتي حسن تمتل بيويل ماسي تتوج بها . ٦ عاما من العطاء

الأشعة في العين.

ترجع البدايات الأولى لقصة نجاح شركة النظاراتي حسن إلى ما يزيد على نصف قرن عندما قام الدكتور حسن سعادة يزدي بافتتاح أول فرع نظارات له في الكويت، حيث باع أولى نظاراته للراحل الشيخ عبد الله مبارك الصباح، والراحل الشيخ عيسى، أمير البحرين.

يذكر أن شركة النظاراتي حسن لديها أكثر من ٤٠ معرض نظارات تغطي أنحاء الكويت كافة، كما ولديها فروع في عُمان والمملكة المتحدة، ومكاتب في لبنان ومركز توزيع إقليمي في الإمارات العربية المتحدة.

يزداد فريق عمل شركة النظاراتي حسن يوماً بعد يوم، وهو الآن لا يقل عن من ٢٥٠ جميعهم من الكوادر المؤهلة والمدربة متخصصون في علم البصريات والسمعيات والمجوهرات يضعون خبرتهم في خدمة العميل.

حاز السيد حسن سعادة على جوائز عديدة منها منصب كافاليري دي لافورو Cavaliere Di Lavoro من رئيس جمهورية إيطاليا ممثلاً بالسفير الإيطالي انريكو جرانا Enrico Granara وهذا اللقب يقدم للأشخاص المتميزين في عملهم وخاصة في علاقاتهم الناجحة والمميزة مع إيطاليا، كما وحازت شركته على جائزة سوبر براند للمرة الثانية التي منحتها لها إدارة شركة سوبر براند العالمية على أنها أهم شركة بصريات في الكويت. تتنوع الأنشطة في شركة النظاراتي حسن اليوم لتشمل ثلاث نشاطات أساسية هي النظارات والسمعيات والمجوهرات.

أقامت شركة النظاراتي حسن احتفالاً بمناسبة حصول مؤسسها على اليوبيل الماسي لمرور ٦٠ عاماً على مزاولته العمل في مجال البصريات في دولة الكويت في ٣ مايو ٢٠١١، بالقاعة الماسية في فندق الشيراتون، وذلك تحت رعاية سعادة وزير الصحة الدكتور هلال السايير. أظهرت الشركة منذ بدايتها التزامها الثابت في تقديم أفضل خدمة لعملائها مع حرصها

الشديد على تقديم أعلى جودة، ونتيجة للسياسة المتألفة المتبعة تجاه عملائها أصبح عملها أكثر اتساعاً ونالت رضا واستحسان الجميع.

الجدير بالذكر أن شركة النظاراتي حسن هي الشركة الأولى في الكويت التي حصلت في عام ١٩٦٠ على أول رخصة مهنية لتجهيز وبيع النظارات الطبية في الكويت، وذلك بعد صدور قانون مزاوله مهنة قانون النظارات، كما وحصل حسن سعادة يزدي على أول رخصة من إدارة الصحة العامة لإجراء فحص النظر وانكسار



السيد وزير الصحة د. هلال السايير
والسيد حسن سعادة يزدي



Nine Questions with Professor Grupcheva

In the recent road show conducted by Johnson & Johnson Vision Care educating eye care professionals across Dubai, Abu Dhabi and Kuwait, Eye Zone had the great opportunity to catch up with its key speaker Professor Christina Grupcheva, currently National Professor at the Medical University of Varna in Bulgaria. During her presentation, she amazed the eye care professionals about the knowledge and experience she has in recommending contact lenses to the teenagers – for her, it is a mission possible. So, to further get her valuable insights on the matter, Eyezone did an exclusive interview with Professor Grupcheva. Read on as she shared the many essentials any eye care professional should know in selling contact lenses to the young people, and why there is a need to spread the word about it.

Why do you think it is important to create an educational awareness in Teenagers and Contact Lenses?

Public knowledge has changed dramatically for the last decade. Today if we want something we do not ask, we “google” it. Unfortunately, the information and judgment are not always correct. Considering how technologically advanced is the young generation, we must assume that they have some virtual knowledge if they are curious about contact lenses. But internet is not the best place to shop for health care products, because health is much more complex issue. Therefore the goal of the eye care professional is to promote eye care including contact lenses in the real clinical practice. It is important for the young to know that this is an option for them, but to benefit from this option they need to be properly examined and advised. Furthermore, we may assume that many teens do not have the courage or even do not have the information to try contact lenses. But every teenager is unhappy with their glasses, regardless do they declare or deny it. In order to provide proper management the Eye Care Professionals should educate all teenagers with vision correction need for the two possible options - glasses or contact lenses, since the visual problem has been discovered. This is the only way to avoid the non proven sources, often leading to disappointments or even complications.

Why do you think there is common perception that young people cannot use contact lens?

Yes it was when I was a teenager about 20 + years ago, but remember I am parent of a teen now. Of course everybody wants the best for their children, but not everybody can decide on his or her own what is the best. That is why public awareness of the new advances and scientifically proven benefits of contact lenses in younger age, should be presented to the public in proper format. Contact Lenses are changing and those



Professor Christina Grupcheva
National Professor at the Medical University of Varna in Bulgaria

changes are driven by the industry, research and health care professionals.

What are the factors that must be considered in prescribing contact lenses to the young people?

The eye health, comfort and perfect vision are the three most important factors, of course for anyone, but especially for young wearers as they have prospective to experience much longer use of contact lenses. Additional considerations should be the life style and the activities and requirements of the patient. However, there is no anatomical difference between teenage eye and mature eye regarding contact lens parameters.

What is the youngest age that can use contact lens? Why this age?

There is no age limit really especially when considering specialty lenses. However, for optical correction purposes only, I would regard the ability of the patient to be motivated and compliant and to be skillful enough for training. Sometimes 13 years old is more mature then older teenagers.

How are the tips that you can give the Eye Care Professional so that they can effectively reach to the parents in suggesting the use of contact lens?

Parents are really important party. The reason is mainly because the young individual requires support. Well may be parent had wrong experience from the early lenses or may be never had one. So considering that every parent wants best for their child providing them with trial lenses may work really well. Parents own experience of comfortable lens and good vision will drive them to help their child. I do recommend all parents to try lenses in case they never did and especially in case of previous negative experience. Occasionally, however, parent may not be very knowledgeable and then the Eye Care Professional must work with the teenager or identify another older sibling with patient consent.

What benefits will young people get from using contact lenses?

Teenagers are very worried about their looks, so contact lenses are invisible. Most importantly they can provide full vision correction and easily changed in case of refraction fluctuation. Research has shown that activity confidence and self esteem improved with as much as 30% if teenagers with refractive problems when fitted with contact lenses. In fact for younger age, with prospective refractive error fluctuation, glasses and lenses are the only applicable modalities. Frequent replacement lenses are easy to tune to the new refractive correction if required than glasses. Furthermore young people are very active; they play sports and spend time outdoors. Contact lenses allow using other protective glasses, sunglasses, helmets and other accessories. The Eye Care Professionals must remember that swimming in contact lenses is not recommended, however, if should be done then it can be done only with daily disposable lenses and protective goggles. In fact daily disposables are best for many sport activities.

In your experience, have you encountered young people suffering from side effects in using contact lenses? If yes, what do you recommend to avoid these effects?

Well complications are fact, and certainly they are related to hygiene, non compliance or environmental factors that cannot be always predicted. The most important action to minimize complications and discover them in earlier stages is educating the young subject. The 3F acronym works excellent and includes: each eye must see Fine, eyes must look fine, and eyes should feel fine. Educated patient will know what important symptoms must make them remove the contact lenses and see the Eye Care Professional as soon as possible. Scheduled visits and reminders about them are also im-

portant, because patients tend to drop visits if they do not have problems. Problems however are not always symptomatic. Therefore a gentle reminder about follow up visit is a very good and safe policy.

What hygienic guidelines do you recommend to the young people to keep up using contact lenses?

There are varieties of guidelines but all should include: hand hygiene, case hygiene, usage of proper lens care system, frequent lens replacement regarding the recommended lens life, make up rules for female patients. Hand hygiene should start from the practice with presentation of the contemporary modes such as dispensers and disposable towels instead of soap bars and conventional cloth towels. The Eye Care Professional must give personal example before examination washing properly their hands in front of the patient. Lens case should be washed with the same lens care solution, kept dry and disposed regularly (every month). Lenses should be rinsed, rub-cleaned and stored in fresh solution following the instructions and the expiration date. Lenses must be changed according to the recommendations. Female patients may use make up, however, they should apply it after the insertion of contact lenses and use fresh cosmetics without sharing it with others.

What is the most important thing that an Eye Care Professional, parents and a young user should remember before allowing the use of contact lenses?

Contact lenses are part of the anterior ocular surface. Contemporary technology made them very healthy with good optics and superior quality of the material and design. Not all lenses are the same. The Eye Care Professionals should educate themselves by peer reviewed literature about the new advantages and their potential applications. The contact lenses should be chosen with all consideration about vision, comfort and health, but additional advantages such as UV protection must be considered as well. Young patients are not more challenging then adult ones. They have similar anatomical parameters, present good learning skills, do not take much more chair time and after all can be loyal to the practice for a longer period of time. Young potential contact lens user should not compromise with the quality, because the eye health is important, but to understand that they should be given detailed explanation about benefits of the newest technology.

I would encourage any Eye Care professional who fits contact lenses to offer contact lenses to the young generation. Contact Lenses will not only provide superior vision to the young wearer who has refractive error but most importantly will improve the quality of life and self esteem of the wearer.

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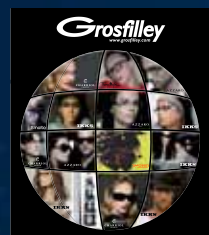
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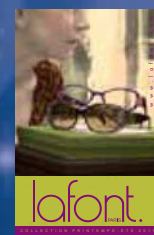
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بريد آيزون

ما هو الدور الرئيسي الذي ينامط بالبائعين في محلات النظارات، وكيف يستطيع البائع أن يتطور إلى مراتب أعلى في عمله؟

م.و

السعودية

نظراً للمهام الكثيرة التي يجب أن يلتزم بها البائع أثناء قيامه بعمله في المحل، أصبح لزاماً عليه أن يضع قائمة بالمهام الموكلة إليه، حتى يستطيع توزيعها حسب الأولويات. وهذه الأولويات يتم تحديدها في العادة حسب عدد فريق العمل، ولكي نبسط الأمر سوف نفترض أن في المحل بائع واحد، وعليه يمكن القياس، فإن زاد عدد الأفراد يصبح تقسيم المهام بينهم هو المطلوب.

