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CANADIAN JOURNAL OF OPTOMETRY | REVUE CANADIENNE D'OPTOMÉTRIE

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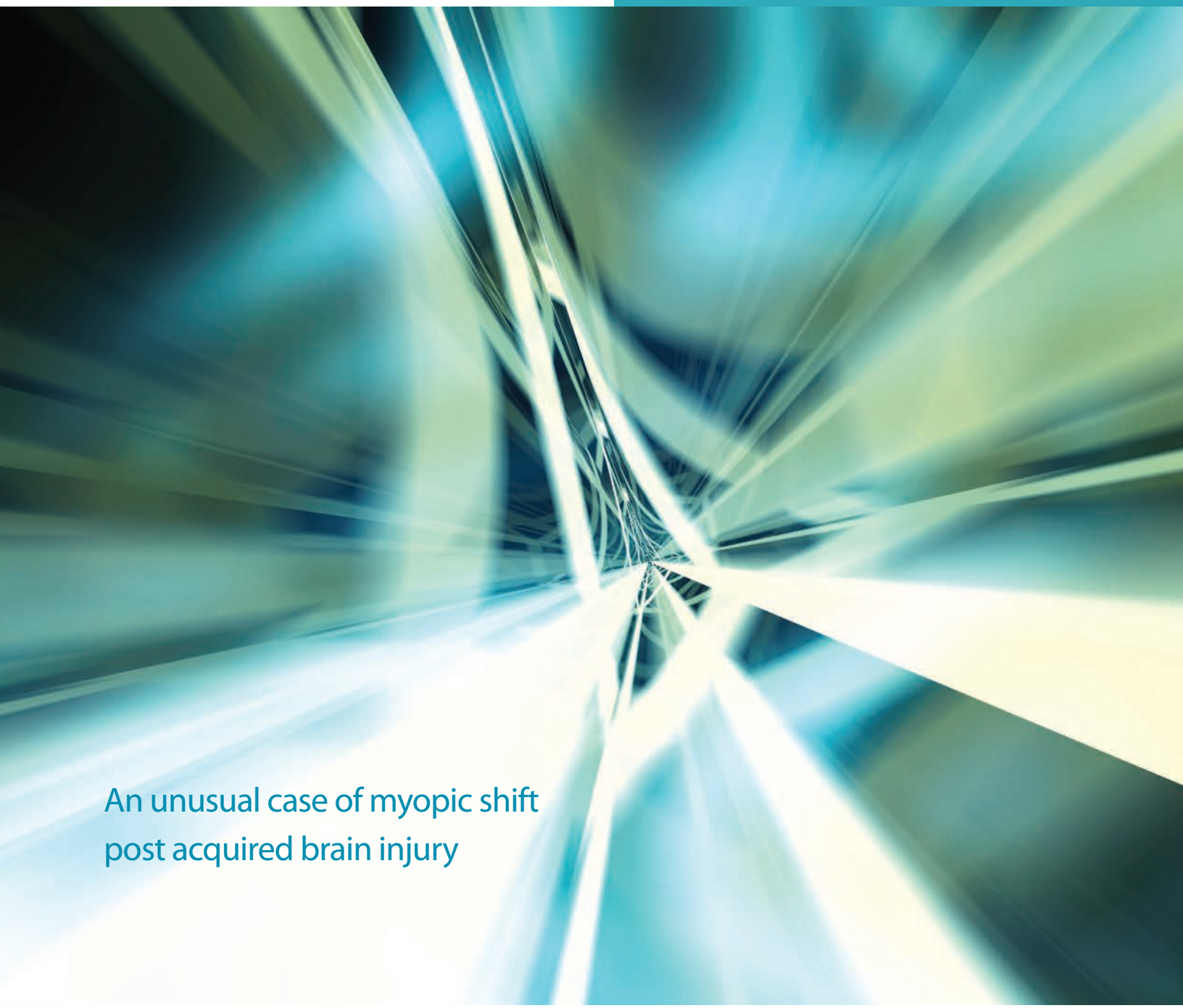

An unusual case of myopic shift post acquired brain injury

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Uniform requirements for manuscripts: login to the member site at opto.ca or contact CAO.

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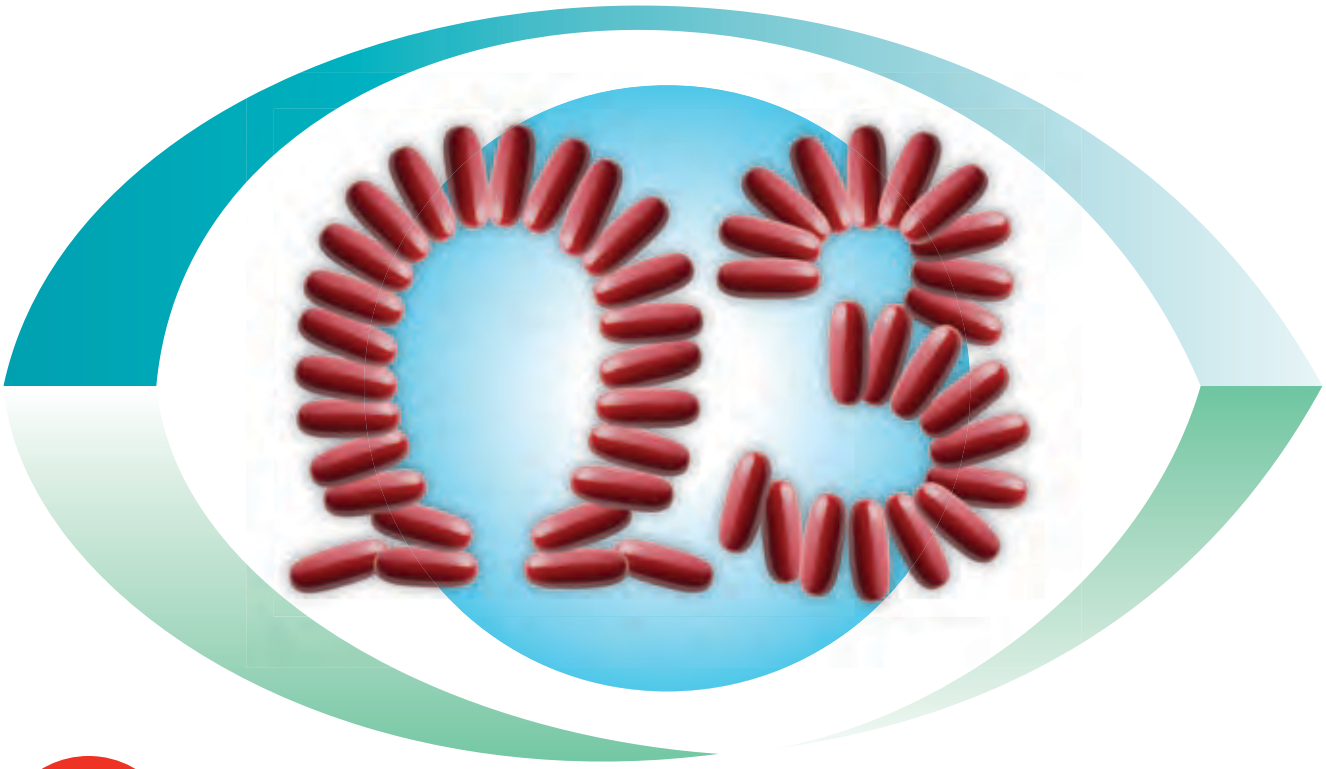
New Advancements in Nutrition for **Eye Health.**



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BY / PAR DR. LIL LINTON, OD

On May 31, 2012, I attended a reception on Parliament Hill in support of Bill C-313, an Act to regulate non-corrective contact lenses as medical devices. Eye care groups were represented by the CAO, the Opticians Association of Canada and the Canadian Ophthalmological Society. MP Patricia Davidson discussed her work as sponsor of the bill and the important role of eye care professionals. Ms. Davidson introduced Senator Mike Duffy, who is sponsoring the bill in the Senate. Later the same day, the bill passed third reading in the House of Commons and was read for the first time in the Senate. It is almost certain the bill will now become law – finally!

CAO can take pride in the leadership role we've played leading to Bill C-313. It was however, critical to have the support of other eye care professionals. We thank the Canadian Ophthalmological Society and the Opticians Association of Canada for their ongoing feedback and support. Working together we made a huge difference.

This experience caused me to reflect on the value of collaborative strategies. While it is not always possible to find common ground on issues, national eye care organizations do work together in important ways. Consider the following:

- CAO's relationship with CNIB is strong on many fronts. This year, CAO was the national partner of CNIB's Vision Health Month during the month of May. In turn, CNIB promoted visiting an optometrist for preventive eye care.
- Vision 2020 Canada is a coalition of organizations representing optometry, ophthalmology, rehabilitation (CNIB), academics and research, industry/pharmaceuticals and the charitable sector. Vision 2020 Canada is part of a global coalition that seeks to eliminate avoidable blindness and vision loss by the year 2020. The national vision strategy for Canada includes prevention and early intervention, access to rehabilitation services, vision health research and public education and awareness. A newly appointed Federal Senator, Dr. Asha Seth, has committed to be a champion for the strategy.
- The National Coalition for Vision Health (NCVH) has a legacy of collaboration and work that is a stage for eye health policy in Canada.
- Provincially, there are several examples of collaborative committees, involving optometry, ophthalmology and opticianry. An example is the Eye Health Council of Ontario.

Despite the cooperation, there are some who believe that professional associations and sanctioned coalitions could do better and thus new groups have emerged. One new group is the Canadian Coalition of Eye Care Professionals (CCEPro), is based on a perceived need for a different kind of collaboration, not by recognized national organizations, but by individuals. They established several broad objectives that are commendable. The Academy of Ophthalmic Education is another. The Academy is not so much an advocacy group as an organization that promotes itself as inclusive of all eye care groups. In many ways, these organizations adopt similar mandates to already established associations and coalitions. However, the more fragmented the messaging that emerges from disparate groups the more dilute and less effective the messaging becomes.

One of the challenges faced, is with mixed messages to our membership and external stakeholders. How many times have I been asked, 'Does CAO support CCEPro?'. Similarly, stakeholders, government and industry ask the same question. Who is who? CAO's response is that we believe having yet another group attempting to represent vision care professions is not helpful. CAO wants to work together with the associations that are the representative bodies of the professions and the formal collaborative groups established to achieve objectives consistent with those of CAO (i.e. Vision 2020 Canada).

Who will fund multiple coalitions? What is the accountability of new groups, when there is no formal structure? What is the legitimacy of a group, when it has no affiliation with or sanction by eye care organizations? These are questions one needs to ask.

I have always said optometry is too small a group to be divided and that we benefit from working together. There are issues we will face where common ground with ophthalmology and opticianry is simply not possible. Optometry's pursuit of Therapeutic Pharmaceutical Agent (TPA) legislation is an example of this. In these instances, CAO and provincial associations advocate in the interests of member optometrists - consistent with our mandates.

Eye care organizations will find the additional opportunities to work collaboratively as we did with Bill C-313. Collectively, the eye care sector competes for the attention of government and policy makers in a huge health care system. There is a need for the CAO, COS and OAC to work together to promote a consistent message on common issues and objectives. For CAO, Vision 2020 Canada is our best bet in promoting collective interests.

Le 31 mai 2012, j'ai participé à une réception sur la colline du Parlement qui appuyait le projet de loi C-313 visant à réglementer les lentilles cornéennes en tant qu'instruments médicaux. Les groupes des soins oculovisuels étaient représentés par l'Association canadienne des optométristes (ACO), l'Association des opticiens du Canada (AOC) et la Société canadienne d'ophtalmologie (SCO). La députée Patricia Davidson a parlé de son travail comme marraine du projet de loi, ainsi du rôle important que jouent les spécialistes des soins oculovisuels. Ensuite, Mme Davidson a présenté le sénateur Mike Duffy, qui parraine le projet de loi au Sénat. Plus tard au cours de la journée, le projet de loi a été adopté en troisième lecture à la Chambre des communes et a été lu pour la première fois au Sénat. Il est presque certain que le projet de loi sera adopté – enfin!

À l'ACO, nous sommes fiers du rôle de leadership que nous avons joué dans le cadre du projet de loi C-313. Toutefois, il était essentiel de mobiliser l'appui des autres spécialistes des soins oculovisuels. Nous tenons à remercier la Société canadienne d'ophtalmologie et l'Association des opticiens du Canada pour leurs rétroactions et leur appui continu. Cette collaboration a fait une énorme différence.

En effet, cette expérience m'a amenée à réfléchir sur l'importance des stratégies de collaboration. Même s'il n'est pas toujours possible de trouver un terrain d'entente, les organisations nationales des soins oculovisuels réussissent à travailler ensemble de diverses façons importantes. En voici quelques exemples :

- L'ACO maintient des liens étroits avec l'Institut national canadien pour les aveugles (INCA) sur de nombreux fronts. Cette année, l'ACO était le partenaire national du Mois de la santé visuelle de l'INCA en mai. À son tour, l'INCA a appuyé la campagne visant à promouvoir la consultation d'un optométriste pour des soins oculovisuels préventifs.
- Vision 2020 Canada représente une coalition d'organisations telles que l'optométrie, l'ophtalmologie, la réadaptation (INCA), les universités et la recherche, l'industrie pharmaceutique et le secteur de la bienfaisance. D'ailleurs, Vision 2020 Canada fait partie d'un regroupement mondial qui a pour but d'éliminer les cas évitables de cécité et de perte de vision d'ici l'an 2020. Pour le Canada, la stratégie nationale en vision s'appuie sur la prévention et l'intervention précoce, l'accès à des services de réadaptation, la recherche sur la santé de la vision et l'éducation et la sensibilisation du public. De plus, la Dre Asha Seth, récemment nommée au Sénat par le gouvernement fédéral, s'est engagée à défendre cette stratégie.
- La Coalition nationale en santé oculaire (CNSO) a un héritage de collaboration et de travail sur laquelle s'appuie la politique de la santé oculaire au Canada.
- À l'échelon provincial, il y a plusieurs exemples de comités qui collaborent dans les domaines de l'optométrie, de l'ophtalmologie et de l'optique. Un exemple en est le Conseil de la santé de l'œil de l'Ontario.

Malgré cette collaboration, certains croient que les associations professionnelles et les coalitions reconnues pourraient faire mieux. Ceci explique la création de nouveaux groupes, tels que la Coalition canadienne des spécialistes des soins oculovisuels (Canadian Coalition of Eye Care Professionals – CCEPro). Celle-ci est basée sur un besoin perçu d'une différente sorte de collaboration, non pas par des organisations nationales reconnues, mais par des individus. Cette coalition a mis de l'avant plusieurs grands objectifs qui sont fort méritoires. L'Association d'éducation ophtalmique (Academy of Ophthalmic Education) est un autre exemple de tels groupes. Cette association n'est pas un groupe de défense, mais plutôt une organisation qui dit regrouper tous les soins oculovisuels. De bien des façons, ces organisations adoptent des mandats similaires à ceux des associations et des coalitions déjà établies. Toutefois, plus les messages qui émergent de ces groupes disparates sont fragmentés, plus ils seront dilués et perdront leur efficacité.

Ainsi, un des défis qui se pose constitue l'envoi de messages contradictoires à nos membres et à nos intervenants externes. On m'a même demandé à plusieurs reprises si l'ACO appuyait la CCEPro. D'ailleurs, les intervenants, le gouvernement et l'industrie me posent aussi la même question. Qui est qui? L'ACO répond à chaque fois que nous croyons inutile qu'un autre groupe soit encore créé pour tenter de représenter les professions des soins de la vue. L'ACO désire travailler avec les associations qui représentent véritablement les professions et avec les groupes officiels mis sur pied pour atteindre des objectifs parallèles à ceux de l'ACO (p. ex., Vision 2020 Canada).