قد تستغرب عزيزي أن المهمة الأولى تنحصر بشكل رئيسي على مستوى الثقافة التي تمتلكها، إنها فعلاً أولوية. يجب أن تكون جاهزاً من هذا الجانب. إن الإطلاع الدائم على المعلومات والمستجدات بكل الطرق والوسائل ومن ثم نقل هذه الثقافة إلى العميل ووضعها في خدمة احتياجاته البصرية، ستجعلك الشخص المطلوب للعميل، وبالتالي فأنت الشخص المطلوب للمؤسسة التي ستعمل هي جاهدة على الإبقاء عليك بل وأكثر من ذلك سوف تنال حصتك من الترقية، وستجد أنك أقل قلقاً على مستقبلك فمؤسسات أخرى سوف تنظر إليك كشخص مرغوب لديها إذا رغبت أنت في الانتقال إليها.

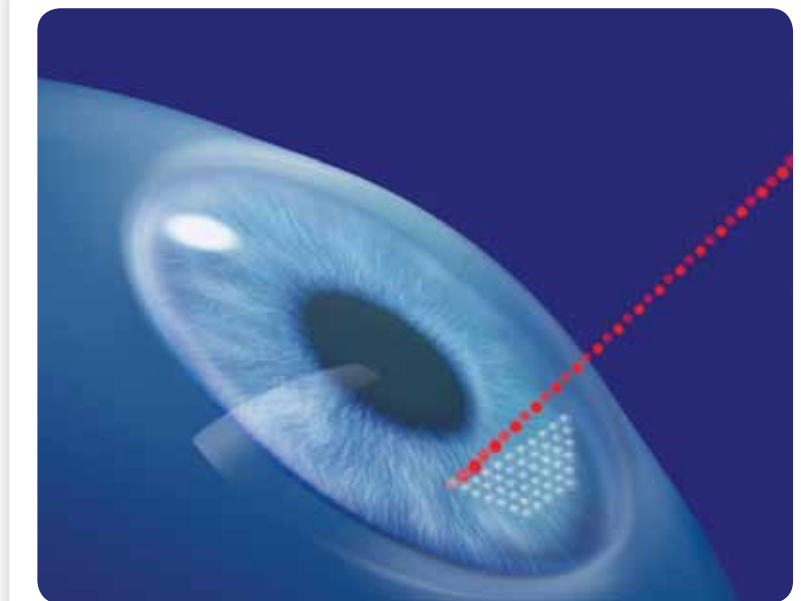
ولكنك حتماً لن تنسى أن تضيف إلى ثقافتك التي استمديت منها المزيد الحضور الشخصي، وتحضير المنتجات والأدوات التي سوف تحتاج إليها أثناء قيامك بالتسويق. وسوف يسهل عليك ذلك لأنك ستتع أسلوب التواصل الدائم مع عملائك حتى تفهم حاجاتهم ورغباتهم، وسوف تعمل جاهداً أن تحضر الحديث والأدوات وتسبق العميل في الوصول إلى مراده. ولن يضر في الأمر شيء أن تستمر في التواصل مع العميل حتى بعد خدمة البيع، فالخبراء يقولون أن خدمات ما بعد البيع تكاد تكون أفضل تأثيراً على المدى البعيد من أية وسيلة تسويق أخرى.

علي حسن بندر

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فن آوری جبهه موج (Wavefront) و کاربرد آن در بینایی سنجی

به قلم: اپتومتریست حمید توکلی - مدیر شرکت سی بی سی مدیکال



Wavefront (جبهه موج) چیست؟

جبهه موج (ویو-فرانت) عبارت است از نمایش فیزیکی کیفیت عبوردهی نور از یک سیستم اپتیکی.

کیفیت نورعبوری از یک سازه اپتیکی، از یک قطعه عدسی ساده گرفته تا یک سیستم پیشرفته مانند چشم انسان، متأثر از ناهمگونیهای موجود در آن است. در تعریف چنانچه کیفیت نورعبوری از یک سازه اپتیکی کامل باشد کیفیت آن در فیزیک به صورت "ویو-فرانت تخت" نمایش داده می شود.

با توجه به اینکه هر سازه اپتیکی درواقع، فارغ از ناهمگونی یا نقص نیست، بنابراین نمای فیزیکی آن سازه "ویو-فرانت -غیر تخت" است. این ناهمگونیها قطعا بر کیفیت نور عبوری و تصویرحاصله اثر گذار است. ارزیابی و به تصویرکشیدن فیزیکی این ناهمگونیها نشانگر دقت کیفیت آن سازه است.

برخی از متخصصین چشم "ویو-فرانت" را نشانگر میزان کلی خطاهای اپتیکی یک چشم اعم از نزدیک بینی، دوربینی، آستیگماتیسم و سایرخطاهای انکساری که تا کنون توسط عینک یا کنتاکت لنز نیز اصلاح نمی شده، تعریف می کنند.

ویو-فرانت چگونه اندازه گیری می شود؟

درمعیانات چشمی، ویو-فرانت توسط دستگاهی به نام Aberrometer (ایبراهمی سنج) اندازه گیری می شود. دراین فرایند، بازتاب پرتوهای نوری تابیده به چشم پس ارزیابی و بزرگنمایی معایب موجود در آنها به صورت نقشه های رنگی نمایش داده می شود. هر رنگ نماینده حدی ازعیوب انکساری

چشم است.

همانطور که ازاسم "ایبراهمی سنج" استنباط می شود این دستگاه برای اندازه گیری ایبراهیهای سیستم بینایی و گزارش نقش آنها درشکست نور و تشکیل تصویر در چشم استفاده می شود. این ایبراهیهها نتیجه ناهمگنی و ناسازگاریهای ساختاری سیستم اپتیکی چشم است.

ایبراهیههای اپتیکی چشم به دو رده پایین (Low-Order) و رده بالا (High-Order) طبقه بندی می شوند. رده پایین شامل خطاهای کروی و آستیگماتیسم و رده بالا در برگیرنده سایر خطاهای اپتیکی ازقبیل کوما، تره فویل، ایبراهمی اسفریک و.... است.

Shack-Hartmann (SH) چیست؟ و چه تفاوتی با سایر تکنیکهای سنجش ویو-فرانت دارد؟ آیا یک نوع Adaptive Optic است؟

"شاک-هارتمن" فن آوری است که در اکثر ایبراهمی سنج ها استفاده می شود. در تکنیک شاک-هارتمن کل سیستم اپتیکی در یک لحظه ارزیابی شده و این امر موجب شده است که این تکنیک سریعتر از سایر روشهای ایبراهمی-سنجی باشد. سرعت بالای ارزیابی مانع از دخالت خطاهای ناشی از حرکت چشم در محاسبه و در نتیجه تکرار پذیری بیشتر آن می گردد. دقت بالای روش شاک-هارتمن مرهون تعداد بسیار بالای نقاط اندازه گیری آن است.

روش دیگر ایبراهمی سنجی روش ترسیم خطی (Ray Tracing) (است. این روش گرچه روش ظریفی در ایبراهمی سنجی است اما بدلیل اینکه در یک مرحله انجام نمی شود و نتیجه توالی چند مرحله است نیاز به زمان بیشتری دارد. از طرفی کمی تعداد نقاط اندازه گیری در این روش نسبت به روش شاک-هارتمن موجب کاستی دقت نسبی این روش می گردد.

یک سیستم Adaptive Optic از سه عنصر اصلی تشکیل شده است:

- حسگر ویو-فرانت
- الگوریتمها
- آینه تغییر شکل دهنده

در روش شاک-هارتمن تنها از دو عنصر اول و دوم استفاده می شود. بنابراین نمی توان آن را یک سیستم Adaptive Optic دانست.

چه تفاوتی بین ناهنجار-سنج و اتوریفرکتومترهای معمولی وجود دارد؟ چه تفاوتی بین ناهنجار-سنج و توپوگراف قرینه وجود دارد؟

فرق اساسی ایبراهمی سنج با اتوریفرکتومتر در این است که اتوریفرکتومتر معمولی تنها قادر به سنجش رده پایین (دوم)

ایبراهیهها می باشد درحالیکه یک ایبراهمی سنج رده های بالاتر را نیز ارزیابی می کند.

اتوریفرکتومتر میانگینی از وضعیت کیفی کانونی شدن نور در چشم را ارایه می دهد، درحالیکه ایبراهمی سنج میانگین وسیعتری را از بررسی نقاط بیشتر و آنالیز منطقه ای سیستم اپتیکی نتیجه می گیرد. باتوجه به ناهمگنی نقاط مختلف بخشهای اپتیکی چشم می توان به اهمیت این ارزیابی توسط ایبراهمی سنج پی برد. اتوریفرکتومتر تنها خطاهای اسفر و سیلندر را اندازه گیری می کند اما ایبراهمی سنج خطاهایی را که سابقا تحت عنوان آستیگماتیسم نامنظم شناخته می شدند و پیش از این قابل اندازه گیری نبودند را نیز شناسایی، تفکیک و اندازه گیری می کنند.

ساختار اپتیکی چشم از دو بخش مهم قرنیه و عدسی تشکیل شده اند. تفاوت اصلی ایبراهمی سنج با توپوگراف قرینه این است که توپوگراف قرینه صرفا کیفیت اپتیکی سطح قدامی قرنیه را مورد ارزیابی قرار می دهد در حالیکه ایبراهمی سنج ارزیابی کننده کل سیستم اپتیکی چشم اعم از قرنیه و عدسی است.

ایبراهیههای رده بالا کدامند؟ آیا همان آستیگماتیسم های نامنظمند؟ این ایبراهیهها چه تاثیری بر کیفیت بینایی ما دارند؟ ایبراهیههای رده پایین:

- ۱- رده اول: انحراف یا خطای منشوری
- ۲- رده دوم: غیرکانونی (کروی) و آستیگماتیسم (سیلندر)

ایبراهیههای رده بالا:

برخی از ایبراهیههای رده بالای مهم عبارتند از:

- ۱- رده سوم: خطاهای کوما و تریفویل
- ۲- رده چهارم: خطاهای کروییت و کوآتریفویل
- ۳- رده پنجم: پنتافویل و ...

تقریبا بیش از ۹۰٪ از خطاهای اپتیکی چشم ناشی وجود رده های پایین و مابقی حاصل وجود رده های بالای ایبراهمی در سیستم اپتیکی چشم است.

آنچه مسلم است چشمان همه ما دارای بخشهایی از خطاهای رده پایین و بالای ایبراهمی در سیستم بینایی است. عدسی های معمولی در اغلب موارد به دلیل اندکی نسبی خطاهای رده بالا نسبت به رده پایین می توانند ما در دستیابی به دید مطلوب یاری نمایند اما در برخی موارد تجویز عدسی معمولی، بدلیل تاثیر قابل ملاحظه ایبراهیههای رده بالا بر دیدمان هرگز رضایت کامل را بدنبال نخواهد داشت. خطای کروییت (Spherical aberration) و کوما (Coma) دو ایبراهمی بسیار مهم و تاثیرگذار رده بالا در سیستم بینایی ما هستند.

"آستیگماتیسم نامنظم" (Irregular Astigmatism) اصطلاحی است کلی که سابقا به هر نوعی از ایبراهیههای رده بالا اطلاق می شد. اما امروزه به مدد ایبراهمی سنج (Aberrometer) (می توان انواع آن را تفکیک و اطلاعات جزئی تری از آنان را بدست آورد.

یکی از دلایل اهمیت توجه به علم ویو-فرانت، وجود ایبراهیههای رده بالا و استفاده از ایبراهمی سنج برای بررسی دلیل تشدید نزدیک بینی، همراه با بزرگتر شدن اندازه مردمک چشم است! نزدیک بینی نوعی خطای کروییت است. این بدان معناست که در چشم نزدیک بین، قدرت یک نقطه درسیستم نوری درهر فاصله ای که از محور بینایی باشد ثابت مانده و تفاوتی ندارد که اندازه مردمک چقدر باشد. حال آنکه در واقع با گشادتر شدن مردمک، قدرت کانونی افزایش یافته و بر میزان نزدیک بینی می افزاید.همچنین هاله ای دور نور پدیدآمده و این امر تاثیر بسیاری بر کیفیت دید می گذارد. این همان خطای کروییت است که جزو ایبراهیههای رده بالا طبقه بندی شده و توسط اتوریفرکتومترهای معمولی یا روشهای رتینوسکوپی قابل ارزیابی نیست و لذا توسط عدسی های معمولی نیزاصلاح نمی گردد.

با ارزیابی نزدیک بینی چشم توسط ایبراهمی سنج بروش ویو-فرانت ملاحظه خواهید کرد که مقدار کلی نزدیک بینی با تغییرات اندازه مردمک متغییر است. دلیل این تغییر وجود خطای کروییت (Spherical Aberration) درسیستم نوری چشم است. بنابر این نتیجه می گیریم که حتی در تجویز اصلاح نزدیک بینی هم باید وجود ایبراهیههای رده بالا در نظر گرفته شود تا افراد نزدیک بین در شرایط نوری کم دچار افت بینایی و مشاهده هاله دور نور نشوند.

زرنیکه (Zernike) چیست؟ و به چه کار می آید؟

آقای Fritz Zernike فیزیکدان برنده جایزه نوبلی است که با محاسبات ریاضی توانست تعاریف دقیقی از معادلات چندجمله ای و پیچیده ویو-فرانت سیستمهای اپتیکی ارایه دهد. وی نشان داد که با تعریف معادلات چند جمله ای معین و ترکیب آنها می توان پیچیدگی ایبراهیههای اپتیکی را بروش ویو-فرانت توصیف نمود.

با تحلیل زرنیکه می توان بروش ریاضی، وزن و اهمیت هر رده از ایبراهیهها را تبیین و جمع جبری آن را بصورت نمودار یا اعداد به تصویر کشید. جمع جبری این اوزان را ضریب زرنیکه (Zernike coefficient) و معمولا با واحد میکرون نمایش می دهند.

هرردیف ازهرم زرنیکه نماینده رده ای از ایبراهمی بوده وازسطوح سه بعدی ای تشکیل شده که هریک توصیفی فضایی از یک ایبراهمی است. به عنوان مثال رده دوم، توصیف کننده ایبراهیههای شایع عدم کانونی شدن نور بروی شبکیه (دوربینی و نزدیک بینی) و آستیگماتیسم است. رده های بالاتر از دو، نماینده ایبراهیههای است که اغلب موجب تشکیل هاله دور نور، خیره کنندگی و ... می شوند.

معادلات چندجمله ای زرنیکه به ما کمک می کنند تا داده های فن آوری ویو-فرانت را ساده کرده و پس از ترکیب تمامی ایبراهیهها، در یک نقشه به آسانی نشان دهیم. این نقشه را که

شرکت آذر لنز نماینده انحصاری تولید، توزیع و فروش عدسی‌های رودنستوک در ایران

Progressiv Pure Life Progressiv Pure Life Xs



بهترین مصرف‌کنندگان عدسی تدریجی:

- افرادى که به تازگی جهت مطالعه نیاز به عینک دارند و سن آنها بالاتر از ۴۰ سال می‌باشد.
- افراد تحصیل کرده (به علت درک نحوه استفاده، دید در عدسی تدریجی را سریع‌تر و راحت‌تر تجربه می‌کنند).
- کسانی که به زیبایی اهمیت می‌دهند.
- کسانی که از پرش تصویر در عدسی‌های دو دید احساس ناراضی می‌کنند و نیاز به آرامش دارند.

با انتخاب عدسی تدریجی Pure Life رودنستوک به مشتری خود، دید راحت و مناسب برای همه فواصل بینایی را هدیه می‌دهید.

Azar Lens agent for Rodenstock lenses in Iran



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آیا کاربری ابیراهی سنج شاک-هارتمن دشوار است؟
کار با ابیراهی سنج شاک-هارتمن به سادگی کار با اتوریفرکتومتر است. هر روزه مقالات بسیاری در این زمینه نوشته می‌شود. یادگیری تجزیه و تحلیل نتایج حاصله بسته به دانش اولیه شما داشته و ممکن است به چند هفته زمان نیاز داشته باشد.

چرا ابیراهی سنجی ویو-فرانت از جمله اصول معاینات چشمی پیشرفته به حساب می‌آید؟

امروزه فن آوریهای بسیاری در مراقبتهای چشمی دخیل هستند. ابیراهی سنجی یکی از جدیدترین این فن آوریهاست که برای اولین بار اندازه‌گیری ابیراهیهای رده بالا را در کلینیک ممکن نموده است. در ابتدا از ابیراهی سنج تنها در جراحی‌های انکساری لیزری استفاده می‌شد اما به مرور به اهمیت آن در معاینات روزمره و تجویزهای غیر جراحی انکساری بیشتر پی برده می‌شود.

جراحی لیزریک و لنز داخل چشمی از شناخته شده ترین روشهای اصلاح اپتیکی هستند که از دانش ویو-فرانت در آنها استفاده می‌شود. امروزه تلاشهای بسیاری برای استفاده از ویو-فرانت در ساخت و تجویز عدسیهای تماسی و عینک انجام می‌گیرد. ابیراهی سنج نقش کلیدی در این تحقیقات داشته و یقیناً از اصلی ترین موضوعات در پیشرفتهای آتی علم اپتومتری است.

چه نوع ابیراهی سنج شاک-هارتمن و چه موقعی باید مورد استفاده قرار گیرد؟

همه ابیراهی سنج های شاک-هارتمن مثل هم نیستند. سازندگان مختلف دستگاههایی با دقت، دامنه عملکرد، کاربری در اندازه مردمکی مختلف و مشخصات و تواناییهای آنالیزی متفاوت می‌سازند. دو شاخصه مهم در انتخاب یک ابیراهی سنج دقت و دامنه آن است.

دقت: دقت ابیراهی سنج ارتباط مستقیم با تعداد نقاط اندازه‌گیری و پراکندگی آن دارد. هرچه تعداد نقاط اندازه‌گیری (حسگر) بیشتر و فاصله آنها از یکدیگر کمتر باشد دقت ابیراهی سنج بیشتر است. به عنوان مثال تعداد نقاط اندازه‌گیری در ابیراهی سنج HRK-8000A ساخت شرکت هویتز ۱۲۲ عدد است. گاهی اوقات سازندگان برای ارتقا رزولوشن اپتیکی دستگاه خود از الگوریتمهای نرم افزاری الحاقی نیز کمک می‌گیرند.

دامنه: دامنه عملکرد یک دستگاه به قابلیت حسگرهای ویو-فرانت آن در تشخیص انواع ابیراهیها بستگی دارد. یک راه خوب برای تعیین دامنه عملکرد یک دستگاه، توجه به محدوده آستیگماتیسمی است که توسط آن قابل اندازه‌گیری است. ابیراهی سنجهایی که حسگرهای ویو-فرانت آنها از دقت کمی برخوردارند قادر به تشخیص و سنجش ابیراهیهای همچون کراتوکونوس، زخمهای قرنیه و ابیراهیهای رده بالای شدید نیستند.

معمولاً به صورت دو بعدی است و از رنگ برای نمایش مقدار ابیراهی استفاده می‌کند، نقشه ویو-فرانت می‌نامند. معادلات چندجمله‌زنی که را می‌توان به شکل هرمی نمایش داد که راس آن صفر (فاقد ابیراهی) است و هر چه پایین ترمی آیییم تعداد و تنوع ابیراهیهای بیشتری در آن مشاهده می‌شود.

RMS چیست؟ مقدار RMS چشم سالم معمولی چقدر است؟

RMS مخفف Root Mean Square است. این اصطلاح در ارتباط با چند جمله‌ایهای زرنیکه کاربرد دارد و جمع درجه دوم ضرایب زرنیکه برای نمایش قدرت ابیراهیها در سیستم اپتیکی است. برای مثال RMS رده بالا نشان دهنده که جمع کل ابیراهیهای رده بالا در چشم چقدر است. زمانیکه از RMS کل سخن گفته می‌شود، منظور جمع کل قدرت ابیراهیهای چشم است اعم از رده پایین (اسفر-سیلندر) و رده های بالا است.

در چندجمله‌ای زرنیکه راه صحیح تجمیع ابیراهیها، گرفتن ریشه میانگین مربع (Root Mean Square) آنهاست. ابیراهی سنجها میزان RMS را با دقت ۰,۰۱ میکرون اندازه‌گیری و نمایش می‌دهند.

خوشبختانه دقت بالای ابیراهی سنج ها تفکیک و اندازه‌گیری ابیراهیها را بیش از آنچه تا کنون در کلینیک های چشم انجام می‌گرفته امکان پذیر ساخته اند. با RMS بدست آمده از این دستگاه می‌توان محاسبات ریاضی ابیراهی چشم را براساس چندجمله‌ای زرنیکه بازسازی نمود.