Qui financera ces multiples coalitions? À qui rendent-ils leurs comptes lorsqu'il n'y a aucune structure officielle? Quelle est la légitimité d'un groupe qui n'est ni affilié ni sanctionné par une organisation de soins oculovisuels? Voilà le genre de question qu'il faut se poser.

J'ai toujours dit que l'optométrie, à cause de sa petite taille, représente un groupe qui ne pouvait pas être divisé et qui bénéficie de la collaboration. Des problèmes se poseront s'il n'est tout simplement pas possible de trouver un terrain d'entente avec l'ophtalmologie et l'optique. La poursuite d'une législation sur les agents pharmaceutiques thérapeutiques par l'optométrie en est un exemple. Mais dans de tels cas, l'ACO et les associations provinciales défendent les intérêts des optométristes membres, ce qui est cohérent avec nos mandats.

Les organisations de soins oculovisuels trouveront certainement d'autres occasions pour travailler ensemble, comme nous l'avons fait dans le cas du projet de loi C-313. Collectivement, le secteur des soins oculovisuels tente de se démarquer auprès des gouvernements et des décideurs au sein d'un gigantesque système de soins de santé. L'ACO, la SCO et l'AOC doivent travailler ensemble pour promouvoir un message cohérent sur des questions et des objectifs communs. Pour l'ACO, Vision 2020 Canada représente notre meilleur atout pour promouvoir les intérêts collectifs.


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Eight national health organizations call on Minister Kenney to rescind planned cancellation of health benefits to refugee claimants

On Friday, May 18th, the Canadian Association of Optometrists along with seven other national health organizations, sent a joint letter to the Minister of Citizenship and Immigration, the Hon. Jason Kenney, asking him to rescind the planned cancellation of supplemental health benefits, including vision benefits, to refugee claimants under the Interim Federal Health Program (IFHP). Concern from the medical community over IFHP changes prompted nationwide rallies on June 18th to display opposition to the proposed cut backs.

In addition to vision care benefits, the services that will no longer be covered include; dental care, devices to assist mobility, hearing aids and testing, interpretation services, oxygen supplies, psychotherapy and counselling, rehabilitation services (physiotherapy and hospital charges), home care and long-term care and a reduction in prescription drug coverage.

The letter sent from health organizations pointed out that the planned cancellation of supplemental health care benefits would not save government money; rather, it will add to public health expenditures. More importantly, the measure will put at risk the health of refugees, future new Canadians and all Canadians from a public health standpoint.

Signatories to the letter included the Canadian Association of Optometrists, Canadian Association of Social Workers, Canadian Dental Association, Canadian Medical Association, Canadian Nurses Association, Canadian Pharmacists Association, the College of Family Physicians of Canada, and the Royal College of Physicians and Surgeons of Canada.

Optometrists need to be aware that vision care services for refugees in the IFHP will no longer be covered after June 29. Blue Cross, as an IFHP insurer, is preparing for the end of the program by issuing notification that all service providers treating anyone eligible for benefits from the IFHP program will have six months to make any claims. Claims after that six month period will not be accepted.

IFHP beneficiaries will be covered for doctor and hospital services if those services are needed to prevent or treat a disease posing a risk to public health or a condition of public safety concern.

For additional information on the changes to the IFHP, please visit the Citizenship and Immigration Canada (CIC) website at **www.cic.gc.ca/ifhp**.

For more details on the health care coverage benefit grid visit: **www.provider.medavie.bluecross.ca**. If you have any questions on coverage, please call the Medavie Blue Cross Contact Centre at **1-888-614-1880**.

Internet Reminders

CAO members are reminded to ensure you are current with CAO websites and services.

- Do you know your password to the member only portal?
- Are you receiving the INTouch newsletter and other communication from CAO at the correct email address?
- Is your practice website listed on the 'find an OD' feature on the CAO website?

If you answered 'no' to any of these questions, contact **info@opto.ca** and advise. We will be happy to update your records.

Rappels Internet

Nous rappelons aux membres de l'ACO de s'assurer qu'ils sont à jour en ce qui concerne les sites web et les services de l'ACO.

- Connaissez-vous votre mot de passe pour accéder au portail réservé aux membres?
- Recevez-vous le bulletin Contact et les autres communications de l'ACO à la bonne adresse électronique?
- Le site Web de votre pratique figure-t-il au service « Trouvez votre optométriste » du site Web de l'ACO?

Si vous avez répondu « non » à n'importe laquelle de ces questions, veuillez communiquer avec **info@opto.ca** et nous en informer. Nous nous empresserons de mettre vos dossiers à jour.

Erratum

In the Volume 74, No. 1 issue of the Canadian Journal of Optometry, Thomas Xie, OD & Etty Bitton, OD, MSc, FAOO, were the authors of "*An atypical case of HLA-B27-associated uveitis with hypopyon and posterior segment involvement*", page 47. The author was incorrectly listed as Paul Chous, MA,OD, FAAO in the Table of Contents, page 1.

The author of *Remembering Fred Kahn*, page 6 was Scott D. Brisbin, OD, LLD, FAAO. It was not written by Dr. Scott Mundle as published.

The managing editor regrets these errors.

Facebook and Twitter

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TELUS to Provide Sun Life with National eClaims Solution for Extended Healthcare Providers

TELUS Health Solutions has announced that Sun Life Assurance Company of Canada has signed an agreement with TELUS to offer benefit plan members an easy way to submit their claims electronically, right from the offices of their healthcare providers. This electronic choice for physiotherapists, chiropractors and optometrists will result in plan members receiving their benefits payments faster. Providers will be able to use their own management system or a portal on a website managed by TELUS to submit eClaims. TELUS Health eClaims, launched in 2010, has experienced rapid adoption by the extended healthcare community with over 10,000 providers now on board. For more information, visit: **www.telushealth.com**.

TELUS fournira à Sun Life une solution nationale électronique pour les fournisseurs de soins de santé

Solutions en santé de TELUS a annoncé que Sun Life du Canada, compagnie d'assurance-vie, a signé une entente avec TELUS pour offrir aux participants au régime de prestations une solution facile pour transmettre en ligne leurs demandes de règlement, à partir du cabinet même de leurs fournisseurs de soins de santé. Grâce à cette solution électronique pour les physiothérapeutes, les chiropraticiens et les optométristes, les participants au régime recevront leurs remboursements plus rapidement. Les fournisseurs seront en mesure d'utiliser leur propre système de gestion ou un portail sur un site Web géré par TELUS pour présenter en ligne leurs demandes de règlement. Lancé en 2010, TELUS Solutions de demandes de règlement en ligne a été rapidement adopté par le milieu étendu des soins de santé, plus de 10 000 fournisseurs ont signifié leur adhésion. Pour en savoir plus, rendez-vous sur **www.telushealth.com**.

Enter the Around the World with $30,000 Contest from The Personal

Shopping for home and auto insurance is easier than you think. In just a few minutes, you can compare The Personal's preferred rates against what you're paying now and ensure you're getting the best price possible. As a CAO member, you could be a winner in the *Around the World with $30,000 Contest* just by getting a quote or providing your current insurance expiry date. And when you provide your renewal dates online, you could also win one of 40 instant prizes of $500! Call **1-888-476-8737**.

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Vous avez déja de l'assurance avec La Personnelle? Comme client, votre nom est déja inscrit au tirage du grand prix.

Member Program – Vision Care Newsletters

The Canadian Association of Optometrists (CAO) is pleased to announce our new agreement with Vision Care Newsletters as the preferred provider of practice-to-patient newsletters.

"Done-for-you" newsletters keep you in the minds of your patients between scheduled visits. Regular, scheduled delivery of best practice eye-care information prompts greater interaction by patients with the practice if and when issues arise. Newsletters increase referrals to new patients and inform patients of relevant eye care topics. Customized with your practice name and logo, sent directly from your email address to your patients, the service includes a monthly email newsletter with three themed, eye-related articles.

For all the details and to get started, see our Member Discount programs or please visit their website at: **http://visioncarenewsletters.com/cao/**.

Questions? Call: 1-855-726-2244

Nouveau programme pour les membres – Bulletins sur les soins oculovisuels

L'Association canadienne des optométristes (ACO) est heureuse d'annoncer qu'elle a conclu une entente avec Vision Care Newsletters comme fournisseur privilégié de bulletins. Ces bulletins mensuels personnalisés portant le nom de votre pratique et son logo, sont envoyés directement de votre adresse électronique à vos patients et ils comprennent trois articles thématiques sur les yeux. Les bulletins « Produits pour vous » vous gardent présents chez vos patients entre les visites périodiques. La diffusion régulière d'information sur les meilleures pratiques en soins oculovisuels accroît les échanges entre les patients et la pratique lorsqu'il surgit des problèmes. Les bulletins augmentent le nombre d'aiguillages dans le cas des nouveaux patients et informent les patients sur des sujets pertinents des soins oculovisuels.

Pour obtenir tous les détails et commencer, consultez nos programmes de rabais aux membres ou visitez le site Web à : **http://visioncarenewsletters.com/cao/**.

Des questions? Composez le **1-855-726-2244**.

CMA Infobase

The Canadian Medical Association (CMA) has been active in the promotion of clinical practice guidelines for several years. The CMA maintains a database of guidelines developed or endorsed by Canadian national or provincial health organizations or expert groups. This database, named the CMA Infobase, is available on the Internet at: **http://cma.ca/infobase**. Since its inception in 2000, it has grown to be a highly regarded and highly valued clinical electronic resource on the cma.ca web site by the CMA physician membership. The CMA recently reviewed the CAO clinical practice guideline Frequency of Eye Examinations: An evidence-based approach. The CMA already entered preliminary information about this guideline in the database. To ensure that the information is complete, accurate and up-to-date, the next step involves contacting the guideline developers to request information on the guideline and the development process. This step is underway.

Infobanque de l'AMC

L'Association médicale canadienne (AMC) fait depuis des années la promotion active des guides de pratique clinique. L'AMC tient une banque de guides produits ou approuvés par des organisations nationales ou provinciales du secteur de la santé ou des groupes d'experts du Canada. Cette base de données appelée Infobanque AMC est disponible sur internet à **http://amc.ca/ressourcescliniques/guidepratique**. Depuis sa création en 2000, la banque a pris de l'expansion et est devenue une ressource électronique clinique à laquelle les médecins membres de l'AMC attachent une grande valeur sur le site Web amc.ca. L'AMC a revu récemment le Guide de pratique clinique de l'ACO sur la Fréquence des examens de la vue : Approche factuelle. L'AMC a déjà entré de l'information préliminaire sur le guide dans la banque de données. Pour veiller à ce que l'information soit complète, exacte et à jour, l'étape suivante consiste à communiquer avec les auteurs du guide pour leur demander de l'information sur le guide et le processus de production. Cette étape est en cours.

Rule Change - Tinted Visors

Football Canada announced effective April 9, 2012, that the use of a tinted helmet visor is prohibited, with no medical exemptions allowed. The rule change was in large part due to the CAO position paper on tinted visors prepared in 2011 and circulated to Football Canada. The CAO position is that tinted helmet visors present considerable difficulties for on-field medical assessment and should not be used. The infrequent need for filtering bright light can be addressed through appropriate tinted contact lenses or sunglasses. The use of clear visors is supported and recommended for the protection of the eyes and to facilitate on-field assessments when necessary. Football Canada announced this change on its website **www.footballcanada.com** which includes a link to the CAO position paper.

Changement de règlement - Visières teintées

Football Canada a annoncé qu'à compter du 9 avril 2012, les visières teintées pour casque étaient interdites et qu'aucune exemption médicale n'est autorisée. Le changement de règlement est attribuable en grande partie à l'énoncé de position de l'ACO sur les visières teintées produit en 2011 et distribué à Football Canada. L'ACO est d'avis que les visières teintées posent d'énormes difficultés lorsqu'il faut procéder à un examen médical sur le terrain et qu'il ne faudrait pas les utiliser. Il est possible de répondre au besoin peu fréquent de filtrer une lumière brillante en portant des lentilles cornéennes ou des lunettes soleil teintées appropriées. On appuie et recommande le port de la visière claire pour la protection des yeux et faciliter les examens sur le terrain au besoin. Football Canada a annoncé ce changement sur son site Web **www.footballcanada.com**, qui inclut un lien vers l'énoncé de position de l'ACO.

TWECS Volunteer Project for 2012 – TONDO, MANILA PHILIPPINES...

Come join TWECS for an incredibly rewarding experience of service, of nature and camaraderie. **Dates:** November 8-25, 2012 **Hosts:** Philippine National Railways (PNR) in coordination with the local govt. units along the PNR rail tracks. **Accommodation:** Midas Hotel with full breakfast at a special rate of $50US/person based on double occupancy. See www.midashotelandcasino.com. **Rest and Relaxation days:** An excursion can be organized to see one of the New7Wonders of Nature, the Puerto Princesa Underground River. A couple of days will also be spent in Makati, a major cultural and entertainment hub in Metro Manila. **Approximate budget:** $1,900 for airfare, food and accommodations (based on departures from YVR with Philippine Airlines). Space is limited, please contact Dr. Marina Roma-March at **twecs@shaw.ca** or **604-874-2733**.

Projet de bénévolat TWECS pour 2012 – TONDO, MANILLE, PHILIPPINES...

Joignez les rangs de TWECS et profitez d'une expérience extrêmement enrichissante du service, de la nature et de la camaraderie. **Dates :** du 8 au 25 novembre. **Hôtes :** Philippine National Railways (PNR) de concert avec les administrations locales le long de la voie ferrée de PNR. **Hébergement :** Hôtel Midas avec petit déjeuner complet au taux spécial de 50 $ US par personne pour une chambre pour deux. Rendez-vous sur www.midashotelandcasino.com. **Journées de repos et de relaxation :** une excursion peut être organisée pour visiter l'une des sept nouvelles merveilles de la nature, en l'occurrence la rivière souterraine Puerto Princesa. Nous passerons aussi quelques jours à Makati, un grand centre d'activités culturelles et de divertissement situé dans la région métropolitaine de Manille. **Budget approximatif :** 1 900 $ pour *l'avion, les repas et l'hébergement (*si le départ se fait d'YVR sur Philippine Airlines). Les places sont limitées. Veuillez communiquer avec la Dre Marina Roma-March à **twecs@shaw.ca** ou au **604-874-2733**.

Incident Reporting

CAO reminds members to report patient incidents on the national incident reporting site. Add to your provincial total by reporting asymptomatic patients, invalid prescriptions, online ordering, sight tests, and cosmetic contact lenses.

Please support this effort! To report an incident, visit: **www.surveymonkey.com/s/ODincidentreport**

Déclaration des incidents

L'ACO rappelle aux membres de déclarer les incidents liés à des patients sur le site national de déclaration des incidents. Contribuez aux totaux de votre province en déclarant les patients asymptomatiques, les prescriptions non valides, les commandes en ligne, les tests de la vue et les lentilles cornéennes à but esthétique.

Veuillez appuyer cet effort! Pour signaler un incident, rendez-vous à : **http://www.surveymonkey.com/s/ODrapportincident**

VisionAware Website

The American Foundation for the Blind (AFB) and Reader's Digest Partners for Sight Foundation have launched **www.visionaware.org**, a free, easy-to-use informational website for adults with vision loss, their families, caregivers, healthcare providers, and social service professionals. The new VisionAware site combines two standalone resources from AFB and Partners for Sight (Senior Site and the former VisionAware, respectively) into a single, comprehensive website offering dynamic social networking and customized guidance for adults of all ages with rich content and practical tips on living with vision loss. Although the website is US based, it is a good resource for patients and their families.