چگونه از ویو-فرانت برای اندازه‌گیری تطابق چشم استفاده می‌شود؟ اهمیت این موضوع چیست؟

برای اندازه‌گیری میزان تطابق توسط ابیراهی سنج از یک تارگت داخلی استفاده می‌کنیم. این تارگت با فاصله و دفعات معینی از دور به سمت چشم حرکت داده می‌شود تا میزان قدرت کانونی کردن تصویر روی شبکه یا تطابق چشم مورد ارزیابی قرار گیرد. با اندازه‌گیری میزان کانونی نشده تصویر روی شبکه چشم می‌توان به حداکثر قدرت تطابق چشم پی برد. بدین وسیله قادریم تغییرات اجزای اپتیکی همراه تطابق را اندازه‌گیری و تجزیه و تحلیل کنیم. این اجزا ممکن است میزان خطای کرویت در نزدیک (پیرچشمی)، آستیگماتیسم و یا حتی خطاهای رده بالا در دید نزدیک باشند.

با افزایش میانگین سنی جوامع بشری، پیرچشمی رفته رفته سهم بیشتری در مشکلات بینایی را به خود اختصاص می‌دهد. داشتن ابزاری که به تواند کم و کیف این وضعیت را به دقت و به روش ابژکتیو ارزیابی نماید، بیش از پیش ضروریست. ابزاری که نه تنها میزان کانونی نشدن، بلکه تغییرات رده بالای ابیراهی همراه تطابق را که برای دید نزدیک بوجود می‌آید نیز ارزیابی نموده و ما را در دستیابی به حداکثر کیفیت بینایی یاری نماید.

سندرم چشم خشک بخش دوم : DRY EYE Syndrome

به قلم: دکتر بهرام بهروزی هما - اپتومتریست و عضو هیئت علمی انستیتو مراقبت های بینائی - دبی



دکتر بهرام بهروزی هما

بیماری شایع خشکی چشم (چشم خشک) که هنوز هم کاملاً شناخته نشده، وضعیت بالینی است که علت شناسی و درمان آن سالهاست که متخصصان و محققان را به چالش کشیده است. البته پیشرفت های بسیاری در درک این بیماری طی ده سال گذشته در زمینه های اپیدمیولوژی، پاتوژنز، تظاهرات بالینی و نحوه درمان، انجام گرفته است. این مقاله نتیجه تلاش بی وقفه بسیاری از پژوهشگران طی یک دوره طولانی جمع آوری داده ها، ارائه گزارش در قالب کنفرانس،

همانگ سازی و تعامل اطلاعات میباشد

با توجه به گسترده بودن مبحث چشم خشک این نوشته در چند بخش تنظیم گردیده است.

در شماره پیش و در بخش اول به تشریح علل و طبقه بندی عوامل موثر در خشکی چشم پرداخته شد. در این شماره و در بخش دوم به انواع روشهای تشخیصی خشکی چشم اعم از روشهای کلینیکی و برخی شیوه ها که بیشتر کاربرد تحقیقاتی دارند اشاره می شود.

خشکی چشم اگرچه در انواع خفیف تر آن ممکن است به درمان علامتی بخوبی جواب دهد ولی اخیراً درمانهای دارویی در جهت کند کردن، متوقف نمودن و یا برگرداندن روند پیشرفت آن تلاش می کنند. در نتیجه روشهای تشخیصی افتراقی برای شناسایی عوامل موثر، شدت بیماری، اندازه گیری دقیق و میزان تاثیر آن بر روی کیفیت زندگی بیمار از اهمیت بسزائی برخوردار هستند. از طرفی دیگر این روشها باید بتوانند افرادی را که بالقوه در معرض ابتلا به خشکی چشم بدون داشتن هیچگونه علامت کنونی قرار دارند را شناسایی کنند. برای نمونه افرادی که جهت انجام جراحی انکساری (لیزیک) کاندید میشوند بایستی وضعیت ثبات اشکی آنها جهت جلوگیری از کراتیت بعد از عمل (Post Lasik symptomatic keratitis) و طولانی شدن زمان بهبودی ارزیابی گردد.

توجه به علائم ذکر شده توسط بیمار (Symptoms) و نه فقط نشانه ها (Signs) یکی از مهمترین پایه های تشخیص خشکی چشم بر مبنای Screening میباشد. بطوریکه یکی از این روشها تنها بر اساس استفاده از برخی پرسشگرهای معتبر همچون McMonnies، Schein، OSDI، CANDEES، DEQ، IDEEL انجام میشود که ابزاری فوق العاده ارزشمند در خدمت متخصصین در کلینیک ها و محققان میباشد. قابل ذکر است که روشهای Screening باید ساده، قابل استفاده در سطح وسیعی از مردم و ارزان باشند.

McMonnies Questionnaire

این روش به منظور Screening و بررسی احتمال خشکی چشم

و افزایش ضریب تشخیصی متخصصین استفاده میشود. البته واضح است که برای تشخیص قطعی بایستی با سایر روشهای کلینیکی توأم گردد. پرسشگر McMonnies از حدود ۱۴ سؤال تشکیل شده که مهمترین آنها عبارتند از:

- میزان سن و در صورت استفاده از عدسی تماسی، نوع آن
- وجود هرگونه درمان قبلی خشکی چشم
- وجود علائم چشمی مانند قرمزی، خشکی، سوزش، درد، خارش و غیره
- وجود علائم مذکور بطور دائمی و یا گاهگاهی
- هرگونه تحریک چشمی بعد از شنا
- استفاده از داروهایی مانند انواع آنتی هیستامین ها، داروهای درمان فشار خون، خواب آورها، آرام بخش ها، قرصهای ضد بارداری، و درمان هورمونی (HRT)
- حساسیت چشمی به دود سیگار، هوای کولر و یا بخاری و غیره
- هرگونه خشکی دهان، گلو، سینه و غیره
- ابتلاء به بیماری Arthritis
- اختلال غده تیروئید
- باز بودن چشم در هنگام خواب
- تحریک چشمی متعاقب بیدار شدن

در ازای پاسخ به این سئوالات نمراتی بین ۴۵ - ۰ داده میشود. نمرات بیشتر از ۱۴،۵ نشاندهنده خشکی چشم میباشد.

لازم به ذکر است که بررسی وضعیت لایه اشک با استفاده از شیوه های گوناگون بایستی حتی الامکان بصورت غیر تهاجمی (Non invasive) انجام شود. روشهای کلینیکی بررسی خشکی چشم عمدتاً یا میزان کمی لایه اشک و یا میزان کیفی آنرا اندازه گیری می کنند.

Schirmer Test

این روش که در سال ۱۹۰۳ معرفی شده، بطور گسترده ای در جهت تعیین میزان کمی لایه اشک کاربرد کلینیکی داشته و همچنان دارد. در عین حال انتقاد های بسیاری نیز به موثر بودن این روش وارد شده است. ماهیت تهاجمی آن اغلب باعث تحریک ترشح رفلکسی اشک شده، امکان تکرار همزمان آن و در نتیجه میزان دقت آنرا کاهش داده و ارزش تشخیصی آن را زیر سؤال می برد.

در این روش که عمدتاً بدون استفاده از داروی بی حسی صورت میگیرد یک فیلتر کاغذی را (۵x۳۵mm) داخل پلک تحتانی بین قسمت میانی و خارجی



آن قراردادده و از معاینه شونده خواسته می شود که ترجیحاً چشمها را بسته نگاهدارد. اگر میزان جذب اشک توسط فیلتر پس از پنج دقیقه برابر با ۵،۵mm (سایر مطالعات ۵mm) و یا کمتر باشد تشخیص قطعی خشکی چشم داده میشود.

زمان انجام این تست در ساعت معینی از روز، حرارت، رطوبت هوا، سرعت جریان هوا و میزان نور محیط بر روی نتایج تست موثر میباشد. بطور معمول در نتایج این روش بین خانمها و آقایان اختلاف قابل ملاحظه ای دیده نشده ولی بطور کلی میزان طبیعی آن که ۱۵mm در پنج دقیقه می باشد با بالا رفتن سن کاهش می یابد.

Phenol Red Thread Test

این روش از امتیاز یک شیوه کمتر تهاجمی در مقایسه با روش Schirmer برخوردار بوده و با استفاده از یک نخ دو لایه پنبه ای آغشته به فنل قرمز انجام میگردد. از آنجائیکه فنل قرمز به تغییر PH حساس بوده، در هنگام تماس با اشک، بعلت خاصیت قلیائی اشک (۷،۴:PH) از رنگ زرد به قرمز تغییر می نماید. جهت انجام این تست انتهای پیچیده شده این نخ که به طول ۷۰ میلیمتر میباشد را در ناحیه خارجی کیسه ملتحمه تحتانی قرار میدهیم. در حالیکه چشمها بسته نگاه داشته میشود، بعد از پانزده ثانیه نخ از چشم خارج گشته و میزان تغییر رنگ در طول آن به به میلیمتر اندازه گیری میشود. در حالت طبیعی این تغییر رنگ بین ۲۰ - ۹ میلیمتر بوده و مقادیر کمتر از ۹ میلیمتر نشاندهنده خشکی چشم میباشد.



Inferior Tear Prism Height

(Tear Meniscus Height) ارتفاع هلال اشکی تحتانی

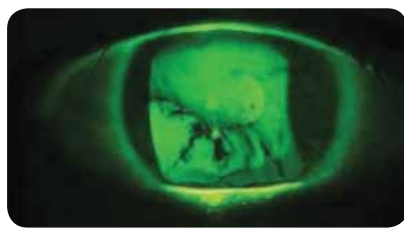
اندازه گیری هلال اشکی در لبه پلک تحتانی راهنمای بسیار مفیدی جهت بررسی کمی لایه اشک میباشد. در این روش از بیومیکروسکوپ استفاده میشود. این شیوه لازم است که بلافاصله در ابتدای معاینه چشم انجام گیرد و حتی الامکان از تابش نور شدید و طولانی مدت به چشم جهت جلوگیری از خشک شدن و یا تحریک رفلکسی اشک پرهیز شود. در این حالت از گراتیکول عدسی چشمی بیو میکروسکوپ برای اندازه گیری ارتفاع هلال اشکی استفاده میشود. اندازه گیری کمتر از ۰،۲۰ mm (برخی منابع ۰،۱۸mm) با خشکی چشم همراه می باشد. نتیجه یک پژوهش حاکی از آن دارد که ۴۳٪ افراد دارای ارتفاع هلال اشکی حدود ۰،۲۲mm میباشد.