Site Web sur la perte de vision

L'American Foundation for the Blind (AFB) et la Fondation Partners for Sight du Reader's Digest ont lancé **www.visionaware.org**, site Web d'information gratuit et facile à utiliser pour les adultes qui ont une perte de la vision, les membres de leur famille, leurs aidants naturels, les fournisseurs de soins de santé et les professionnels des services sociaux. Le nouveau site VisionAware combine deux ressources autonomes de l'AFB et de Partners for Sight (Senior Site et l'ancien VisionAware respectivement) en un seul site Web intégré qui offre un réseautage social dynamique et des conseils personnalisés à l'intention des adultes de tous âges, sans oublier un contenu riche et des conseils pratiques sur la vie avec une perte de vision. Même si le site Web est américain, il constitue une bonne ressource pour les patients et les membres de leur famille.

Help Patients See Life In HD

New PureVision®2 HD Contact Lenses Designed with High Definition™ Optics

New **PureVision®2 HD** contact lenses provide outstanding vision with vibrant colours and clear, crisp vision all day. They are designed to reduce halos and glare in low light with innovative design advances to improve comfort and breathability. Now, help your patients see everything life has to offer with new PureVision®2 HD contact lenses.

Call your B + L Sales Representative for more information, 1 800 668 7510 or visit bausch.ca

BAUSCH + LOMB

Schools of Optometry - Awards and Graduation

CAO is pleased to support optometry student members and Schools of Optometry. CAO President, Dr. Lil Linton, was invited to attend Awards Ceremonies and Graduation at Canadian Schools of Optometry in Montreal (June 1) and Waterloo (June 12). In Montreal, CAO contributes to the 'Excellence Awards' which are presented to seven new grads. Six of the winners receive $1,000 and the seventh receives $2,000 for maintaining the best overall academic record throughout the program. At Waterloo, Dr. Linton presented the CAO Award of Merit to Ryan Hogan and the Dr. Margaret Hansen Desgroseilliers Award (sponsored by the Canadian Optometric Education Trust Fund) was to Colin Hobson. Congratulations to award recipients and all graduates!

Écoles d'optométrie – Prix d'excellence et collation des grades

L'ACO est heureuse d'appuyer les membres étudiants en optométrie et les écoles d'optométrie. La présidente de l'ACO, la Dre Lil Linton, a été invitée à assister aux cérémonies de remise des prix d'excellence et de collation des grades aux écoles canadiennes d'optométrie à Montréal (1er juin) et Waterloo (12 juin). À Montréal, l'ACO contribue aux « Prix d'excellence » présentés à sept nouveaux diplômés. Six des lauréats reçoivent 1 000 $ et le septième, 2 000 $ pour avoir maintenu les meilleures notes tout au long du programme. À Waterloo, la Dre Linton a présenté le Prix du mérite de l'ACO à Ryan Hogan et le Prix Dre Margaret Hansen des Groseilliers (commandité par le Fonds de fiducie des optométristes canadiens pour l'éducation) a été décerné à Colin Hobson. Félicitations aux lauréats et à tous les diplômés!

Open Your Eyes advertising campaign is a big winner at the 2012 International Summit Awards

The Summit International Awards (SIA), one of the world's most prestigious advertising industry recognition organizations, awarded Ogilvy Health World for the *Open Your Eyes* campaign in May of 2012.

Throughout its sixteen-year history, the SIA has established itself as one of the premier arbiters of creative and communication excellence. Companies and individuals, from more than 20 countries and five continents, participate in the annual awards programs. This competition was restricted to agencies that have under 30 million dollars in billings per year.

Honouring advertising, design and web creation, the SIA awarded the *Open Your Eyes* campaign with three significant awards:

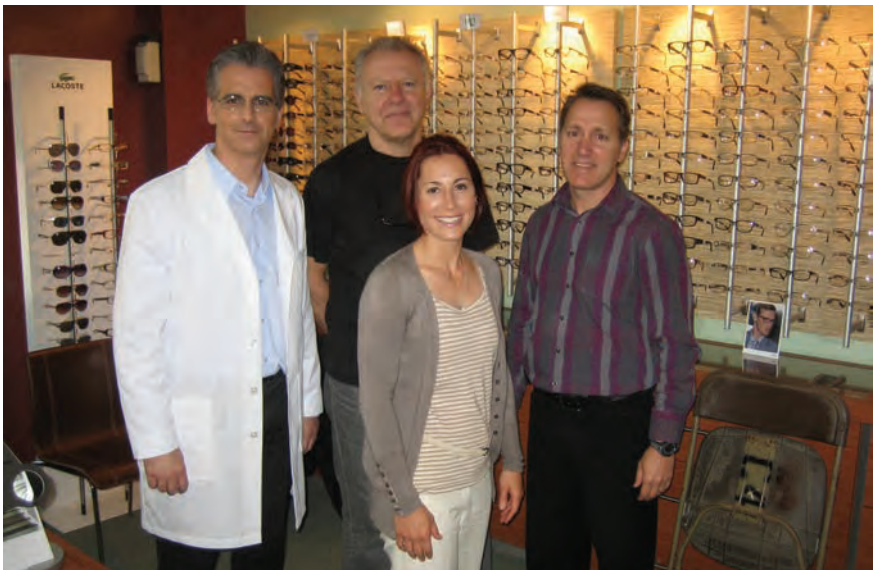
Best of show – Judged to be the best overall multi-media campaign (TV, print, web and collateral pieces) for a public service message

Sliver – For magazine/print ad category

Bronze – For television ad

This is a big show for creativity — thanks to the National Public Education Committee for making it happen.

Visit: **www.summitawards.com/competitions/creative-award/2012-best-of-show.html**



Thank you / Merci!

An overdue thank you to Dr. Daniel Boissy for his generous assistance during the filming of the *Open Your Eyes* National TV ad.

When a problem with the original set location presented itself, Dr. Boissy with very short notice, kindly made his clinic available, rescheduled his patients on the day of shooting and let the film crew take over his reception area and office.

Photo: Dr. Boissy (far right) with the key actors and Cinélande's director, Jean-Michel Ravon.

The British Contact Lens Association (BCLA) held its 36th Clinical Conference at the International Conference Centre in Birmingham, UK between May 24 and 27.

This international conference attracts over 1,000 attendees from 45 countries worldwide. In addition to continuing education, hands-on workshops, the scientific section and industry presentations, a large hall exhibited the latest products and equipment related to contact lens fitting.

Candidates who have fulfilled the requirements, can also sit for the fellowship exam, termed an "in viva" conference. This year 19 candidates completed the requirements to become Fellows of the BCLA (FBCLA), including three Canadians; Etty Bitton (Montreal), Kristine Dalton (a UW grad who is presently completing her PhD degree in England) and Jill Woods (Waterloo). Congratulations to the new FBCLA! Next year's meeting is planned for June 6-9, 2013 in Manchester, UK. Mark your calendar!

Le British Contact Lens Association (BCLA) a tenu son 36e congrès au Centre de Conférence International à Birmingham au Royaume Uni du 24 au 27 mai dernier. Cette conférence internationale attire au delà de 1 000 congressistes provenant de 45 pays autour du Monde. Le congrès comporte de la formation continue, des ateliers, des présentations scientifiques ainsi que des présentations par des représentants d'industrie. Il y a également une exposition mettant en vedette les dernières nouveautés de produits et d'équipements dans le domaine des lentilles cornéennes.

Les candidats qui avaient complété les prérequis nécessaires ont eu l'occasion de participer à un examen oral, intitulé « conférence in viva » afin de recevoir leur « fellowship » du BCLA. Cette année, 19 candidats ont complété l'examen avec succès, dont 3 canadiens, soit Etty Bitton (Montréal), Jill Woods (Waterloo) et Kristine Dalton (une diplômée de l'UW qui termine ses études de 3e cycle en Angleterre). Félicitations aux nouveaux FBCLA! L'année prochaine, le congrès se tiendra à Manchester du 6 au 9 juin 2013. Inscrivez ces dates dans votre agenda!

CNIB and CAO Partnership – **Vision Health Month** Wrap-up
Partenariat entre l'INCA et l'ACO – **Le Mois de la santé visuelle** se finalise

The end of May 2012 signified the wrap-up of another successful Vision Health Month. This year for the first time, the Canadian Association of Optometrists joined one of Canada's most trusted charities, CNIB, as its National Vision Health Month Partner for the third annual awareness and public relations campaign.

"We were proud to welcome the CAO as our national partner for Vision Health Month this year," says CNIB president and CEO, John M. Rafferty. "Our missions are closely aligned so the partnership makes perfect sense. Both CNIB and CAO are committed to educating Canadians about the dangers of eye disease and importance of eye exams, and that's what Vision Health Month is all about."

CAO's alignment with CNIB enabled us to leverage the charity's extensive public relations capacity and broad media reach to raise awareness about the need for regular eye exams from an optometrist among millions of Canadians.

With a theme of "eyes are for life," the campaign featured a strong overriding call to action to "visit your optometrist regularly for a complete eye exam," as well as a number of compelling support messages about vision health, vision loss, and the importance of early detection and treatment of eye disease.

In addition to CAO's financial contribution to support the project, participating optometrists took part in the Vision Health Month Toonie Campaign, engaging patients and raising money by collecting $2 for every eye exam they conducted during the month.

"I can't express how powerful the support of these individual optometrists has been for Vision Health Month and the work that we do at CNIB," says Rafferty. "We are extremely grateful for the support of each and every optometrist who participated across Canada."

Each participating optometrist has been recognized within CNIB's online Optometrist Locater tool, which allows Canadians to find optometrists quickly and easily in their local area. The tool was widely publicized throughout Vision Health Month in a range of media – including the websites of the National Post, the Ottawa Citizen, the Vancouver Sun and several other newspapers across the country – and will continue to be promoted by CNIB in the months to come.

CNIB's site helped promote eye exams for participating clinics with an Optometrist Locator tool. See: visionhealthmonth.cnib.ca.

Le site de l'INCA a aidé à promouvoir les examens de la vue pour les cliniques participantes à l'aide de l'outil « Trouver un optométriste ». Voir : moisdelasantevisuelle.cnib.ca.

CNIB wishes to send a heartfelt thank you to CAO and all optometrists who participated in Vision Health Month 2012. To learn more about Vision Health Month, visit: **eyesareforlife.ca**.

Un autre Mois de la santé visuelle s'est finalisé avec succès à la fin du mois de mai 2012. Cette année, pour la première fois, l'Association canadienne des optométristes a joint l'une des œuvres de charité les plus dignes de confiance au Canada, l'INCA, en temps que partenaire national du Mois de la santé visuelle dans le cadre de sa troisième campagne annuelle de sensibilisation et relations publiques.

« Nous sommes fiers d'accueillir l'ACO en temps que partenaire national du Mois de

l'INCA, M. John M. Rafferty. Nos missions sont en étroite harmonie donc le partenariat était parfaitement logique. L'INCA et l'ACO sont tous deux engagés à éduquer les canadiens quant aux dangers des maladies oculaires et l'importance des examens de la vue, et c'est l'essence même du Mois de la santé visuelle. »

L'alliance avec l'ACO nous a permis de mettre à contribution nos importants moyens de relations publiques et notre vaste réseau de médias afin de sensibiliser des millions de canadiens au besoin d'examens de routine chez un optométriste.

Sous le thème « des yeux pour la vie », la campagne avait comme message central « visitez votre optométriste régulièrement pour un examen de la vue complet », auquel se greffaient plusieurs messages de soutien importants concernant la santé visuelle, la perte de la vue et l'importance du dépistage et du traitement précoces des maladies oculaires.

Outre la contribution financière de l'ACO au projet, les optométristes participants ont pris part à la Campagne deux dollars pour le Mois de la santé visuelle, impliquant leurs patients à la collecte de fonds puisque 2 $ ont été recueillis pour chaque examen de la vue qu'ils ont fait durant le mois de mai.

« Je ne peux pas exprimer la puissance du soutien de chacun de ces optométristes tant à l'ensemble de la campagne qu'au travail que nous accomplissons à l'INCA, indique M. Rafferty. Nous sommes extrêmement reconnaissants pour la participation des optométristes à travers le Canada. »

Le nom de chaque optométriste participant a été inscrit sur le site Web de l'INCA avec l'outil « Trouver un optométriste », qui permet aux canadiens de localiser facilement et rapidement des optométristes dans leur région. Cet outil a été largement publicisé tout au long du Mois de la santé visuelle dans une gamme de médias – incluant les sites Web du National Post, Ottawa Citizen, Vancouver Sun et plusieurs autres journaux à travers le pays – et l'INCA continuera d'en faire la promotion dans les mois à venir.

L'INCA souhaite remercier de tout cœur l'Association canadienne des optométristes et tous ses membres qui ont participé au Mois de la santé visuelle 2012. Pour en savoir davantage au sujet du Mois de la santé visuelle, visitez **www.desyeuxpourlavie.ca**.

Show, don't tell:
iPhone app opens a window into eye disease

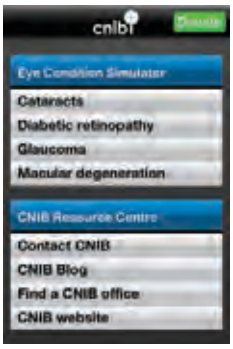
It's no surprise that technology is changing the way we look at the world. CNIB has joined the tech movement by developing a tool that enables optometrists and patients to see what the world might look like to someone living with eye disease.

The iSimulator is an app for the iPhone that uses the phone's built-in camera to show how common eye diseases like glaucoma, diabetic retinopathy, age-related macular degeneration (AMD) and cataracts may affect vision. The intensity of the effect can even be adjusted to show the severity and progression of each disease.

Users select one of the four eye diseases on the main screen and the app initializes the iPhone's camera, showing the user how their sight might be affected. A picture can be captured, saved and shared through email, Facebook or Twitter. By clicking on the "Learn More" button, users can get more information about each disease.

Opening your patients' eyes

CNIB knows that optometrists are the first-line of defense against eye disease. A large part of the reason they created the iSimulator app was to help optometrists educate patients about eye care and the importance of booking regular exams.



L'INCA a créé une app gratuite pour iPhone intitulée « iSimulator » afin de montrer aux patients les effets visuels de quatre maladies oculaires communes. Cette app a comme rôle d'aider les optométristes à éduquer leurs patients quant à l'importance des soins de la vue et des examens réguliers.

"The general public remains largely unaware about the need for regular and ongoing management of eye health," says Dr. Keith Gordon, CNIB's vice president of research. "In fact, almost one out of every seven Canadians is living with some form of AMD, diabetic retinopathy, glaucoma or cataracts.

"That's why it's so important that CNIB bands together with optometrists to share the iSimulator and get the word out to Canadians."

Encouraging your patients to download the iSimulator free-of-charge and share it with their friends will help to raise awareness about eye disease to an audience far outside the office walls. The app also links patients to valuable resources provided by CNIB to further their knowledge and understanding of eye disease.

The power of this type of tool is limitless in communicating the importance of regular eye exams and eye health. Patients can see a picture of what the future of their vision could look like if they don't get regular exams, driving the point home of how important it is to see their optometrist.

Patients can download the iSimulator App, in English or French, free from Apple's App Store.

Evaluations of prescriptions and frames purchased from online eyewear vendors

By Dr. Benoit Frenette, M.Sc., Optometrist, Associate Professor at the School of Optometry of the Université de Montréal, assisted by Joseph Vong, optometry student at the School of Optometry of the Université de Montréal, and Geneviève Maher-Laporte, optometry student at the School of Optometry of the Université de Montréal

Background

The purpose of this study was to evaluate the accuracy of online orders of eyewear based on a number of adjustment and suitability parameters of selected frames in comparison with the morphological features of the individuals in the study.

Methods

The study was conducted from September 2011 to January 2012. Four volunteers with only a basic knowledge in optics were selected to represent a set of clients who had previously had an eye exam and were already wearing vision correction devices, but wanted to try purchasing their prescription glasses online. A number of sites were identified, but only four popular sites selling glasses online were selected based on the following criteria: they were well-constructed sites, they were attractive and popular due to marketing and advertising efforts in Canada, and they had been in existence for more than two consecutive years. The four sites selected for the exploratory study were:

Clearly Contacts
(www.clearlycontacts.ca)

Frames Direct
(www.framesdirect.com)

39Dollarglasses
(www.39dollarglasses.com)

Eyebuydirect
(www.eyebuydirect.com).

We asked each participant to order the same specific prescription (lenses and frames) from each of the four sites, matching certain particulars that were provided to them. The participants were then left on their own during the entire online ordering process. The 16 online purchases (4 participants × 4 sets of glasses) were filmed on video. For each volunteer, the only interference from a member of the research team occurred at the very end of the process, when finalizing the purchase by credit card. The volunteers were given no other details or assistance.

For the study, four prescriptions were specifically prepared to represent a variety of needs from the perspective of lens and frame choice. Two prescriptions were prepared for distance correction (monofocal) and the other two were prepared for progressive (multifocal) lenses. The four sites were analyzed in an exploratory, critical and subjective manner by the research team. After watching all the video recordings of the purchasers, a subjective evaluation of the 16 visits was carried out, based on user-friendliness of the site. Lastly, an analysis of the actual glasses received by the four volunteers was done. In total, 16 frames and 32 lenses were analyzed against professional standards.

Results

Adherence to the prescription: Out of the 32 lenses ordered, considering refractive criteria only, six of them (19%) contained strength errors — that is they did not adhere to the prescription ordered.

Interpupillary distance (PD) measurements: Seven of the 32 frames (22%) did not adhere to the accepted tolerance of roughly 1mm compared to the PD indicated by the subjects when placing their orders. When comparing the filled prescriptions with the 'patients' actual values, 12 (38%) were faulty. Note that only one observer managed to take his PD measurement correctly.

In total, 13 sets of glasses out of 16 (81%) did not adhere to the prescription or the PD measurement sent when ordering.

Focal height and lens centering: For progressive lenses, six of the eight sets of glasses received should have been redone prior to shipping to the customer. For the monofocal lenses, the decentrations were determined in an entirely random manner by the websites since there was inadequate information requested to enable them to correctly position the lenses. Centration of a monofocal lens reflects head posture, the pantoscopic angle and the prescription; however, two of the three parameters of this measurement are absent from the websites visited.

Frame adjustment: The participants were asked to wear the frames they had ordered for evaluating the adjustment in terms of, among other things, the alignment of the frame on the face, the camber and facet angle of the nose pads, pantoscopic angle, arm spread, ear contour and pressure on the petrous bone, behind the ear. Thirteen out of 16 sets of frames did not receive a passing grade over 70% for meeting basic comfort and position criteria.

The particpants were free in terms of choosing frames and were limited by cost. As previously mentioned, we had specified the types of frames and lenses, but nothing more. The average price, based on 16 orders, was $216 with the average price for

> “In view of the parameters standardized by accredited organizations, we arrive at a 94% failure rate.”

the monofocal lens at $187, and progressive lenses at $252. The lowest price was $26 (simple vision) while the highest amounted to $495 (progressive).

Conclusion

This report confirms the opinion of a number of stakeholders in the field of oculo-visual care: the public is not well served by online ordering sites for prescription glasses. In addition, this analysis of popular websites clearly shows that, by wishing to circumvent the traditional dispensing process for frames and ophthalmic lenses, in light of the legislation, regulations, standards and tolerances in effect in this field and in this country the public does not have the professional guarantees they are entitled to.

Products were evaluated using parameters standardized by the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO). In terms of adhering to the prescription, regarding the desired adjustments for minimal wearing comfort, and considering the PD measurement taken by the subjects themselves, we arrive at a 94% failure rate.

Only one single pair of glasses was acceptable according to our reference criteria.

Translated and printed with kind permission from L'Optométrist, mai / juin 2012.

An Overview of Provincial Health Coverage for Optometric Care in 2012

Province	Health Coverage
British Columbia	The BC Medical Services Plan has limited coverage for optometrists' services, and optometrists may collect a reasonable co-payment from their patients. Routine examinations are covered annually for patients under age 19 and over 64. All patients are covered for clinically required services involving ocular disease, trauma or injury, systemic diseases associated with significant risk to ocular health (e.g. diabetes), and for patients taking certain medications that are associated with significant risk to ocular health.
Alberta	Children and youth under 19 yrs. and adults over 64 yrs. are covered for eye exams, partial exams, and defined procedures based on medical need - patients between the ages of 19 and 64 are covered for clinically necessary care (tear chemistry, anterior chamber, tonometry, colour vision, exam for low vision, computer assisted visual field test).
Saskatchewan	Children and youth under 18 yrs. are covered for one eye exam per 12 months and for repeat and partial exams. For all ages, coverage is provided for initial assessment and follow-up of ocular urgencies and emergencies. Also covered are: supplementary health beneficiaries, Family Health Benefits (FHB) beneficiaries, and seniors (65+) receiving Saskatchewan Income Plan (SIP) supplement.
Manitoba	Children and youth under 19 yrs. and adults over 64 yrs. are insured for one exam every two-year calendar block. Patients between 19 to 64 yrs. are no longer covered, except for clinical reasons. Health coverage includes complete and partial eye examinations; full threshold visual fields; tonometry and dilated fundus exam.
Ontario	The Ontario Health Insurance Plan (OHIP) insures basic eye examinations annually for persons under the age of 20 years and over the age of 65 years. Persons living with diabetes are insured for a basic eye examination annually. Persons between the ages of 19 and 65 are eligible for an insured basic eye examination either through a requisition from a physician or when presenting with an eye disease or disorder that has been designated as meeting the criteria for an insured service. Insured persons are eligible for insured partial assessments when clinically necessary. A clinically indicated automated visual field test is an insured service for a patient whose basic eye examination qualified as insurable
Québec	Coverage is provided for ages 0 -17 yrs. and 65 yrs. and over and includes: eye exam, tonometry / biomicroscopy, visual field test, contact lens exam in some circumstances, etc. A new service implemented May, 2009 is dilation of a diabetic patient or myopic patient of 5.00D and over. Ocular emergency covered for all ages but the diagnostic service only: treatment at the patient expenses.
New Brunswick	There is no provincial health coverage for optometric services in New Brunswick, except for those on social assistance. The New Brunswick Association of Optometrists announced a new 3 year Social Development contract which is effective as of June 1, 2012. The contract includes yearly major examinations for patients with diabetes.
Nova Scotia	A Comprehensive Eye Examination (CEE) for routine care is payable once in a two-year period for children under age 10 and those 65 years and older. A CEE is payable once per year for all ages in cases of clinical need e.g. patients with health conditions (such as diabetes), or on medications, that present a risk to ocular health. Partial examinations are covered up to six times per year for the diagnosis and treatment of ocular infection, allergy or inflammation and the removal of foreign bodies from the eye. Additional coverage exists for keratoconus, low vision assessments, punctual plug insertions and lacrimal dilation and irrigation.
Prince Edward Island	Never insured
Newfoundland & Labrador	Coverage was fully de-insured in 1991.

*For detailed information about provincial coverage and referral protocol, visit **www.opto.ca** and click the "Links" button for Provincial Optometric Association contact information.*

Target Seasonal Allergic Conjunctivitis with Alrex®

Treat the Signs and Symptoms

- ALREX® for temporary relief of the signs and symptoms of seasonal allergic conjunctivitis[1]
- Proven efficacy with an excellent safety profile[1]
- Available in 5 mL bottles

ALREX® (loteprednol etabonate) Ophthalmic Solution 0.2% is indicated for temporary short-term relief of the signs and symptoms of seasonal allergic conjunctivitis.

Alrex® is for ophthalmic, short-term use only (up to 14 days). If Alrex® is used for 10 days or longer, intraocular pressure should be monitored.

Alrex® is contraindicated in suspected or confirmed infections of the eye: viral diseases of the cornea and conjunctiva including epithelial *herpes simplex* keratitis (dendritic keratitis), vaccinia, and varicella; untreated ocular infection of the eye; mycobacterial infection of the eye and fungal diseases of ocular structures; hypersensitivity to this drug or any ingredient in the formulation or container, or to other corticosteroids.

Reactions associated with ophthalmic steroids include elevated intraocular pressure, which may be associated with optic nerve damage, visual acuity and field defects, posterior subcapsular cataract formation, secondary ocular infection from pathogens including *herpes simplex*, and perforation of the globe where there is thinning of the cornea or sclera.

In clinical studies, adverse events related to loteprednol etabonate were generally mild to moderate, non-serious and did not interrupt continuation in the studies. The most frequent ocular event reported as related to therapy was increased IOP: 6% (77/1209) in patients receiving loteprednol etabonate, as compared to 3% (25/806) in the placebo treated patients.

BAUSCH + LOMB

Pr Alrex®
loteprednol etabonate
ophthalmic suspension 0.2%

PAAB

Bausch & Lomb Canada Inc., Vaughan, Ontario L4K 4B4

References: 1. ALREX Product Monograph, December 22, 2008

See prescribing summary on pages 20-21

Pr Alrex®

(loteprednol etabonate ophthalmic suspension 0.2% w/v)

Prescribing Summary

Patient Selection Criteria

THERAPEUTIC CLASSIFICATION

Corticosteroid

INDICATIONS AND CLINICAL USE

Alrex® (loteprednol etabonate) Ophthalmic Suspension is indicated for temporary short-term relief of the signs and symptoms of seasonal allergic conjunctivitis

CONTRAINDICATIONS

Suspected or confirmed infection of the eye: viral diseases of the cornea and conjunctiva including epithelial herpes simplex keratitis (dendritic keratitis), vaccinia, and varicella; untreated ocular infection of the eye; mycobacterial infection of the eye and fungal diseases of ocular structures; hypersensitivity to this drug or any ingredient in the formulation or container, or to other corticosteroids.

SPECIAL POPULATIONS

Use in Pediatrics (< 18 years of age):

Alrex® should not be used in pediatric patients.

Use in Geriatrics:

Alrex® should not be used in geriatric patients. The safety and efficacy of Alrex® have not been established in patients > 65 years of age.

Pregnant Women:

Alrex® should not be used in pregnant women, unless the benefit clearly outweighs the risks. Studies in pregnant women have not been conducted.

Nursing Women:

Alrex® should not be used in lactating women, unless the benefit clearly outweighs the risks.

Safety Information

WARNINGS AND PRECAUTIONS

General

For ophthalmic, short-term use only (up to 14 days).

The initial prescription and renewal of Alrex® should be made by a physician only after appropriate ophthalmologic examination is performed. If signs and symptoms fail to improve after two days, the patient should be re-evaluated. If Alrex® is used for 10 days or longer, intraocular pressure should be closely monitored.

Prolonged use of corticosteroids may result in cataract and/or glaucoma formation. Alrex® should not be used in the presence of glaucoma or elevated intraocular pressure, unless absolutely necessary and close ophthalmologic monitoring is undertaken. Extreme caution should be exercised, and duration of treatment should be kept as short as possible.

Alrex® should not be used in cases of existing (suspected or confirmed) ocular viral, fungal, or mycobacterial infections. Alrex® may suppress the host response and thus increase the hazard of secondary ocular infections. The use of Alrex® in patients with a history of herpes simplex requires great caution and close monitoring.

Alrex® contains benzalkonium chloride.

Alrex® has not been studied in pregnant or nursing women, but has been found to be teratogenic in animals. Alrex® should not be used in pregnant or nursing women unless the benefits clearly outweigh the risks.

Carcinogenesis and Mutagenesis

Long-term animal studies have not been conducted to evaluate the carcinogenic potential of loteprednol etabonate. Loteprednol etabonate was not genotoxic *in vitro* in the Ames test, the mouse lymphoma tk assay, or in a chromosome aberration test in human lymphocytes, or *in vivo* in the single dose mouse micronucleus assay.

Ophthalmologic

Alrex® should be used as a brief temporary treatment. If Alrex® is used for 10 days or longer, intraocular pressure should be closely monitored. The initial prescription and renewal of Alrex® should be made by a physician only after appropriate ophthalmologic examination is performed, ie. slit lamp biomicroscopy or fluorescein staining if appropriate. If signs and symptoms fail to improve after two days, the patient should be re-evaluated.

Prolonged use of corticosteroids may result in glaucoma with damage to the optic nerve, defects in visual acuity and fields of vision, and in posterior subcapsular cataract formation. Alrex® should not be used in the presence of glaucoma or elevated intraocular pressure, unless absolutely necessary and careful and close appropriate ophthalmologic monitoring (including intraocular pressure and lens clarity) is undertaken.

Corneal fungal infections are particularly prone to develop coincidentally with long-term local steroid application. Fungus invasion must be considered in any persistent corneal ulceration involving steroid use. Fungal cultures should be taken when appropriate.

Prolonged use of corticosteroids may suppress the host response and thus increase the hazard of secondary ocular infections. In those diseases causing thinning of the cornea or sclera, perforations have been known to occur with the use of topical steroids. In acute purulent conditions of the eye, steroids may mask infection or enhance existing infection.

Use of ocular steroids may prolong the course and may exacerbate the severity of many viral infections of the eye (including herpes simplex). Employment of a corticosteroid medication in the treatment of patients with a history of herpes simplex requires great caution.

Formulations with benzalkonium chloride should be used with caution in soft contact lens wearers.

ADVERSE REACTIONS

Overview

Reactions associated with ophthalmic steroids include elevated intraocular pressure, which may be associated with optic nerve damage, visual acuity and field defects, posterior subcapsular cataract formation, secondary ocular infection from pathogens including herpes simplex, and perforation of the globe where there is thinning of the cornea or sclera.

In nineteen clinical trials ranging from 1 to 42 days in length, 1,209 patients received various concentrations of loteprednol etabonate in topical ocular drops (0.005%, 0.05%, 0.1%, 0.2%, 0.5%). Adverse events related to loteprednol etabonate were generally mild to moderate, non-serious and did not interrupt continuation in the studies. The most frequent ocular event reported as related to therapy was increased IOP: 6% (77/1209) in patients receiving loteprednol etabonate, as compared to 3% (25/806) in the placebo treated patients.

With the exception of elevations in IOP, the incidence of events in the LE group was similar to, or less than that of the placebo control groups. Itching was reported as related to therapy in 3% of the loteprednol treated eyes, injection, epiphora, burning/stinging other than at instillation, foreign body sensation, and burning/stinging at instillation were each reported for 2% of eyes. The most frequent non-ocular event reported as related to therapy was headache, reported for 1.2% of the loteprednol treated subjects and 0.6% of the placebo treated subjects.

To report an adverse event, contact your Regional Adverse Reaction Monitoring Office at 1-866-234-2345 or Bausch & Lomb at 1-888-459-5000

Administration

One drop instilled into the affected eye(s) four times daily for up to 14 days. If scheduled dose is missed, patient should be advised to wait until the next dose and then continue as before.

SHAKE VIGOROUSLY BEFORE USING. Alrex® should be stored upright between 15°–25°C for up to 28 days after first opening.