بسیاری از متخصصین بصورت تخمینی و تنها با مشاهده هلال اشکی آنرا بصورت Minimal, Normal, Excessive تقسیم بندی و ارزیابی می کنند. همچنین میتوان نور بیومیکروسکوپ را بصورت افقی به چشم تابانده و سپس آنرا در لبه پلک پایین به اندازه ارتفاع هلال اشکی باریک نموده و از روی درجه بیومیکروسکوپ میزان ارتفاع را محاسبه کرد. بعضاً برای مشاهده بهتر هلال اشکی میتوان از قطره فلوروسین استفاده نمود که در این حالت اندازه گیری کمتر از ۰،۳۵mm غیر طبیعی محسوب می شود. البته باید اطمینان حاصل

کرد که معاینه شونده کاملاً به روبرو و بطور مستقیم نگاه میکند زیرا ارتفاع ظاهری هلال اشکی به وضعیت نگاه بستگی دارد.

شیوه دیگر که بیشتر کاربرد تحقیقاتی دارد با استفاده از بیومیکروسکوپ و یک دستگاه پروژکتور چرخان که نوارهای سیاه و سفید (چهارنوارسیاه و پنج نوارسفید به عرض چهار میلیمتر) را توسط یک آینه مخصوص به قسمت مرکزی هلال اشکی تابانده و سپس تصاویر حاصل از این تابش توسط یک ویدیو دیجیتال ضبط شده و به کامپیوتر دارای نرم افزار مناسب منتقل میشود که با استفاده از فرمول آینه مقعر شعاع انحنای هلال اشکی را محاسبه می نماید. اندازه گیری شعاع انحنای کمتر از ۰،۲۵mm غیر طبیعی محسوب میگردد. آزمایشات در افرادی که خشکی چشم آنها با کاهش ارتفاع هلال اشکی همراه است نشان داده که استفاده از پلاگ مجرای اشکی باعث افزایش ارتفاع هلال اشکی و بهبود علائم خشکی چشم می گردد. برخی مطالعات نیز کاهش ارتفاع هلال اشکی در افرادی که تحمل استفاده از عدسی تماسی را ندارند نشان داده اند.

Tear Film Break up Time (TFBUT) (BUT) (FBUT) زمان گسستگی لایه اشک



این روش جهت بررسی کیفی و تعیین میزان ثبات لایه اشک با استفاده از فلوروسین انجام میشود. در این حالت نوار آغشته به فلوروسین را ابتدا با یک قطره نرمال سالین مرطوب کرده و سپس آنرا تکان داده و به آرامی با ملتحمه تماس داده میشود. باید توجه داشت که این روش نیز

تهاجمی محسوب شده و تماس نوار فلوروسین با چشم میتواند سبب تحریک رفلکسی اشک شود بعلاوه اینکه اضافه شدن فلوروسین به اشک باعث تغییر تعامل فیزیکی لایه های اشک، کاهش ثبات و کشش سطحی آن میگردد.

برخی نیز برای اجتناب از تحریک احتمالی چشم، پس از خیس کردن نوار فلوروسین، بدون تماس با چشم قطره ای از آن را در ملتحمه تحتانی ریخته و زمان گسستگی را اندازه گیری می کنند. جهت بالا بردن دقت این روش بهتر است از فلوروسین ۰۱ - ۰۲ به میزان ۵µl استفاده کرده و سه بار اندازه گیری نمود. استاندارد بودن مقدار فلوروسین دارای اهمیت است زیرا برخی مطالعات نشان داده است که افزایش میزان فلوروسین از ۱µl - ۲،۷µl سبب افزایش زمان TFBUT میشود. پس از ریختن فلوروسین بایستی بدون فشار به چشم چند بار پلک زده، تا فلوروسین در مایه اشکی بطور یکسان توزیع شود. پس از حدود ده تا سی ثانیه از بیمار خواسته میشود که مستقیم نگاه کند و پلک نزند. در اینجا بزرگنمایی بیومیکروسکوپ را روی ۱۰X قراردادده، روشنایی زمینه را ثابت نگاه داشته و با استفاده از نور آبی کبالت و فیلتر زرد (Wratten ۱۲) جهت بهبود کنتراست) و زمان سنخ، زمان بین آخرین پلک کامل و اولین ظهور نقاط عاری از اشک (سیاه رنگ) را ثبت می نمایم.

متوسط TFBUT برای افراد دارای ثبات اشک طبیعی حدود ده ثانیه بوده و برای مقادیر کمتر از پنج ثانیه تشخیص قطعی خشکی چشم داده می شود. البته در مواردی که از فلوروسین بیشتری استفاده

سندرم چشم خشک بخش دوم : DRY EYE Syndrome

شود زمان کمتر از ده ثانیه غیر طبیعی محسوب می‌گردد. لذا این شیوه بعلت استفاده از مقادیر متفاوت فلوروسین (گاهی تا ۵۰µl) و گرفتن زمان با شمارش و بدون استفاده از زمان سنج از تناقض بیشتری در نتایج برخوردار است.

Non-Invasive Break-up Time (NIBUT) روش های غیر تهاجمی گسستگی اشک

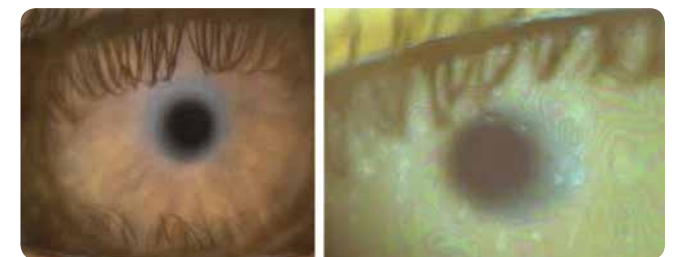
این روشها زمان بین آخرین پلک کامل و ظهور اولین گسستگی در لایه اشک را توسط کراتومتر معمولی و یا کراتومتر اصلاح شده، کراتوسکوپ دستی و یا Tearscope اندازه گیری می‌کنند. این شیوه ها در اساس اپتیکی بوده و اندازه گیری بوسیله مشاهده اعوجاج یا گسستگی انجام میگیرد. برای مثال حلقه های کراتومتر جهت تغییر شکل و یا گسستگی در آنها متعاقب توقف پلک زدن مورد مشاهده قرار میگیرند. مطالعات بسیاری نشان داده اند که متوسط زمان اندازه گیری شده بصورت غیرتهاجمی (NIBUT) طولانی تر از FBUT (فلوروسین) بوده و غالباً بین ۲۰ تا ۳۰ ثانیه میباشد و اندازه گیری های کمتر از ۱۵ ثانیه غیرطبیعی و کمتر از ۱۰ ثانیه بطورقطع خشکی چشم محسوب میشود. روشهای غیر تهاجمی، بیمارمدار، قابل تکرار و نسبتاً دقیق میباشد ولی همچنان باید مراقب بود که از تحریک رفلکسی اشک اجتناب شود.

Specular Reflection Observation

در این روش کیفیت لایه اشکی و بخصوص لایه چربی آن با استفاده از متد Specular Reflection در بیومیکروسکوپی، بدون استفاده از رنگ مورد ارزیابی قرارمیکرد.

Narrow-Field Specular Reflection

دراینجا بوسیله بزرگنمایی بالا رفلکس نور بازتابیده شده از سطح قرنیه و متعاقب آن لایه اشکی را مورد ارزیابی قرارمی دهند. شدت نور بایستی جهت جلوگیری از خشک شدن مصنوعی اشک کاهش یابد. اشکال عمده این روش کوچک بودن نسبی ناحیه مورد مشاهده در سطح قرنیه میباشد.



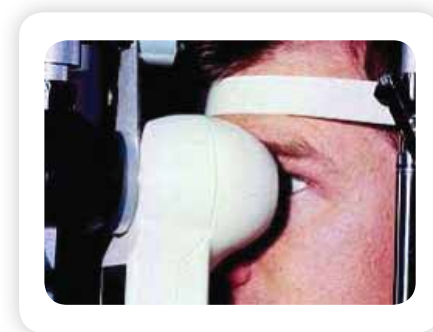
Tear Film Lipid Layer Interferometry

از این شیوه جهت تشخیص کمی خشکی چشم (Aqueous tear deficiency) (ATD) و یا اختلال در لایه چربی اشک بکار میرود. در این حالت لایه چربی اشک توسط یک دوربین مخصوص (Tear

interference camera) مشاهده شده و تصاویر تداخلی حاصله بر اساس شدت خشکی چشم درجه بندی و یا جهت ارزیابی ضخامت لایه چربی اشک با استفاده از جدول مقایسه رنگها مورد تحلیل قرار میگیرند. در انجام این روش درفاصله زمانی بین پلک زدن، زمان توزیع لایه چربی هنگام باز شدن چشم تا توقف توزیع چربی اندازه گیری میشود. در اینجا چگونگی پلک زدن بر روی تصاویر تداخلی تأثیر داشته و لذا پلک زدن بطور طبیعی اهمیت دارد. در این شیوه کیفیت لایه چربی اندازه گیری نمی‌شود.

Tearscope

با توجه به اینکه روش Interferometry اشک بطور گسترده ای کاربرد تحقیقاتی دارد، میتوان آن را با استفاده از Tearscope همراه با بیومیکروسکوپ بصورت کلینیکی بکار برد. این دستگاه از دو محفظه نیم کره ای تشکیل شده با یک سوراخ مرکزی جهت مشاهده و یک منبع نوری کاتودیک سرد که میزان خشک شدن اشک را در هنگام



انجام تست به حداقل میرسانند. نور مذکور بصورت پراکنده (Diffuse) (بوده و احتیاج به متمرکز شدن ندارد. این دستگاه باید حتی الامکان به چشم نزدیک باشد تا وسعت ناحیه مورد معاینه وسیعتر شود. این شیوه علاوه بر اندازه گیری غیر تهاجمی ثبات لایه اشکی (NIBUT) میتواند با استفاده از تفسیر طرح های تداخلی تشکیل شده بر روی سطح قرنیه " که البته احتیاج به تمرین فراوان دارد" کیفیت لایه اشکی و بخصوص لایه چربی اشک را مورد بررسی قرار دهد.