The preservative in Alrex®, benzalkonium chloride, may be absorbed by soft contact lenses, and can discolour soft contact lenses. Therefore, Alrex® should not be used while the patient is wearing soft contact lenses. Patients who wear soft contact lenses and whose eyes are not red should wait ten to fifteen minutes after instilling Alrex® before they insert their contact lenses.

Patients should be advised not to wear a contact lens if their eye is red. Alrex® should not be used to treat contact lens related irritation.

SUPPLEMENTAL PRODUCT INFORMATION

WARNINGS AND PRECAUTIONS

Sexual Function/Reproduction

The effects of Alrex® on sexual function and reproduction have not been studied in humans. Treatment of male and female rats with up to 50 mg/kg/day and 25 mg/kg/day of loteprednol etabonate, respectively, (1000 and 500 times the Alrex® clinical dose) prior to and during mating, was clearly harmful to the rats, but did not impair their copulation

performance and fertility (i.e., ability of female rats to become pregnant). However, these doses were highly toxic and had significant toxic effects on the pregnancies, and the survival and development of the offspring. Maternal toxicity, possible occurrence of abnormalities and growth retardation started at 10 times the Alrex® clinical dose.

Neurologic
Disturbances and suppression of the Hypothalamic-Pituitary-Adrenal (HPA) axis can occur with systemic exposure to corticosteroids. However, given the very low systemic exposure to loteprednol etabonate when using Alrex® as directed, these possible effects are not likely.

Endocrine and Metabolism
Glucocorticoids, mostly when systemic exposure occurs, decrease the hypoglycemic activity of insulin and oral hypoglycemics, so that a change in dose of the antidiabetic drugs may be necessitated. In high doses, glucocorticoids also decrease the response to somatotropin. The usual doses of mineralocorticoids and large doses of some glucocorticoids cause hypokalemia and may exaggerate the hypokalemic effects of thiazides and high-ceiling diuretics. In combination with amphotericin-B, they also may cause hypokalemia. Glucocorticoids appear to enhance the ulcerogenic effects of non-steroidal anti-inflammatory drugs. They decrease the plasma levels of salicylates, and salicylism may occur on discontinuing steroids. Glucocorticoids may increase or decrease the effects of prothrombopenic anticoagulants. Estrogens, phenobarbital, phenytoin and rifampin increase the metabolic clearance of adrenal steroids and hence necessitate dose adjustments.
However, given the very low systemic exposure to loteprednol etabonate when using Alrex® as directed, these possible effects are not likely.

Immune
Cortisol and the synthetic analogs of cortisol have the capacity to prevent or suppress the development of the local heat, redness, swelling, and tenderness by which inflammation is recognized. At the microscopic level, they inhibit not only the early phenomena of the inflammatory process (edema, fibrin deposition, capillary dilation, migration of leukocytes into the inflamed area, and phagocytic activity) but also the later manifestations, such as capillary proliferation, fibroblast proliferation, deposition of collagen, and, still later, cicatrisation.

Clinical Trial Adverse Drug Reactions
Possibly or probably related adverse events from two Phase III studies are listed below:

	Alrex® 0.2% N = 133	Placebo N = 135
SPECIAL SENSES (EYE DISORDERS)		
Intraocular Pressure		
- elevation of 6 to 9mm Hg*	2% to 12%*	0% to 6%*
- elevation of ≥10mm Hg	1 (1%)	1 (1%)
Chemosis	6 (5%)	7 (5%)
Vision, Abnormal or Blurred	4 (3%)	5 (4%)
Burning/Stinging, on instillation	3 (2%)	6 (4%)
Itching Eye	3 (2%)	3 (2%)
Dry Eye	2 (2%)	4 (3%)
Burning/Stinging, not on instillation	2 (2%)	2 (1%)
Epiphora	1 (1%)	9 (7%)
Discharge	1 (1%)	3 (2%)
Foreign Body Sensation	1 (1%)	1 (1%)
Discomfort Eye	1 (1%)	0 (0%)
Injection	1 (1%)	0 (0%)
Eye Pain	1 (1%)	0 (0%)
Sticky Eye	0 (0%)	7 (5%)
Erythema Eyelids	0 (0%)	2 (1%)
Eye Disorder	0 (0%)	2 (1%)
BODY AS A WHOLE		
Face Edema (Head)	1 (1%)	0 (0%)
Allergic Reaction	1 (1%)	0 (0%)
MUSCULOSKELETAL SYSTEM		
Twitching	0 (0%)	1 (1%)

* for IOP increase of 6 to 9 mm Hg, please see below

One patient in the Alrex® group and one patient in the placebo group experienced increases in IOP of ≥10 mm Hg. Among these, one in each group had an IOP increase of ≥15 mm Hg, reaching IOP values over 30 mm Hg.
In both studies, there were more patients with IOP increases of 6 to 9 mm Hg in the Alrex® group than in the placebo group (see table below). In study A, among the patients with IOP increases of 6 to 9 mm Hg, four reached an IOP value of 22 to 23 mm Hg, and one patient reached 29 mm Hg and was discontinued (clinically significant increase in IOP). All these five patients were from the Alrex® groups.

Incidence of IOP increases of 6 to 9 mm Hg from baseline
(number of patients and percentages)

	Duration of treatment		
	Day 7	Day 14	Day 28
Alrex®			
Study-A	6 (9%)	6 (9%)	8 (12%)
Study-B	3 (5%)	1 (2%)	4 (6%)
Placebo			
Study-A	0 (0%)	4 (6%)	1 (2%)
Study-B	0 (%)	0 (%)	0 (%)

Due to the sample size for each arm of the two phase III studies in SAC, all events captured are greater than 1% of n.

SYMPTOMS AND TREATMENT OF OVERDOSAGE
For management of suspected accidental oral ingestion or drug overdose, consult your regional poison control centre.
No cases of overdose have been reported.
Full Product Monograph available for health professionals at: http://www.bausch.ca

BAUSCH+LOMB

PAAB

Une vue d'ensemble de la couverture provinciale des soins optométriques en 2012

Province	Couverture santé
Colombie-Britannique	Le régime d'assurance médicale de la Colombie-Britannique assure une partie seulement des services optométriques, et les optométristes peuvent percevoir un copaiement raisonnable de leurs patients. Les examens courants sont couverts une fois l'an pour les patients de moins de 19 ans et pour ceux de plus de 64 ans. Tous les patients reçoivent sans frais les services cliniques dont ils ont besoin pour le traitement de maladies oculaires, de traumatismes ou lésions ou de maladies systémiques associées à un risque important pour la santé oculaire (p. ex., le diabète); il en est de même des patients qui prennent des médicaments associés à un risque élevé pour la santé oculaire.
Alberta	Les enfants et les jeunes de moins de 19 ans et les adultes de plus de 64 ans sont couverts pour ce qui est des examens de la vue, des examens partiels et des procédures spécifiques reposant sur un besoin médical – les patients âgés de 19 à 64 ans sont couverts pour les soins cliniquement nécessaires (composition chimique des larmes, chambre antérieure, tonomètre, vision des couleurs, examen de la basse vision, périmétrie visuelle assistée par ordinateur).
Saskatchewan	Les enfants et les jeunes de moins de 18 ans sont couverts pour un examen de la vue par période de 12 mois ainsi que pour les examens répétitifs et partiels. Il y a aussi, pour tous les âges, couverture des frais d'une première évaluation et des traitements oculaires urgents qui en découlent, et des visites à l'urgence. Sont également couverts : les bénéficiaires de soins de santé supplémentaires, les bénéficiaires de prestations de santé familiales et les personnes âgées (65 ans et plus) touchant le supplément du régime de revenu de la Saskatchewan.
Manitoba	Les enfants et les jeunes de moins de 19 ans et les adultes de plus de 64 ans sont couverts pour un examen tous les deux ans. Les patients âgés de 19 à 64 ans ne sont plus assurés, sauf pour des raisons cliniques. La protection du régime inclut les examens complets et partiels de la vue, les examens complets du champ visuel, la tonométrie et l'examen du fond d'œil sous pupille dilatée.
Ontario	L' Assurance-santé de l'Ontario couvre les examens annuels de la vue de base pour les personnes de moins de 20 ans et pour celles de plus de 65 ans. Les personnes atteintes de diabète bénéficient d'un examen de base annuel de la vue. Les personnes âgées de 19 à 65 ans peuvent recevoir sans frais un examen de base de la vue soit à la suite d'une demande d'un médecin, soit sur consultation pour une maladie ou un trouble oculaire répondant spécifiquement aux critères d'un service assuré. Les personnes assurées sont admissibles à une évaluation partielle lorsque la situation est jugée cliniquement nécessaire. Un test automatisé du champ visuel indiqué cliniquement est un service assuré chez un patient dont l'examen visuel de base fait partie des services assurés.
Québec	La couverture des soins vise les personnes âgées de 0 à 17 ans et celles de 65 ans et plus et comprend : examen de la vue, tonométrie / biomicroscopie, test du champ visuel, examen spécifique pour évaluation de lentilles cornéennes, etc. Depuis mai 2009, les patients diabétiques ou les patients myopes de 5,00D et plus bénéficient sans frais d'une dilatation des pupilles. À l'urgence, seul le diagnostic de troubles oculaires est couvert, et cela, pour tout le monde; le traitement est aux frais du patient.
Nouveau-Brunswick	Il n'existe aucune provision d'assurance-maladie provinciale pour les services optométriques au Nouveau-Brunswick, à l'exception des bénéficiaires de l'aide sociale. L'Association des optométristes du Nouveau-Brunswick a annoncé un nouveau contrat de trois ans de développement social qui entrera en vigueur le 1er juin 2012. Le contrat inclut des examens annuels importants pour les patients diabétiques.
Nouvelle-Écosse	Un examen complet de la vue lors d'une visite régulière est remboursé une fois tous les deux ans pour les enfants de moins de 10 ans et pour les personnes de 65 ans et plus. Les frais de cet examen sont également couverts une fois l'an pour les personnes de tous âges en cas de besoin clinique, par exemple, les patients atteints d'une affection (comme le diabète) ou qui prennent des médicaments susceptibles de présenter un risque pour la santé oculaire. Les examens partiels sont assurés jusqu'à six fois l'an pour le diagnostic et le traitement d'une infection, d'une allergie ou d'une inflammation oculaires ou pour l'enlèvement de corps étrangers de l'œil. D'autres services sont également remboursés, notamment le kératocône, les évaluations de la basse vision, l'insertion de bouchons méatiques et la dilatation et l'irrigation lacrymales.
Île-du-Prince-Édouard	Jamais assurés.
Terre-Neuve-et-Labrador	Désassurance complète des soins en 1991.

Pour des informations détaillées au sujet de la couverture provinciale des soins ou sur le protocole pour diriger les patients vers un professionnel de la santé, visitez ***www.opto.ca*** *et cliquez sur "hyperliens" pour obtenir les coordonnées des associations provinciales optométriques.*

Acuvue celebrates 25th anniversary of first disposable contact lens

with launch of new 1-DAY ACUVUE® MOIST® BRAND CONTACT LENSES for ASTIGMATISM

Accurate fast fit and extensive range of power availability enables practitioners to fit more patients with astigmatism in a daily disposable toric contact lens

TORONTO (April 24, 2012) – A quarter of a century after revolutionizing the contact lens industry with the introduction of the first disposable soft contact lens, Johnson & Johnson Vision Care Inc., announced the Canadian launch of 1-DAY ACUVUE® MOIST® Brand Contact Lenses for ASTIGMATISM, a new daily disposable soft toric contact lens for individuals with astigmatism.

"Research confirms that nearly half of all patients requiring vision correction have clinically significant levels of astigmatism in at least one eye[1]," says Vishakha Thakrar, OD, FAAO, Professional Affairs, Johnson & Johnson Vision Care Inc. "Additional studies show that toric soft contact lenses such as 1-DAY ACUVUE® MOIST® for ASTIGMATISM Brand provide significantly better visual acuity compared to spherical lenses for astigmatic patients, and provide comparable visual acuity to spectacle wear[2]," she adds.

Along with the health and convenience benefits of wearing a fresh contact lens every day, 1-DAY ACUVUE® MOIST® for ASTIGMATISM features a proprietary BLINK STABILIZED™ Design, which harnesses the natural pressures of a blinking eye to help keep the lens in place and quickly realign the lens if it rotates out of position, providing wearers with consistent, all-day vision. This also provides a marked advantage for practitioners because the lens settles within one minute, thus reducing chair time and the need for further progress evaluations.

"Fluctuating vision during everyday activities such as reading a newspaper, text messaging or using a computer, changing lanes while driving, playing sports, or watching TV when lying down is one of the main reasons for dissatisfaction among many astigmatic contact lens wearers," explains Dr. Thakrar. "Studies have demonstrated that contact lenses such as 1-DAY ACUVUE® MOIST® for ASTIGMATISM and ACUVUE® OASYS® Brand Contact Lenses for ASTIGMATISM, which both utilize BLINK STABILIZED™ Design, have a number of advantages over other traditional soft toric contact lens designs in reducing variable vision and blur that often occur during these types of activities[3]."

1-DAY ACUVUE® MOIST® for ASTIGMATISM are made using LACREON® Technology, a unique process that permanently embeds a water holding ingredient, similar to that found in natural tears, into the proven etafilcon A material of the 1-DAY ACUVUE® Brand. This technological advancement locks in moisture that lasts throughout the day, addressing the most frequently reported complaints of contact lens discomfort - dryness and end of day comfort.

With over 1,500 SKUs (12 axes, 4 cylinders) at distance parameters of +4.00D to -9.00D, 1-DAY ACUVUE® MOIST® for ASTIGMATISM has the widest power range available of any daily disposable toric contact lens, allowing 95 percent of patients to be fit in the 1-DAY ACUVUE® MOIST® family of lenses, even if they have astigmatism.

1-DAY ACUVUE® MOIST® for ASTIGMATISM/2

1-DAY ACUVUE® MOIST® for ASTIGMATISM blocks approximately 82% of UV-A radiation and 97% of UV-B radiation†*. Although UV-blocking contact lenses provide important added protection, they should not be viewed as a stand-alone solution. "For more complete protection, UV-blocking contact lenses should always be worn in conjunction with high-quality UV-blocking sunglasses and a wide-brimmed hat," says Dr. Thakrar.

ACUVUE® Brand Contact Lenses are indicated for vision correction. As with any contact lens, eye problems, including corneal ulcers, can develop. Some wearers may experience mild irritation, itching or discomfort. Lenses should not be prescribed if patients have any eye infection, or experience eye discomfort, excessive tearing, vision changes, redness or other eye problems. Consult the package insert for complete information. Complete information is also available from Johnson & Johnson Vision Care, Inc., by calling 1-800-267-5098 or by visiting www.jnjvisioncare.ca

Johnson & Johnson Vision Care
A Division Of Johnson & Johnson, Inc.

For further information, contact:
Gary Esterow
Johnson & Johnson Vision Care Inc.
(904) 629-6232
Gester1@its.jnj.com

† Helps protect against transmission of harmful UV radiation to the cornea and into the eye.
*WARNING: UV-absorbing contact lenses are NOT substitutes for protective UV-absorbing eyewear such as UV-absorbing goggles or sunglasses because they do not completely cover the eye and surrounding area. You should continue to use UV-absorbing eyewear as directed. NOTE: Long term exposure to UV radiation is one of the risk factors associated with cataracts. Exposure is based on a number of factors such as environmental conditions (altitude, geography, cloud cover) and personal factors (extent and nature of outdoor activities). UV-Blocking contact lenses help provide protection against harmful UV radiation. However, clinical studies have not been done to demonstrate that wearing UV-Blocking contact lenses reduces the risk of developing cataracts or other eye disorders. Consult your eye care practitioner for more information.