Tear Osmolarity

ارتباط تنگاتنگ بین خشکی چشم و اسمولاریتی اشک سالهاست که مورد مطالعه پژوهشگران قرار گرفته است. Gilbert در سال ۱۹۷۸ ارتباط بین اسمولاریتی بالای اشک و کراتیت سیکا را ثبت نمود. او و سایر محققین همچنین نشان دادند که برداشتن منافذ غده میبومین در خرگوش باعث افزایش اسمولاریتی اشک میشود. Holly و Lambert در سال ۱۹۸۱ اثرات مثبت قطره های hypotonic را در درمان خشکی چشم منتشر کردند. Begley در سال ۲۰۰۹ ارتباط محکمی بین بالا رفتن اسمولاریتی و عدم ثبات اشک یافت. Khannal در سال ۲۰۰۸ نتیجه گرفت که اندازه گیری اسمولاریتی اشک موثرترین روش تشخیص خشکی چشم میباشد.

اخیراً با معرفی دستگاه Tear lab osmometer امکان اندازه گیری اسمولاریتی لایه اشک بطور کلینیکی فراهم شده است. Tomlinson در مطالعات خود در سال ۲۰۱۰ نشان داد که اندازه گیری های بدست آمده توسط روش متداول Freezing point depression با نتایج بدست آمده از دستگاه Tear lab osmometer همخوانی قابل ملاحظه ای دارد. روش دیگر متداول در اندازه گیری میزان اسمولاریتی اشک استفاده از OcuSense Osmometer بوده به این ترتیب که توسط میکروپپیت ذره ای از اشک را گرفته و سپس

آنرا بر روی میکروچیپ دستگاه منتقل کرده که میزان اسمولاریتی را اندازه گیری میکند. بایستی مجدداً خاطر نشان کرد که زمان انجام این تست در طول روز، رطوبت و سرعت جریان هوا، حرارت محیط و میزان نور در محیط روی نتایج بی تأثیر نیست. ضمن اینکه باید از تحریک رفلکسی اشک نیز اجتناب نمود. اسمولاریتی اشکی که بطور رفلکسی ترشح شود تا میزان ۵۰ کمتر است. میزان اسمولاریتی اشک بطور طبیعی حدود ۳۱۸mOsm میباشد.

Meibometry

این شیوه برای تشخیص اختلال در غده میبومین (Meibomian gland dysfunction) (MGD) بکار میرود.

با استفاده از یک نوار پلاستیکی مقداری چربی از لبه پلک تحتانی برداشته و توسط تراکم سنج اپتیکی (Optical densitometry) میزان ثبات لایه چربی اندازه گیری میشود. در اینجا با استفاده از بیومیکروسکوپ و در نگاه به بالا پلک تحتانی بدون فشار روی تارس کمی پایین کشیده میشود و نوار را بوسیله نگاهدارنده تونومتر روی قسمت مرکزی لبه پلک به مدت سه ثانیه تماس داده و سپس آنرا به مدت سه دقیقه در معرض هوا قرار میدهیم و در نهایت میزان افزایش شفافیت ایجاد شده توسط لکه چربی روی نوار را بوسیله میبومتر لیزری اندازه گیری میکنند. باید در نظر داشت که میزان چربی لایه اشک در اولین ساعت بعد از بیداری در بالاترین حد خود بوده و بعد از آن به اندازه ثابت خود درطول روز میرسد. از اشکالات این روش یکسان نبودن انسداد غده میبومین در امتداد پلک بوده و اندازه گیری قسمت مرکزی آن تصویر کاملی از وضعیت لایه چربی ترشح شده توسط کل پلک را نمیدهد و لذا لازم است که نمونه برداری در طول پلک صورت گیرد.

Meibography / Meiboscopy

این تست جهت ارزیابی مورفولوژیک، میزان تراکم و کم کاری غده میبومین و تشخیص MGD انجام میشود. از روشهای متداول، استفاده از نور سفیدی است که توسط Finoff transilluminator بر قسمت پوششی پلک برگشته تابیده میشود واز طریق مشاهده سطح ملتحمه غده میبومین (Meiboscopy) بررسی میگردد. در انواع دیگر این روش از فوتوگرافی مادون قرمز و یا ویدیو فوتوگرافی برای ضبط تصاویرغده (Meibography) و ارزیابی آن استفاده میشود. این متد بخصوص در افراد دارای سندرم Ectodermal dysplasia کاربرد فراوانی دارد.

Tear Stability Analysis (TSAS)

روشی غیرتهاجمی و ابژکتیو جهت ارزیابی ثبات لایه اشک و مقایسه آن با روش Break up time از نظر میزان حساسیت و Specificity میباشد. در این روش از توپوگراف استفاده شده و از معاینه شونده خواسته میشود که برای مدت ده ثانیه پلک نزنند. دستگاه، توپوگرام های قرنیه را به فاصله یک ثانیه و به تعداد یازده بار ثبت کرده و آنها را بوسیله نرم افزارمخصوص مورد بررسی قرار میدهد. علیرغم غیر تهاجمی بودن آن هنوز دقیقاً مشخص نیست که این ارزیابی ثبات لایه اشک مختص به لایه چربی و یا تمامی اشک بوده، ضمن اینکه به لحاظ اقتصادی گران تر از سایر روشهای غیرتهاجمی میباشد

Brush cytology

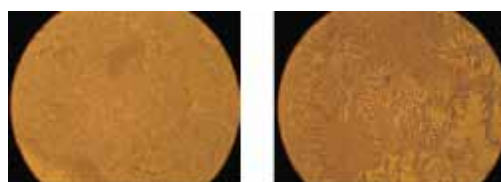
از این روش برای تشخیص انواع مختلف بیماریهای سطح چشم بطور کلینیکی و توسط نمونه برداری از سلولهای اپی تلیال ملتحمه انجام میشود. در اینجا بر خلاف روش Impression cytology سلولهای بازال و سطحی همزمان جهت تشخیص Squamous metaplasia ، کشف سلولهای التهابی و بدست آوردن نشانگر های مختلف موجود در اپی تلیوم سطح چشم استفاده میگردد و با وجود اینکه روشی نسبتاً تهاجمی است برای تشخیص اختلالات ملتحمه موثر میباشد. روشی دیگر

Flow cytometry in impression cytology

ارزیابی نشانگرهای سلولهای اپی تلیال ملتحمه و یا شناسایی سلولهای التهابی و سلولهای گوبلت بسیار موثر بوده و جهت بررسی خشکی چشم، آلرژی ها و اثرات قطره های ضد گلوکوم بکار گرفته میشود.

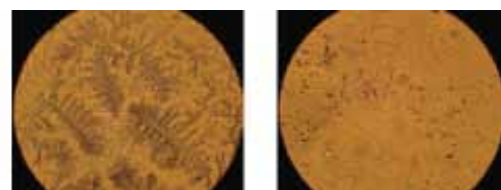
Ferning Test

این تست جهت بررسی کیفی اشک (غلظت الکترولیت ها)، تشخیص keratoconjunctivitis sicca و هایپر اسمولاریتی، توسط برداشتن یک قطره اشک از هلال تحتانی پلک و قراردادن آن در زیر میکروسکوپ پس از خشک شدن انجام گرفته و طرح های گوناگون کریستالیزه شده (Ferning) آن طبقه بندی میشود. روش انجام تست به این ترتیب است که بوسیله یک میکروپپیت در نور کم به مقدار یک میکرولیتر از اشک را گرفته و سپس روی اسلاید میکروسکوپ قرار داده و به مدت ده دقیقه در دمای ۲۰ خشک می کنند. طرح های کریستالیزه شده بر مبنای اندازه و نوع آرایش درختی، کامل و یا ناقص بودن آنها به چهار دسته طبقه بندی می شوند که نوع اول و دوم طبیعی بودن اشک و نوع سوم و چهارم نشاندهنده غیر طبیعی بودن آن میباشد. در تمام این روشها باید نهایت دقت بعمل آید که تحریک رفلکسی اشک صورت نگیرد.



Pattern I

Pattern II



Pattern III

Pattern IV

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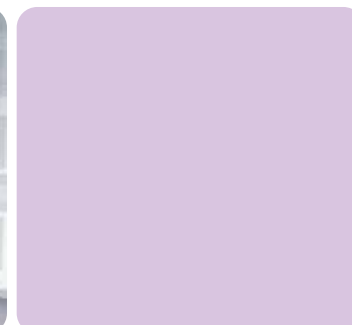
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سندرم چشم خشک بخش دوم : DRY EYE Syndrome

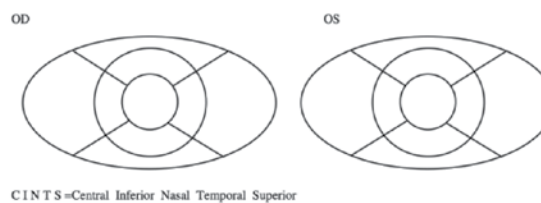
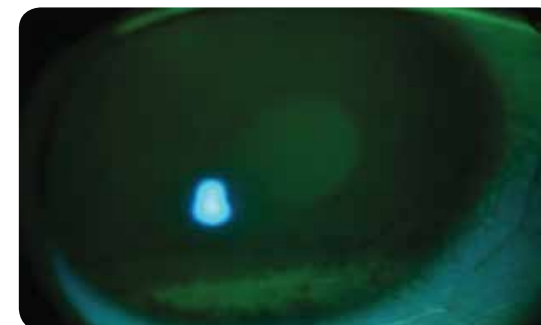
گرفته و آنرا خشک نموده و با توجه به اینکه میزان کمی اشک شدت رنگ فلوروسین را تغییر می دهد شدت تغییر رنگ نوارمورد نظر را با استفاده از فیلتر های درجه بندی شده استاندارد در رنگهای مختلف مقایسه میکنند. اگر TFI کمتر از ۴۰ باشد تشخیص خشکی از نوع SS داده میشود.

Grading Staining

این شیوه برای بررسی خشکی چشم از طریق مشاهده ناحیه و میزان آسیب به سطح چشم با توجه به وسعت و عمق رنگ پذیری (Staining) آن با فلوروسین، Rose Bengal و یا Lissamine green و مقایسه آن با نمودارهای استاندارد بکار گرفته میشود. از روشهای متداول از این نوع می توان به الگوی Cleck و Oxford اشاره نمود. در حالیکه فلوروسین نشان دهنده سلولهای از دست رفته اپی تلیال میباشد، استفاده از رنگهای دیگر مانند Lissamine Green و Rose Bengal نشانگر سلولهای

مرده و یا از کار افتاده میباشد. امتیاز لیسامین گرین برخلاف رز بنگال این است که افراد دارای چشم خشک را کمتر تحریک نموده و چشم طبیعی نیز با آن رنگ نمیشود. استفاده از فیلتر Red free (Wratten 25) سبب مشاهده بهتر لیسامین گرین میگردد.

همانطور که ملاحظه شد روشهای متعددی جهت تشخیص خشکی چشم وجود دارد و توصیه میشود که به منظور رسیدن به تشخیص قطعی و دقیق تر از نظر کیفی، کمی و میزان شدت خشکی چشم از چند روش توأماً بهره گرفت.



CINTS=Central Inferior Nasal Temporal Superior

Ocular Protection Index ضریب حفاظت چشمی

این متد جهت ارزیابی ضریب حفاظت چشمی و میزان خطر آسیب به سطح چشم بکار میرود. مبنای تست برای تعریف استوار است که اگر زمان گسستگی اشک (TFBUT) کمتر از فاصله زمانی بین پلک زدن (Inter blink interval) (IBI) باشد، خطر آسیب به سطح چشم افزایش می یابد. ضریب حفاظت چشمی (OPI) نسبت TFBUT به IBI می باشد.

اگر OPI کوچکتر از یک باشد خطر آسیب به قرنیه وجود دارد. ولی اگر برابر و یا بیشتر از یک باشد طبیعی بوده و سطح چشم از مصونیت برخوردار است. این نسبت با مطالعات کلینیکی نیز مطابقت داشته بطوریکه در معرض قرار گرفتن قرنیه بدون لایه اشک به قرمزی چشم و حتی کراتیت منجر میشود. برای انجام این تست در حالیکه معاینه شونده در حال نگاه کردن به چارت بینائی (ETDRS) است تعداد پلک زدن های او را به مدت یک دقیقه شمرده و آنرا تقسیم بر شصت میکنند. سپس میزان TFBUT را اندازه گیری نموده و تقسیم بر IBI میکنند.

Fluorophotometry (Fluorimetry) Tear Flow

Tear Turnover Rate

این شیوه جهت ارزیابی تغییرات جریان اشک در صورت وجود کمبود ترشح اشک (ATD) بوسیله اندازه گیری حجم و عملکرد اشک بکار میرود. در انجام این روش معاینه شونده پشت دستگاه فلوروترون نشسته و چشم او در مقابل اشعه اپتیکی دستگاه قرار میگردد. سه اسکن برای برقرار کردن اتوفلورسان قرنیه انجام میشود. یک میکرو لیتر فلوروسین ۲۵ در فورنیکس تحتانی چکانده میشود. اسکن های اولیه بعد از یک دقیقه و سپس هر دو دقیقه به مدت بیست دقیقه گرفته میشود. البته برای جلوگیری از دخالت اشک رفلکسی در ابتدای چکاندن قطره، غلظت فلوروسین تنها از اسکن های گرفته شده از دقیقه چهارم به بعد اندازه گیری میشود. کاهش فلوروسانس را هم می توان توسط فرمول مخصوص و یا نرم افزار مناسب روی کامپیوتر محاسبه نمود.

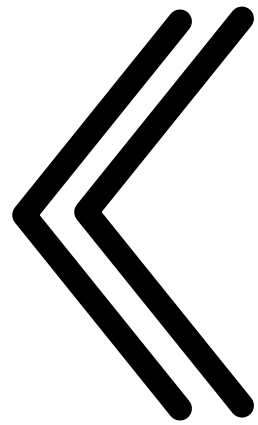
Tear Volume

در این حالت همان مراحل و اندازه گیری های ذکر شده در بالا جهت اندازه گیری حجم اشک استفاده میشود با این تفاوت که اسکن ها در هر دقیقه تنها به تعداد چهار بار گرفته میشوند.

Tear Function index ضریب عملکرد اشک

این روش جهت بررسی چگونگی پویایی تولید و تخلیه اشک و تشخیص خشکی چشم از نوع ATD مانند افراد مبتلا به Sjogren syndrome (SS) بکار میرود. یک نوار آغشته به فلوروسین را در بین قسمت میانی و خارجی پلک پایین به مدت سه دقیقه و در حالیکه چشمها بسته میباشد قرارداده و سپس محل خیس شدگی نوار را اندازه

ملحق فامس



Fashion Supplement

Alfred Dunhill Ltd.



Harland Miller, artist and author

Joseph Conrad's novel *Lord Jim* is about a guy who sails schooners. He's always at the wheel, dreaming of being a hero. He gets his chance to prove his heroism but he blows it, and spends the rest of his life looking for another chance. The moral of that book is: don't hold on to dreams of glory,

be spontaneous. If you make rigid plans, it doesn't allow for peripheral things that could be really interesting. Keep things loose and wide. Keep a little something back so you can stay impulsive.

Life is very short. That's not just a famous Beatles lyric: life is too short to get bogged down in irrelevance...

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OXYDO 2011 eyewear collection: authentic, personal and contemporary

The new OXYDO eyewear collection is dedicated to people who portray themselves through the spectacles they wear. This 'must have' item allows showing one's real self, where its innate seductive power goes beyond all fashions.

The collection is constantly evolving. The new sunglasses and optical frames are the result of on-going design research making the new OXYDO style authentic, personal and contemporary.

This new eyewear features innovative technical and stylistic solutions, a perfect combination of fashion and functionality. The innovative hook hinge (Registered Community Design), is the new distinctive motif of the collection and confers utmost linearity to the design of the models. The polarized lenses are available in numerous sunglass versions, ensuring perfect vision quality to this cutting-edge technical eyewear.

Innovative design – These new sunglasses feature a new hook hinge mechanism which represents a refined decorative element, concealed inside the temple. The two acetate models have a geometric shape (mod. OX 1001/S) or aviator shape (mod. SUM) available in both classic and elegant colors.

Distinction and exclusivity – In the metal aviator sunglasses utmost functionality blends with refined aesthetics. They are personalized by the new hook hinge. The harmonious colors of the frames match the acetate temples, including black/palladium and brown/havana (mod. BELLATOR).

Graphic appeal – Distinctive details personalize these new acetate sunglasses, emphasizing their linearity. A metal line runs along the shaped temples and double metal hatching is presented at the sides of the squared front (mod. OX 1004/S).

Vintage attitude – These women's acetate sunglasses seduce with their retro cat's eye shape. They are enhanced by small pins which frame the front, visible against elegant colors, such as fuchsia/grey, violet/mauve, tobacco, green, striped black and total black (mod. OX 1013/S).

New iconic details – These rigorous geometric optical frames have a care for detail. They are produced in either acetate (mod. OX 445) or metal (mod. OX 451) and distinguished by a new hook hinge. The color combinations are original and include blue/palladium, green/ruthenium/black red/havana/ruthenium; violet/plum, black/green.

Neo minimal inspiration – These essentially designed men's optical frames include acetate temples to match the metal front and nylon-framed lenses, revealing a dynamic and lightweight frame. The refined choice of colors includes aubergine/dark red, bronze/havana (mod. OX 439).

Geometric style – These new steel extra-lightweight optical frames feature acetate temples defined by a long vertical graphic line (mod. OX 441). The metal models, on the other hand present an undulated motif on the initial section of the temples (mod. OX 449). The decisive colors highlight the modern personality of the two models.

The OXYDO sunglasses and optical frames collection, designed by Enzo Sopracolle, is manufactured and distributed by the Safilo Group.



man TR12812-BK woman TR12806-BK www.trussardi.com



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BK	Black
BR	Brown
GN	Green
PU	Purple



CITYWEAR

EL 18941 Eternally chic. Classically designed shades with a very luxurious upper-class touch. A beautiful stone application on the arms mirrors the color of the shades, only separated by a silver frame showcasing the ELLE logo.

BK	Black
BR	Brown
GN	Green
RE	Red



ELLE KIDS

EL 18238 Little girls love to dress up. Easy with these oval shaped shades with a shiny and colorful flower design at the arms.

BK	Black
BR	Brown
GN	Green
PK	Pink



CHARMANT presents new arrivals from ELLE

ELLE equals chic – and stylish women everywhere know how to use it. ELLE is known for its fabulous touch of French flair and elegance, and the sunwear collection 100 is no exception. A wide range of exciting new designs makes sure you can take shade in style and finish every look with a fantastic signature frame.

Both Elegance Chic and City Wear frames project the well-known feminine and glamorous touch, with focus on breathtaking details and patterns. Simple structures and clean shapes benefit from the latest trends. Inspired by flowers, stones, jewelry and lovely vintage ornaments like monograms, the new collection radiates chic, fashionable style. A glorious mixture of colors from mattified simplicity to heady brights complements each frame perfectly. The new collection also offers adorable frames for girls with mini-versions of adult styles, adorned with pretty and cute details.

Unconventional, modern, and feminine – ELLE sunwear is a powerful fashion statement. For chic women around the world, ELLE puts the elegance in eyewear, and the fashion in frames.

About Charmant:

For over fifty years, the Charmant Group has been renowned worldwide in the optical market for their pioneering work in research and development of new technologies. Striving for perfection and high quality throughout their products, the Japanese company has grown into one of the most important companies in the competitive global eyewear market. Reliable and quality driven, the Group has always succeeded in keeping its promise of perfection and dedicated service to the customer, while focusing on the aspirations and requirements of the end consumer. This strong dedication to perfection can be experienced in Charmant's house brands as much as in its license brands. With its expertise in high end quality production and broad global sales network distributing in more than 100 countries, the Charmant Group is a reliable and renowned license partner

Model M2002
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CARRERA
RACING SUNGLASSES SINCE 1956



Carrera 2011
eyewear collection:
Heritage, inspiration and
new iconic codes
A statement of assertiveness:
"AFTER ALL, NO REGRETS"



The new collection of CARRERA eyewear is dedicated to those who "live in the fast lane", in search of clean fun, full of emotions to be experienced, people to be met and nights to be enjoyed, following the only rule of the new CARRERA campaign message: "AFTER ALL, NO REGRETS"; a call to live life to the full, with personality and without regrets, with the CARRERA sunglasses and optical frames as inseparable companions at all times.

The new iconic design concepts for sunglasses include:

Style in blue: blue is the chosen color of the CARRERA eyewear collection. The new sunglasses present lenses reinterpreted with a mirrored blue flash. This is an extremely modern color solution that projects these sunglasses into the future. The best-sellers of the collection are dedicated to the blue lens concept where lenses are animated by grey shades brought to life by blue mirrored flashes. The must-have sunglasses CARRERA 1/B and TURBO/B (in metal) and CHAMPION/B (in Optyl) conceal the gaze behind elegant mirrored blue lenses, a perfect complement for a determined, up-to-date and stylish look.