1 *Source: Young, G, Sulley, A, Hunt, C, "Prevalence of Astigmatism in Relation to Soft Contact Lens Fitting," Eye & Contact Lens: Science and Clinical Practice, Vol. 37, January 2011.*

2 *Source: Sulley, A, Young, G, Osborn, K, Hunt, C, "How Easy Is It to Fit Soft Toric Contact Lenses to Current Non-users?" – presented at American Academy of Optometry meeting (Boston, MA, October 2011)*

3 *Source: Young G, McIlraith R, Hunt C. Clinical Evaluation of Factors Affecting Soft Toric Lens Orientation. Optometry and Vision Science 86(11):E1259-E1266, November 2009.*

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CONNECTING VISIONS

Dry eye clinic opens at the ÉOUM | Une clinique de sécheresse oculaire est maintenant ouverte à l'ÉOUM

Attending the Dry Eye Clinic inauguration, left to right: Etty Bitton (Director of the Dry Eye Clinic); Lynne O'Halloran (Alcon); Michelle Ummels (Alcon); Steven Carrier (President of the Quebec Association of Optometrists); Anne Brown (Alcon); Mrs Louise Beliveau (Vice-rector of the University-ribbon cutting); Geneviève Boucher (Topcon Canada); Brian Beatty (Alcon); Gaétan Gravel (Topcon Canada); Christian Casanova (Director of the Optometry School).

By / Par Etty Bitton, OD, MSc, FAAO

The clinic at the École d'optométrie, Université de Montréal (EOUM) offers many different services to its patients. It provides ocular health assessments, optical services, prescribes contact lenses, works with binocular vision issues, treats low vision and more. These services have recently expanded to now include a clinic dedicated to dry eye – a first amongst North American optometry schools.

Dry eye (DE) is not new to optometry. There are many factors that contribute to DE including age, gender, systemic disease, medication use, contact lens wear, environmental issues, history of ocular surgery and more. It became evident that it was time to develop a systematic approach offering services specific to this common chronic affliction. The clinic serves as a referral source for patients as well as the optometric community.

Defining and understanding dry eye has captured international attention, which has in turn provided the scientific community with two pivotal reports, namely the Dry Eye WorkShop (DEWS) report, and more recently the Meibomian Gland Dysfunction (MGD) Report. Recent advances in DE have not only allowed a more comprehensive understanding of this chronic disease, but it is also the first time that there are new tools for the diagnosis of DE and specific therapeutic treatment options. We hope to combine these findings with the latest technologies to deliver contemporary services and provide an efficient model for future optometrists.

The dry eye clinic was inaugurated on April 30, 2012 with a ribbon cutting ceremony. On hand to show support were industry representatives from Alcon Canada and TOPCON Canada Inc. Alcon provided an infrastructure development grant and TOPCON supplied an integrated slit lamp camera – a TOPCON DC-3 digital camera with IMAGEnet imaging software.

La clinique de l'École d'optométrie de l'Université de Montréal offre plusieurs services à ses patients, tels qu'évaluer la santé oculaire, offrir des services optiques,

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Eyecare professionals in Canada can learn more about this groundbreaking technology and other exciting possibilities on the horizon from Transitions Optical during a multi-city "What's Possible" tour. To find out when the tour will be in a city near you and to learn more about Transitions Vantage lenses, visit TransitionsVantage.ca or call Transitions Optical Customer Service at **(877) 254-2590**.

prescrire des lentilles cornéennes, travailler avec des problèmes de vision binoculaire, traiter la basse vision et plus encore. Récemment, un nouveau service s'est rajouté à cet inventaire, soit une clinique dédiée à la sécheresse oculaire, une première parmi les écoles d'optométrie nord-américaines.

La sécheresse oculaire n'est pas une nouveauté pour l'optométrie. Il y a plusieurs facteurs qui contribuent à la sécheresse oculaire, incluant l'âge, le genre, les maladies systémiques, l'utilisation de médicaments, le port de lentilles cornéennes, les problèmes environnementaux, l'histoire de chirurgie oculaire et plus encore. Il était évident que nous devions développer une approche systématique pour offrir des services spécifiques aux patients ayant cette affliction commune et chronique. Cette clinique sert maintenant de source de référence pour les patients ainsi que la communauté optométrique.

La sécheresse oculaire a attiré l'attention internationale quant à sa définition et sa compréhension, ce qui a fournit la communauté scientifique avec deux rapports pivots, c'est-à-dire le rapport « Dry Eye WorkShop » (DEWS) et plus récemment le rapport « Meibomian Gland Dysfunction (MGD) ». Les progrès récents concernant la sécheresse oculaire ont non seulement permis une compréhension plus complète de cette affliction chronique, mais c'est aussi la première fois que nous avons de nouveaux outils pour son diagnostic et des options de traitement thérapeutique spécifique à celle-ci. Nous espérons combiner ces résultats avec les toutes dernières technologies pour fournir des services modernes et un modèle efficace pour les futurs optométristes.

L'inauguration de la clinique de sécheresse oculaire a eu lieu le 30 avril 2012. Lors de cette cérémonie, des représentants d'Alcon Canada et de TOPCON Canada inc. étaient présents pour montrer leur appui. D'ailleurs, Alcon a fourni une subvention pour le développement des infrastructures et TOPCON a fourni une lampe à fente intégrée avec une caméra digitale DC-3 et le logiciel d'imagerie « IMAGEnet ».

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ADAPTIVE LENSES

Maximize the value of your practice

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Low interest rates and the peculiarities of demographics have created an increasing demand for optometric practices. It is a good time to sell a practice but it won't always be so. Interest rates will inevitably rise, money will tighten and baby boomers will all eventually retire. If you are interested in selling your practice, there are some tangible steps you can take to maximize its value:

1. Start Early

There are things you can do to increase the value of your practice. But you need time to implement some of these strategies. You should develop a succession plan with your accountant and other professional advisors. The plan should incorporate both your lifestyle and professional goals. What will your post retirement life look like? Will you continue to work in your profession? You need to establish some timelines if you would like to reach your goals. It is not unreasonable to begin the succession process five years prior to your planned retirement date.

2. Take Care of Business

You should always keep an eye on maintaining the value of your practice. After all, for many optometrists, their practice is their most valuable asset and the source of most of their retirement income. Of course it is not practical to always fret about the value of one's practice but maintaining a growing and efficient practice with a good recall program will go a long way to maximizing the value of your practice.

3. Keep it Growing

Growing practices will usually command a premium price. But all too often, as an optometrist approaches retirement he or she will slow down, undermining the value of their practice. A better alternative would be to hire a young Associate to keep new patients flowing in the door. As an added bonus, this Associate may eventually buy your practice.

4. Total Recall

The value of an optometric practice is based, in part, on the number of active patients. An active patient is usually defined as someone who has had at least one appointment in the past 12 months. There's gold in those old patient files. A phone call inviting your less active patients to come in for an eye exam will reap huge dividends. (*see point 5 below*)

5. Pick Your Own

An optometric practice is unlike most other businesses. An optometrist looks after his/her patient's most precious gift, his/her vision. As a result, an optometrist tends to build a close long term personal relationship with his/her patients and their families. Many optometrists want to make sure the purchaser is good with both the patients and the staff of the practice. Furthermore, many optometrists stay on at their old practice as an Associate. The new purchaser will therefore also become your new boss. Instead of just selling your practice to the highest bidder, many optometrists will hire an Associate as their hand picked successor.

6. Get Professional Advice

Finally, succession planning is not a do-it-yourself project. You will need the advice of your accountant, lawyer, banker and financial planner to ensure that you structure a tax efficient transaction that will meet all your goals. Many optometrists also attempt to avoid paying brokerage fees by trying to find a purchaser of own practice by themselves. Yes, brokerage fees are expensive and can exceed 10% of the sale price of your practice. But many good brokers are able to increase the pool of ready buyers for your practice and should earn their keep by increasing the sale price by more than their 10% fee.

Scotiabank's Professional Plan will finance up to 75% of the appraised value of the purchase of a optometric practice (including Goodwill). The percentage financed may be reduced, depending on the merits of the credit request. Financing is provided by a term loan, amortized over 10 years. Legal and accounting fees of up to $30,000 may be included in the financing request. Lines of credits are provided as an overdraft in the practice's current account and set at approximately 25% of annual sales. Both term loans and credit lines are priced at preferred rates. Sellers obtain preferred access to a dedicated team of advisors with expertise in financial planning, investment management, will and estate planning, practice protection and succession planning.

Scotia Professional Plan also provides optometrists with discounts on their current account service charges, credit cards and new lower rates for their merchant services. Please contact Irv Handler at **647-286-5839** or email **irv.handler@scotiabank.com** for more information.

La neuvième journée scientifique de l'École d'optométrie | Œil, Vision et Perception

Ninth School of Optometry Science Day | Eye, Vision and Perception

Par/ By Claude J Giasson O.D., Ph.D.

Le 30 mars dernier, L'École d'optométrie de l'Université de Montréal tenait sa neuvième journée scientifique, la cinquième organisée conjointement avec le Groupe de recherche en sciences de la vision (GRSV). Sous le thème, « Œil, Vision et Perception », la journée s'est bien déroulée en dépit du mouvement de grève des étudiants de plusieurs unités de l'Université de Montréal. Après les allocutions d'usage du directeur de l'École, M. Christian Casanova et du directeur du GRSV, M. Jean-François Bouchard, un total de dix conférences et trente-cinq affiches sur des sujets variés ont été présentées par des chercheurs et des étudiants. Les tableaux 1, 2 et 3 énumèrent ces présentations selon qu'il s'agit d'une conférence ou d'une affiche présentée par un étudiant gradué ou par un étudiant en optométrie. En plus de ces présentations des étudiants, les organisateurs de la journée scientifique étaient heureux d'accueillir deux chercheurs séniors à titre de conférenciers invités pour cette journée de célébration de la recherche par l'École d'optométrie et son groupe de recherche.

Le Professeur Sylvain Chemtob au moment de présenter sa conférence sur la rétinopathie des prématurés. / Professor Sylvain Chemtob presents his conference on the retinopathy of prematurity.

Le Professeur Sylvain Chemtob, M.D., Ph.D. FRCPC, FCAHS a présenté une conférence intitulée, « La Rétinopathie du prématuré : Serait-ce une prédisposition à la dégénérescence de la rétine adulte? » Cette maladie du prématuré, la plus importante cause de cécité chez l'enfant, intéresse particulièrement le Dr Chemtob. Celui-ci est professeur titulaire aux départements de pédiatrie, d'ophtalmologie et de pharmacologie de l'Université de Montréal et professeur associé à l'École d'optométrie. Il est titulaire

TABLEAU / TABLE 1

Communications orales réalisées par des étudiants gradués / Graduate Student Oral Presentations

Titre de la présentation / Presentation title	Étudiant/Student
La stimulation de PAR-2 neuronale augmente la revascularisation rétinienne dans un modèle murin de rétinopathie induite par l'oxygène	Nicholas Sitaras (PhD)
Netrin-1 Enhances Vascular Regrowth in the Oxygen-Induced Retinopathy Model	François Binet (chercheur post-doctoral)
A spectro reflectance camera for in vivo human blood evaluation	Seddik Benhamadi (MSc)
Effets de la sérotonine et de la fluoxetine sur la plasticité du cortex visuel primaire	Lyes Bachatene (PhD)
Activation of the cortical inhibitory neurons in layer V/VI during orientation selective perceptual learning induced by visual/cholinergic training	Jun-Il Kang (PhD)
Discrete Wavelet Analysis Provides a New Powerful Toolbox for Studying the Photopic Electroretinogram: bringing Clinical ERG Analysis into the 21st Century	Mathieu Gauvin (MSc)
La perception du mouvement	Rémy Allard (chercheur post-doctoral)
Lors d'une tâche de poursuite visuelle d'éléments en mouvement présentés en 3D, les personnes âgées entraînées obtiennent des performances semblables à celles des jeunes non entraînés	Isabelle Legault (PhD)

TABLEAU / TABLE 2

Affiches réalisées par des étudiants gradués / Graduate student posters

Titre de la présentation	Étudiant
1 – People with Retinitis Pigmentosa Aren't Really that Different After All	Nathalie Duponsel (MSc)
1a – La douleur chez les non-voyants	Hocine Slimani (PhD)
2 – Modulation de l'activité des structures profondes du cerveau par optogénétique	Alexandre Castonguay (MSc)
3 – Évaluation de l'acuité visuelle chez la personne âgée atteinte de démence	Estefania Chriqui (MSc)
4 – Les récepteurs CB1 et CB2 aux cannabinoïdes régulent l'activité rétinienne de la souris adulte	Bruno Cécyre (MSc)
5 – La contribution de la stéréoscopie à la constance de forme	Julien Beaulieu (MSc)
6 – Impacts of muscarinic receptors on functional organization of the mouse primary visual cortex	Marianne Groleau (MSc)
7 – Sleep Quality in Patients with Retinal Disorders	Caitlin Murphy (PhD)
8 – Connexions corticocorticales directes entre le cortex visuel primaire et somesthésique	Ian Massé (PhD)
9 – L'effet de la perte de vision ou d'odorat depuis la naissance sur la perception gustative	Léa Gagnon (PhD)
10 – GPR55 et le guidage axonal au cours du développement	Hosni Cherif (PhD)
11 – Origines anatomiques des signaux intrinsèques rétiniens obtenus en imagerie optique	Azadeh Naderian (PhD)
12 – Distribution of cannabinoid receptor CB2 and monoglyceride lipase in the retina and optic nerve of the vervet monkey	Joseph Bouskila (PhD)
13 – TNF – α et récepteur AMPA perméable au Ca2+ dans la mort des cellules ganglionnaires rétiniennes dans le glaucome expérimental	Jorge Cueva (PhD)

d'une chaire de recherche du Canada en périnatologie et de la chaire Léopoldine A. Wolfe en recherche translationnelle sur la dégénérescence maculaire, à l'Université de Montréal. Le Dr Chemtob a publié plus de 200 articles scientifiques dans des revues de calibre international. Après des études en médecine à l'Université de Montréal, il se spécialise en pédiatrie et néonatologie, puis complète un PhD en pharmacologie à l'Université McGill, et un postdoctorat en physiologie à l'Université de l'Iowa.

En plus de s'intéresser aux désordres neuro-développementaux des nouveaux-nés, le Dr Chemtob s'est penché sur la dégénérescence maculaire qui affecte les gens âgés. En mettant l'accent sur les mécanismes de la microcirculation, l'angiogenèse, les radicaux libres et les facteurs pro-inflammatoires, l'équipe du Dr Chemtob a réalisé d`importantes découvertes en néonatologie, physiologie et pharmacologie. Non seulement a-t-elle mis en lumière des rôles majeurs joués par des facteurs pro-inflammatoires et des produits de nitration, mais elle a identifié le rôle de récepteurs du métabolisme intermédiaire dans l`angiogenèse. Elle a aussi contribué à décrire le rôle des récepteurs vidangeurs, CD36, dans la genèse de la forme sèche de la dégénérescence maculaire liée à l'âge. Les travaux en biologie cellulaire ont mené à la découverte de nouveaux récepteurs couplés aux protéines G sur la membrane nucléaire, assurant une régulation génomique non-conventionnelle par des mécanismes de signalisation nucléaire. Finalement, la découverte de nouvelles plateformes dans le développement de modulateurs allostériques de récepteurs à structure complexe a conduit au développement de molécules anti-inflammatoires de 4^{e} génération, qui font actuellement l`objet d`études cliniques.