Iconic details: CARRERA transforms the traditional tear-drop shape into original sunglasses, selecting steel for its ultra-lightweight properties (CARRERA 4 and CARRERA 4/B). On the front appears the distinctive bridge that emphasizes the "C" logo, CARRERA's stylistic heritage icon and unmistakable timeless element. The appealing colors of the frames include gold with green lenses, dark ruthenium with grey polarized lenses, palladium with flash grey lenses, violet-lilac with matching smoky lenses (mod. CARRERA 4) and the seducing blue lenses with gold, palladium and black frame (mod. CARRERA 4/B). The style is also available as optical frame, in gold or palladium.

Modern heritage: A new iconic detail is the addition of the red detail on the temple and front, which recalls a historical feature of the brand's stylistic heritage. This detail can be found on the metal aviator models with a double bridge and tubular temple on which the brand name appears (mod. CARRERA 7).

The new contemporary designed and authentic optical frames include:

Vintage inspiration – Acetate details define the vintage design of these men's optical frames, such as the model with the rectangular shape in acetate, personalized by the new distinctive element, declined in the iconic and exclusive CARRERA colors: black/white, black/white/red, red (mod. CA6178).

Stylish appeal – For a dynamic and contemporary woman, these acetate optical frames are emphasized by a flowing shape and distinguished by essentiality. The appealing stylish colors include havana/violet, lilac/violet, pink/cyclamen, turquoise/black, fuchsia/orange (mod. CA6170).

The CARRERA sunglasses and optical frames collection, designed by Enzo Sopracolle, is manufactured and distributed by the Safilo Group.



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FILA®

FILA 2011 Sunglasses Collection, a brand that has always stood for elegance and Italian style in sports, confirms with this Sunglasses Collection 2011 its penchant for innovation and design, as well as its ability to perfectly mirror current trends and the contemporary need for sports as the favourite leisure activity. As from this year, Fila will satisfy the most competitive sportsmen with its "Performance" line, featuring specific glasses that are suited for all different types

of sports and performance levels, thanks to their exclusive technical features and cutting-edge materials. Models with ultralight Grilamid frames, adjustable temple tips, rubberized inserts and ergonomic nose pads for a perfect fit and utmost comfort, as well as mirrored lenses for greater protection from UV rays: thanks to all these details, Fila sunglasses are the perfect combination between functionality and high level performance. Plucky, bright colours and two-colour effects give this line, customized with FILA's linear logo, extreme dynamism and a strong personality. Not only sports, but also an all-round lifestyle. For next spring summer 2011, Fila also presents a lifestyle line, whose vintage feel recalls the brand's heritage, yet reinterpreted in a contemporary light. Acetate aviators featuring refined colour details on the front piece and metal inserts; gradient lenses, thin thicknesses and colours recalling 70's shades, embellished with the customization of the "F Box" logo.



Mod. SF8778 Col.Z93

Multi-sport frame, standing for high technology and avant-garde quality: adjustable nose pads and temples in rubber for a perfect fit, and gradient lenses available also in the mirrored version for higher protection. "Carbon-like" textures for the ultralight front piece and aluminium temples. Available in silver/blue and red/black, other than in the bright blue/yellow version and in the more classic black/silver.

Mod. SF8777 Col.965

This acetate with rubberized inserts, guaranteeing perfect fit and protection, is a model of the "Performance" line. The wrap-around and extremely comfortable frame is specially suited for mountain trekking; a bright two-colour interplay between the metal external colour of the frame and the internal rubber enhances the extremely sporty feel of his model: available in black/red, black/blue, black/silver and black on black.



Mod. SF8775 Col.ACG

Vintage acetate aviator, embellished with a metal detail on the bridge and with a low relief decorated with enamel for the front piece. The "F box" logo customizes the temple. The colours recall 70's shades while gradient lenses convey a more sophisticated appeal.

Mod. SF9534 Col.S69

Vintage, square model in metal. Moulded grooves, enhanced by coloured enamels, stand out on this frame, together with the "F box" logo on the temple. Available in gun metal/blue, black/red and brown/grey.



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Blumarine

Eyewear

2011 Eyewear Collection

The Blumarine Eyewear Collection 2011 perfectly embodies the values of the Blumarine world: seduction, romanticism, timeless elegance and irony. Rich in exclusive details and superb stylistic contents, it is designed for a contemporary, sophisticated and sensual woman, whose unique style becomes her very way of being. The brand's femininity can be perceived everywhere: rhinestones and glittering decorations give frames a glamorous though also refined quality, thanks to soft and amber-coloured shades and to smooth, sinuous shapes. Simple front pieces and minimal lines are countered with extremely rich detailing: feminine details as in the 'torchon' temples, romantic details as in the flowery elements recreated with rhinestone appliqués on the temples, or strikingly sensual details as in the exclusive plates with sparkling, Blumarine printed patterns. The Animalier - one of the key Blumarine themes - comes this season in a zebra version, a mood that recalls the Fall/Winter 2010-2011 fashion shows; other than the black-and-white pattern, the collection includes leopard-effect textures lit up by glittering reflections or combined with 'bon ton' shades like pearl grey, powder pink and tortoiseshell. The Blumarine logo takes on different, creative shapes according to the style of the frame: the rhinestone-decorated 'B' is the distinctive seal of the most feminine models, while the ironic 'double B' gives rise to a colour interplay in the more young-looking frames. The logo is written in full, instead, on wide and elongated cat-shaped frames, for a strikingly modern and glam-rock look.



Mod. SBM 505 Col.700

A glam-rock and wide acetate, for a strikingly modern look. Gradient lenses and metal inserts on the upper profile and on the bridge. Available in total black with metal, gold details, though also in Havana, ivory, violet and horn-effect blue.



Mod. SBM 506 Col.6UZ

A vintage, 1980s-reminiscent acetate proposed in the typical Blumarine style with zebra-animalier patterns, the leitmotif of the brand's Fall/Winter 2011 fashion show, printed in an optical sequence within the frame.



Mod. SBM 507 Col.8Y1

A wide, square acetate with 'torchon' metal temples, enriched by a special laser treatment. The front piece is decorated with a metal insert, while the temple tips are personalized by a plate featuring the Blumarine logo. Available in classic black and tortoiseshell other than in delicate, soft pearl grey/coral, violet/fuchsia and brown/beige.

Mod. VBM 006 Col.A39

Metal model with a smooth and feminine shape. The 'torchon' plastic temples are proposed in pearl shades while the front piece stands out for its 'ton sur ton' colour overlaps.



Mod. VBM 512S Col.975

Acetate with a vaguely retro, wide shape. The logo, in the metal 'double B' version, serves both as a hinge - a structural element of the model - and as an exclusive, decorative detail. Available in classic black and tortoiseshell, though also in the glittering and sparkling shades of black and ivory.



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Back to nature:

Charmant launches

Summertime – and the living is easy. Esprit, the Number 1 address for youthful and casual lifestyle attire, makes it even easier. A fantastic range of new styles captures everything the brand is known and loved for. High quality, superb wearing comfort and the latest trends are merged with timeless designs. Whether casual, trendy, fashionable or sporty, Esprit guarantees the perfect frame to suit your very own personal style.

The distinctive Esprit spirit represents everything a modern and active life is all about: friends, family, a love for nature and the outdoors and a positive, open-minded attitude. Across all ages and generations, Esprit is the brand for the whole family.

The new designs concentrate on nature and every model incorporates the theme in a different way: whether it's contemporary and modern styles à la urban jungle or delicate patterns taken from flora and fauna. Just like nature, the frames feature a gorgeous and extraordinary multitude of shapes and colors – each a natural piece of art in itself. From organic structures like leaves to urban elements like ropes, chains and stones, all models bear a wonderful love for details and the great outdoors.

The kids' range represents adorable mini versions of adult styles. All the cool designs are now available for the little ones and guarantee fun and safe sunshades children will love. Playful ornaments and a mixture of pop and basic colors complete the mini range.

Go outside and enjoy the summer of your dreams. Esprit: Good things come naturally.

About Charmant:

For over fifty years, the Charmant Group has been renowned worldwide in the optical market for their pioneering work in research and development of new technologies. Striving for perfection and high quality throughout their products, the Japanese company has grown into one of the most important companies in the competitive global eyewear market. Reliable and quality driven, the Group has always succeeded in keeping its promise of perfection and dedicated service to the customer, while focusing on the aspirations and requirements of the end consumer. This strong dedication to perfection can be experienced in Charmant's house brands as much as in its license brands. With its expertise in high end quality production and broad global sales network distributing in more than 100 countries, the Charmant Group is a reliable and renowned license partner.

ESPRIT

SUNWEAR 2011



Urban

Cities live and breathe fashion. Esprit's Urban theme brings nature into the mix with all its glorious motives – colors, stones, marble and beautiful patterns like ropes and chains

ET 17754 The classic and beloved Wayfarer shape in all its glory is back. The arms are slightly offset in color and bear a discreet emblem. Simple, edgy and cool: the one accessory that has it all.

Organic

Mother nature. The Organic models represent the beauty of nature – mirroring the wide variety of colors and shapes, from very expressive to dainty and delicate.



ET 17739 Beautiful oval-shaped shades, complemented by tapered arms with an elegant curve. The ton-sur-ton marble structure at the temples featuring a small logo highlights the sophisticated vibe. The perfect look for a sunset drink on Long Island Beach.

Earthy

Down to earth. Esprit's Earthy selection shows off the powerful side of nature with a great mix of materials like leather and metal, all incorporated into fashionable men's styles.

ET 17732 Rectangular shades with a polished, metal bridge that merges into the arms. With the Esprit logo printed on leather in a metal square at the temples, it's a sensational mix of cool and hot – just like fire and ice.



Kids

ET 19728 It's a homerun! Sporty rectangular shades for little champions with the number 68 printed in Baseball style on the temples. The inside of the frames blazes a bright contrast color

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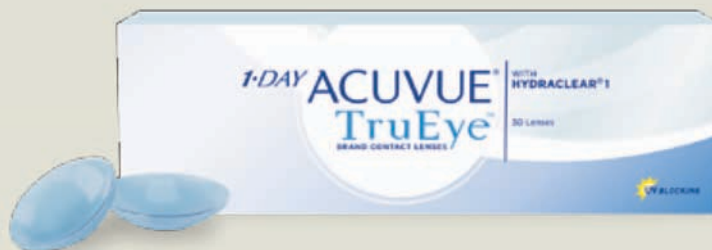
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