La présentation du Dr Paul Khayat, le second conférencier invité, portait sur les mécanismes neurophysiologiques de l'attention visuelle. Les recherches principales du Dr Khayat visent à comprendre les processus neuronaux responsables de la perception sensorielle. Il étudie d'une part les mécanismes neurophysiologiques de l'attention (visuelle ou auditive) spatiale et non spatiale, et d'autre part, les mécanismes de l'intégration multisensorielle (visuo-auditive, somato-auditive). Il utilise ainsi diverses approches expérimentales, telles l'électrophysiologie animale, la psychophysique, et la magnétoencéphalographie (MEG) et l'EEG chez l'homme. Après une maîtrise en Science biologiques à l'Université de Montréal (1998), Paul Khayat a obtenu son doctorat en neuroscience à l'Université d'Amsterdam (The Netherlands Ophthalmic Research Institute) en 2004. Il a ensuite terminé un premier stage post-doctoral à l'Université

Mmes Jessica Bastien et Mélissa Cormier tiennent le chèque que leur ont remis les représentants de la société Allergan, Mme Andrée Anne Kelly et M. Nicolas Poirier sous l'œil de Claude Giasson, principal organisateur de la journée scientifique. /Winning students, Jessica Bastin and Mélissa Cormier hold the cheque that was presented to them by the Allergan representatives. They are accompanied by, Andrée Anne Kelly and Nicolas Poirier and Dr. Claude Giasson, the main organizer of the Science Day.

McGill où il a étudié les processus neurophysiologiques de l'attention visuelle chez le singe, puis un second à l'Université de Montréal où il a examiné ces processus chez l'humain à l'aide de l'EEG/MEG.

La tenue de cette journée a été rendue possible grâce à la généreuse contribution des sociétés Allergan, la Banque Nationale, Novartis, de même que du Réseau FRSQ de Recherche en Santé de la Vision du Québec et du Groupe de recherche en sciences de la vision (GRSV). Leurs commandites ont permis de décerner à la fin de la journée des prix à neuf étudiants pour l'excellence de leur travail. La sélection des gagnants a été exécutée par consensus auprès de différents jurys pour chaque catégorie d'étudiants, sauf dans le cas du prix du public qui était décerné à la présentation recueillant le plus de suffrages de l'auditoire. Lyes Bachatene s'est mérité le prix du public décerné par la société Allergan pour sa conférence intitulée : Effets de la sérotonine et de la fluoxetine sur la plasticité du cortex visuel primaire. Le GRSV a décerné deux prix à des étudiants gradués, l'un attribué pour la meilleure présentation orale à un stagiaire post-doctoral, François Binet et à sa présentation sur les effets de la nétrine dans la rétinopathie induite par l'oxygène, l'autre pour la meilleure présentation par affiche à Nathalie Duponsel pour son travail avec les patients atteints de rétinite pigmentaire. Le prix du Réseau FRSQ de recherche en Santé de la vision, a été attribué à Mathieu Gauvin pour l'excellence de sa présentation de sa méthode d'analyse des électrorétinogrammes photopiques. Au niveau du premier cycle, Lisa Hu et Hurina Thyriar se sont méritées le prix de la Banque nationale pour la meilleure affiche de recherche clinique pour leur affiche intitulée « Évaluation de la rotation de lentilles perméables aux gaz de grand diamètre sur la cornée ». Audrey Durivage et Alexandra Lessard ont remporté le prix de la Banque nationale pour la meilleure affiche scientifique pour des étudiants au doctorat en optométrie. Elles avaient comparé l'efficacité de désinfection de deux solutions d'entreposage à long terme d'une lentille cornéenne en Silicone-Hydrogel. Enfin, « Entraînement des amplitudes fusionnelles verticales », la présentation de Jessica Bastien et de Mélissa Cormier leur a permis de se mériter le prix de la société Allergan pour l'excellence de la communication en recherche clinique ou scientifique (doctorat en optométrie OD).

On March 30th, the School of Optometry at the University of Montreal held its 9th Science Day, the 5th one jointly organized with the Groupe de Recherche en Sciences de la Vision (GRSV). The event's theme was "Eye, Vision and Perception" and the day was a success despite the student strike held in many faculties of the University. After the usual speeches by Mr Christian Casanova, the Director of the School, and Mr Jean-François Bouchard, Director of the GRSV, a total of 10 conferences and 35 posters of various topics were presented by researchers and students. Tables 1, 2 and 3 list these. In addition to these student presentations, the Science Day's organizers were pleased to welcome two senior researchers as guest lecturers for this special day celebrating research at the School of Optometry and its research group. Professor Sylvain Chemtob, M.D., Ph.D. FRCPC, FCAHS, presented a conference entitled "La Rétinopathie du Prématuré : Serait-ce une prédisposition à la dégénérescence de la rétine adulte?" The retinopathy of prematurity, the most important cause of blindness in children, is of particular interest to Dr Chemtob. He is a professor in the departments of Pediatrics, Ophthalmology and Pharmacology at the University of Montreal and an associate professor at the School of Optometry. He holds a Canada Research Chair in Perinatology and the Léopoldine A. Wolfe Chair in translational research on macular degeneration at the University of Montreal. Dr Chemtob also published over 200 scientific articles in journals of international caliber. After graduating from medical school at the University of Montreal, he specialized in pediatrics and neonatology, completed a PhD in pharmacology at McGill University and a postdoctoral fellowship in physiology at the University of Iowa.

In addition to his interests in neurodevelopmental disorders in newborns, Dr Chemtob studied macular degeneration in older adults. While focusing on microcirculation mechanisms, angiogenesis, free radicals and pro-inflammatory factors, Dr Chemtob's team made important discoveries in neonatology, physiology and pharmacology. Not only did they highlight the major roles played by pro-inflammatory factors and nitration products, they also identified the role of receptors of the intermediary metabolism in angiogenesis. Furthermore, they contributed in describing the role of scavenger receptor CD36 in the genesis of the dry form of age-related macular degeneration. Work in cell biology has led to the discovery of new receptors coupled with G-proteins on the nuclear membrane, insuring an unconventional genomic regulation by nuclear signaling mechanisms. Finally, the discovery of new platforms in the development of allosteric modulators in complex structure receptors has led to the development of 4th generation anti-inflammatory molecules that are currently the subject of clinical trials.

Dr Paul Khayat, the second guest lecturer, delivered a presentation about the neurophysiological mechanisms of visual attention. Dr Khayat's main research aims at understanding the neuronal processes responsible of sensory perception. On the one hand, he studies the neurophysiological mechanisms of spatial and non-spatial attention (visual and auditory) and on the other hand, the mechanisms of multisensory integration (visual-auditory, somato-auditory). He uses various experimental approaches, such as animal electrophysiology, psychophysics, magnetoencephalography (MEG) and electroencephalography (EEG) in humans. After his Masters in Biological Sciences at the University of Montreal (1998), Paul Khayat received his PhD in Neurosciences at the University of Amsterdam (The Netherlands Ophthalmic Research Institute) in 2004. He then completed a first postdoctoral fellowship at McGill University where he studied the neurophysiological processes of visual attention in monkeys, and a second at the University of Montreal where he examined these processes in humans with the help of EEG/MEG.

This day was made possible by the generous contributions by Allergan, the National Bank, Novartis, the Réseau FRSQ de Recherche en Santé de la Vision du Québec and the Groupe de Recherche en Sciences de la Vision (GRSV). Their sponsorship enabled us to award prizes at the end of the day to nine students for their excellent work. The selection of winners was executed by consensus by the different juries for each category of students, except in the case of the audience award which was granted to the presentation that collected the most votes from the public. Lyes Bachatene won the audience award given by Allergan for her conference entitled "Effets de la sérotonine et de la fluoxetine sur la plasticité du cortex visuel primaire". The GRSV awarded two prizes to graduate students, one for the best oral presentation to a postdoctoral fellow, François Binet and his presentation on the effects of netrin in oxygen-induced retinopathy, the other for the best poster presentation to Nathalie Duponsel and her work with patients diagnosed with retinitis pigmentosa. The Réseau FRSQ de recherche en Santé de la Vision prize was awarded to Mathieu Gauvin for the excellence of his presentation of his analysis method of photopic electroretinograms. At the undergraduate level, Lisa Hu and Hurina Thyriar earned the National Bank award for the best clinical research poster entitled "Évaluation de la rotation de lentilles perméables aux gaz de grand diamètre sur la cornée". Audrey Durivage and Alexandra Lessard won the National Bank award for the best scientific poster by doctoral students in optometry. They compared the disinfection efficacy of two solutions for long term storage of a Silicone Hydrogel contact lens.

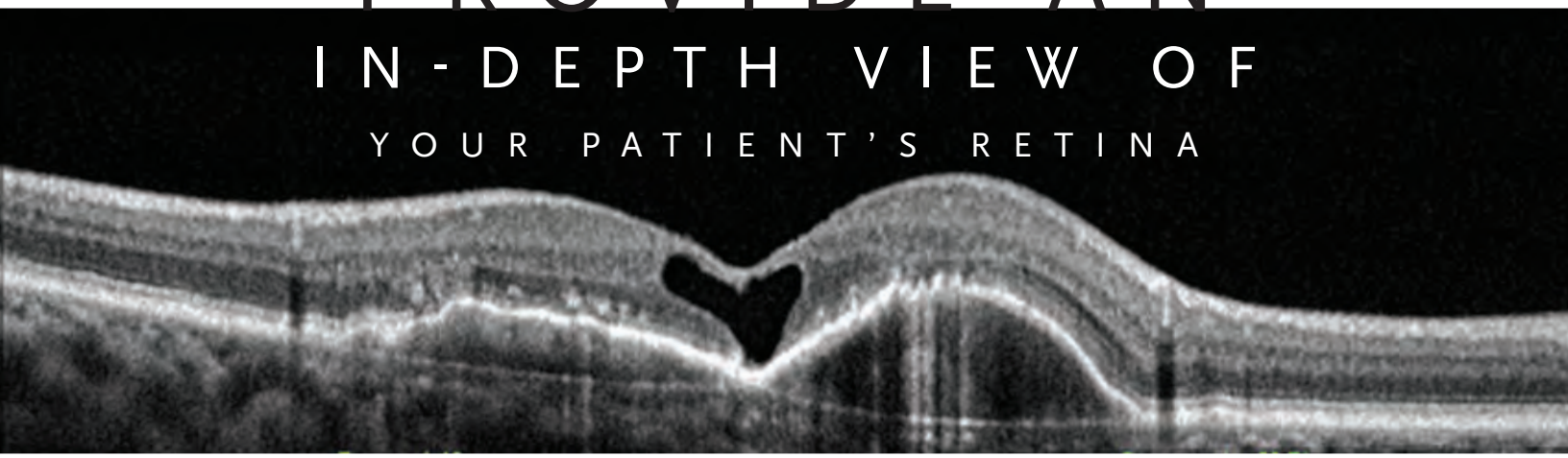
Jessica Bastien and Mélissa Cormier won the Allergan award for communication excellence in clinical or scientific research (Doctor of Optometry – OD) for their presentation entitled "Entraînement des amplitudes fusionnelles verticales".

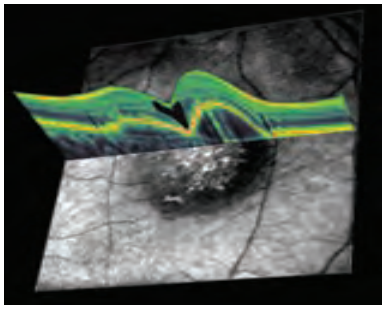
TABLEAU / TABLE 3

Présentations par affiches réalisées par des étudiants de quatrième année en optométrie / Fourth-Year Optometry Student Poster Presentations

Titre de la présentation	Étudiants
Influence de la sphère d'intégration sur la transmittance des lentilles cornéennes souples	S Farhat, M Pan
Comparaison de la vision fonctionnelle et des qualités optiques de différents masques d'appareils respiratoire de pompier	C Gagnon, É Martel
Comparaison de l'efficacité de désinfection du Opti-Free RepleniSH et du Clear Care lors de l'entreposage à long terme d'une lentille Biofinity en Silicone-Hydrogel	A Durivage-Lachance, A Lessard
Les écrans d'ordinateurs et les jeux vidéo : Affectent-ils la myopie chez nos jeunes?	J Cheng, MM Clair
Effets des paramètres d'une demi-visière sur la perception visuelle des hockeyeurs	A Roy-Noël, L-T Tremblay
Étude comparative sur l'absorption spectrale de lentilles photochromiques soumise à différentes conditions	MC Falcon, Gaëlle Meingan
Prévalence du glaucome et de l'accident vasculaire cérébral au sein d'une population clinique de personnes âgées atteintes de démence de type Alzheimer.	AA Pelletier, ME Théorêt
Effet du changement de cible périphérique et de tâche visuelle sur la stratégie de coordination œil-tête	AA Poirier, A Tousignant
La prévalence des maladies oculaires auprès d'une population asymptomatique âgée entre 19 et 64 ans	S Lahoud, R Elalouf
Évaluation des lentilles de masque de ski	V Bardier, É Archambault
Corrélations entre l'acuité visuelle de près, de la vitesse de lecture et de la sensibilité aux contrastes chez des sujets suivis en basse vision	MH Plourde, MP Leduc-Brousseau
Évaluation de la qualité de vie, de l'acuité visuelle et de l'épaisseur maculaire chez des patients atteints de dégénérescence maculaire exsudative en pré et post-traitement par injection de ranibizumab (Lucentis™)	C Pomainville, R Déry-Therrien
Étude sur la correction de la presbytie par le LASIK à l'aide du procédé de la micro-monovision	AC Tremblay, M Tremblay-Picard
La contribution de puissance d'une lentille cornéenne souple torique dans le système Piggyback	MC Rizzuto, A Mekouar, J Pacheco
Les effets de LATISSE (solution ophthalmique bimatoprost 0.03%) sur la surface oculaire	C Courey, P Giancola
Évaluation de la rotation de lentilles perméable au gaz de grand diamètre sur la cornée	L Hu, H Thyriar
Influence de la position de la tête sur les mesures de paramètres d'ajustement de verres ophtalmiques effectuées avec le VisiOffice	Y Provost
Efficacité du ProVideo Complete StereoTM pour l'évaluation de la stéréoscopie au loin	G Morin, M Savoie
Acceptation de lentilles cornéennes dans un échantillon de sujets diabétiques	R Ganni, É Kramer
Comparaison des lentilles intraoculaires phakes Artisan et Artiflex pour corriger la myopie, en termes d'efficacité de correction d'amétropie et de satisfaction des patients	S Sabas, C Serhan
Entrainement des amplitudes fusionnelles verticales	J Bastien, M Cormier

PROVIDE AN IN-DEPTH VIEW OF YOUR PATIENT'S RETINA





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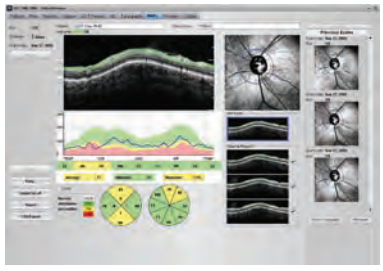
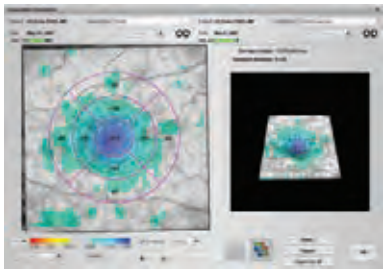


Glaucoma screening exam.



Retinal thickness change following treatment.

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Contact lens prescribing in Canada 2011

BY DEBORAH JONES [1,2] FCOptom, DipCLP, FAAO; CRAIG A WOODS [2,3] PhD, MCOptom, FAAO, FACO; NATHAN EFRON [4] PhD, DSc, FAAO; PHILIP MORGAN [5] PhD, MCOptom, FAAO, FBCLA

Introduction

For the past 12 years, the International Contact Lens Prescribing Survey Consortium has sent surveys to a selection of Canadian optometrists in order to collect information on the contact lenses they fit and basic demographic data of the patients. Canada is one of about 40 countries that contributes to the global study and while annual reviews of the study data are presented, information published for any one market is limited due to the size of the dataset.[1] This manuscript presents a more detailed analysis on the Canadian market for 2011.

LA PRESCRIPTION DES LENTILLES DE CONTACT AU CANADA, 2011

RÉSUMÉ

Depuis 12 ans, une enquête a lieu chaque année au Canada pour recueillir des données sur les lentilles de contact que prescrivent les praticiens. On a demandé aux praticiens de fournir des renseignements sur les 10 premiers patients à qui ils avaient ajusté des lentilles de contact tout de suite après avoir reçu le formulaire d'enquête. Au total, 121 formulaires remplis présentant 1 184 patients ayant reçu des lentilles de contact ont été renvoyés.

Parmi les patients pour lesquels des lentilles de contact ont été prescrites, les résultats indiquent que la majorité d'entre eux ont reçu des lentilles souples. La modalité préférée était le remplacement mensuel, et plus de 67 % des lentilles souples étaient fabriquées de silicone-hydrogel. La majorité des lentilles rigides ont été prescrites pour le jour, puisque leur port pendant la nuit semble surtout convenir à des traitements d'orthokératologie. Les praticiens recommandent des solutions polyvalentes à la plupart de leurs patients ayant des lentilles souples (85,6 %).

Mots clés : *souples, rigide, habitudes de prescription des lentilles de contact*

Methods

In early 2011, surveys were sent to 1,000 randomly selected Canadian optometrists to collect information on contact lens fittings. Each optometrist was asked to provide information on the first 10 lens fittings undertaken following receipt of the survey form. Information collected was: date of fitting, gender and age of patient, whether it was a new or a refit, the lens material, lens design and replacement frequency, how often the lenses were intended to be worn, whether prescribed for daily or extended wear, and information on the lens care system prescribed. The survey format has been consistent for all 12 years of data collection. Each fitting was weighted, based on the number of lenses fit per year by the practitioner (based on the date information on the form). This means that data generated by practitioners who conducted many contact lens fittings were afforded a higher weight than those performing fewer fittings.

ABSTRACT

The annual survey to collect data on the contact lens prescribing preferences of practitioners has continued for 12 years in Canada. Practitioners were surveyed for information on the first 10 patients they fitted with contact lenses immediately after receipt of said survey. A total of 121 completed surveys were returned, detailing contact lens fittings for 1,184 patients.

Of the patients fitted with contact lenses, the results indicated that the majority were prescribed soft lenses. The preferred modality was monthly planned replacement and over 67 per cent of the soft lens fits were made of silicone hydrogel materials. Of the rigid lens fits, the majority were prescribed for daily wear, as the overnight use of rigid lenses appears to be mainly for orthokeratology. Practitioners are recommending multipurpose solutions for the majority of their soft lens patients (85.6%).

Key words: *soft, rigid, contact lens prescribing habits*

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Figure 1 – *Proportion of lens fits by design, for GP lenses*

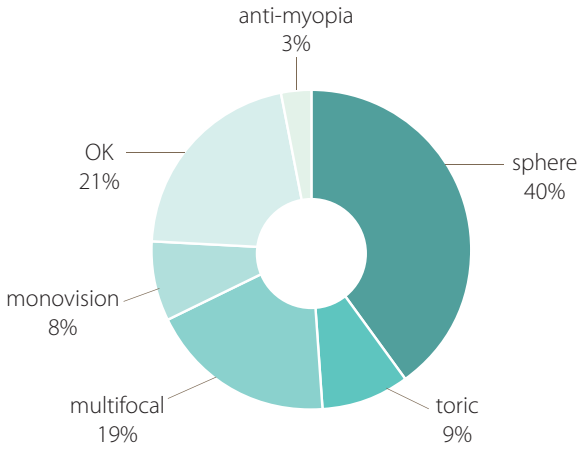
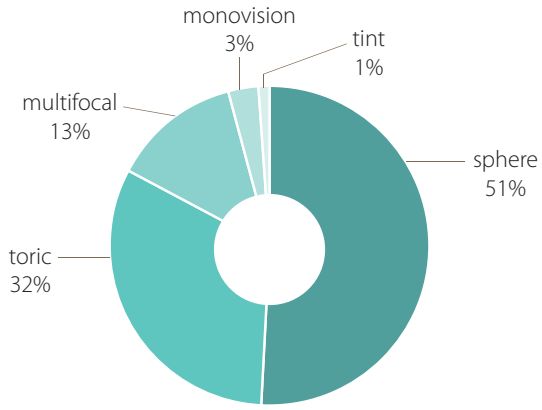


Figure 2 – *Proportion of lens fits by design, for soft lenses*



Results

Data from a total of 1,184 contact lens fittings were collected during the 2011 survey from the 121 surveys returned.

Demographics

The mean age of all persons fit with contact lenses was 34.9yrs (±15.2) with females being slightly older than males (35.5yrs ±15.0 vs 33.5yrs ±15.5). More females were fitted with lenses than males (71% vs 29%). The majority of patients (86%) were wearing their lenses on a full-time basis (7 days-a-week)

The majority of lenses fitted were as refits rather than new fits (68%), and as would be expected, overall the majority of lenses prescribed were soft lenses (92.9%).

GP lenses were mostly used to refit existing patients compared to new lens users (9.1% vs 2.9%). GP lenses are rarely fit as a first lens of choice — only 7.1 per cent of the overall fits were GP fits. Whether new or a refit, the majority of GPs appear to be prescribed as specialty lenses: 21 per cent for orthokeratology (OK) and even 3 per cent for myopia control (*Figure 1*).

Soft lenses

Soft lens designs

The majority of soft lenses prescribed are spherical lenses followed by toric and multifocals (*Figure 2*).

Soft lens replacement frequency

Analysis of the replacement frequency of soft contact lenses reveals that conventional (non-planned replacement) are rarely fit (just 1.1% of the total number of soft lenses). This is a smaller proportion than GP lenses. The majority of lenses being fit are on a monthly replacement modality, this is the same for new and refits (*Figure 3*).

Soft lens materials

Silicone hydrogels continue to be the material of preference for soft contact lenses (67.7% of lenses fit) (*Figure 4*).

Lens modality

Extended wear lenses continue to be prescribed in limited numbers, accounting for only 3.5 per cent of all soft lens fittings. The higher proportion of extended wear lens fittings are refits as opposed to new fits (4.6% vs 1.4%). Silicone hydrogel remains the material of choice for the extended wear modality (95.1%).

Lens care systems

Multipurpose care systems dominate prescribed solutions (85.6% of fits), with hydrogen peroxide accounting for 14.4 per cent of the market.

Discussion

It has been five years since we last reported on Canadian results from this ongoing annual international prescribing survey.[2] A comparison to the results published in 2006 is summarized below (*Table 1*).

The age of the patients fit in 2011 are slightly older (34.9yrs vs 31.3yrs) and there are more females than in 2006 (71% vs 67.3%).

Figure 3 – *Distribution of the replacement cycle for soft contact lenses*

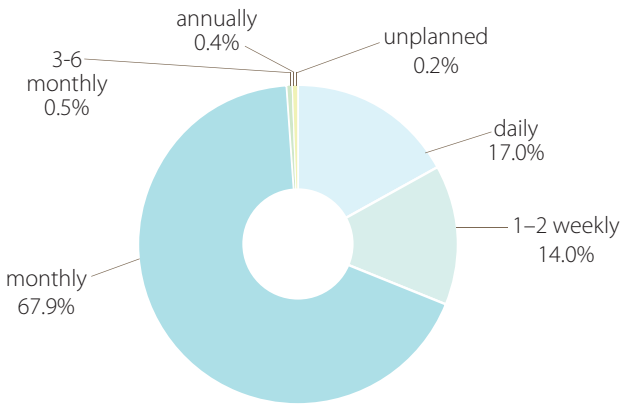


Figure 4 – *Distribution of lens materials for soft lenses*

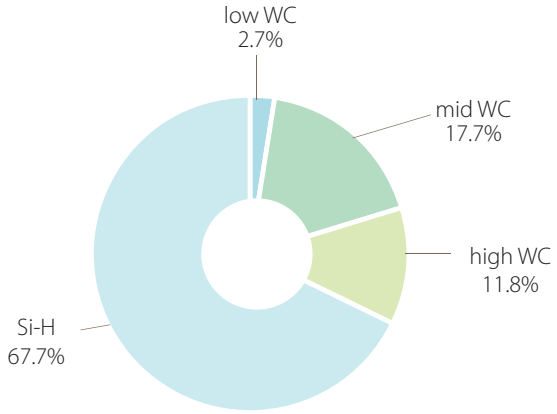


Table 1: Summary of some of the results published by Jones and Woods 2006[2]

Mean age (yrs)	31.3 ± 13.9
Gender (%)	Female 67.3, Male 32.7
Lens type (%)	Soft 92.7, GPs 7.1
Fit (%)	New 35.0, Refit 65.0
Planned replacement frequency (%)	Monthly 71, 2-week 18.4, daily disp. 6.1, non-planned 4.5
Soft lens material (%)	LWC 7.4, MWC 41.8, HWC 11.0, Silicon hydrogel 39.8
Soft lens designs (%)	Spherical 59.5, toric 28.5, multifocal 9.7, tint 2.3
Extended wear (%)	New 4.8, refits 10.0 Hydrogel 3.8, Silicon hydrogel 96.2
GP lens design (%)	Spherical 36.0, toric 11.3, multifocal 10.7, orthokeratology 35.9, other 10.6
Lens care (%)	MPS 93.8, Peroxide 6.2

The GP lens market appears unchanged and remains at 7.1 per cent of the overall market share. Orthokeratology has reduced slightly (21% vs 35.9%) and multifocals increased (19% vs 11.3%) and interestingly some practitioners now report using these lenses for myopia control, a new aspect for lens use since 2006.

For soft lenses, multifocal designs have increased in use from just under 10 per cent to 13.7 per cent of the overall lens market. Monthly replacement continues to be the preferred modality, although it would appear the use of daily disposable lenses has increased (14.0% vs 6.1%). Silicone hydrogel materials now have the largest share of the market at 67.7 per cent, in 2006 mid water content materials and silicone hydrogel material were being fit in equal shares. Only 1.1 per cent of soft lenses are now prescribed with a replacement schedule longer than one month compared to 4.5 per cent in 2006.

The market share for extended wear has decreased from 10 per cent of refits to 4.6 per cent and from 4.8 per cent to 1.4 per cent of new fits. This suggests that extended wear modality may be recommended for very specific circumstances only.

While lens care is dominated by multipurpose care systems, hydrogen peroxide based systems with a 14.4 per cent share is high in comparison to other countries and represents an increase compared to 2006.

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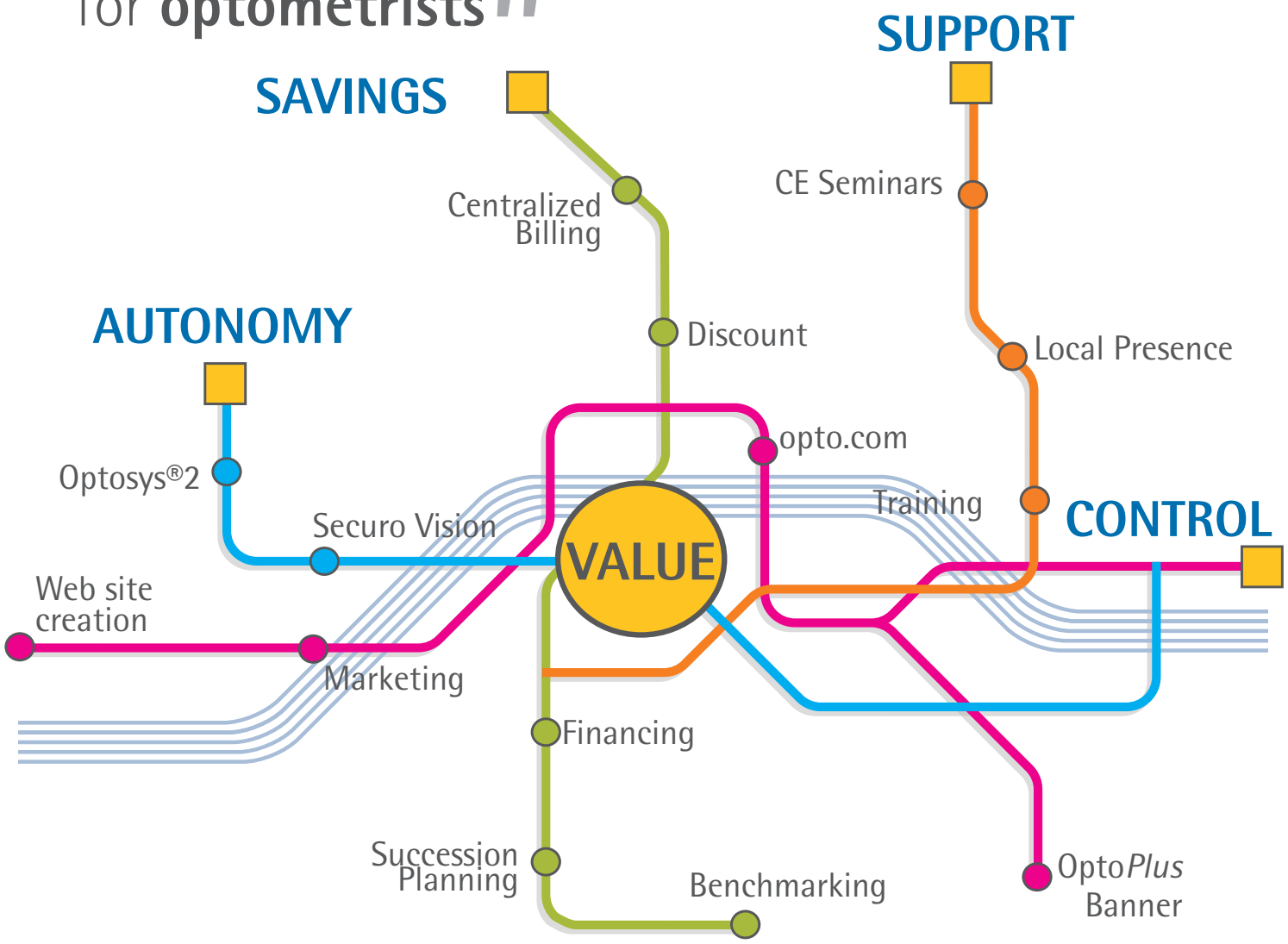

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An unusual case of myopic shift post acquired brain injury

BY FARRAH F. SUNDERJI, OD & CATHERINE HEYMAN, OD, FAAO, FCOVD

Background

In the United States, approximately one person every 16 seconds suffers some form of acquired brain injury (ABI).[1] An ABI results from an event that occurs suddenly and results in neurological dysfunctions.[2] The two major events that cause an ABI include an internal insult such as a cerebrovascular accident (CVA), brain surgery and brain tumours; or a traumatic brain injury (TBI) resulting from an external insult (*Table 1*).[3,4] Males are more at risk for both a CVA and TBI. Using Table 1 for classification purposes, this case report illustrates an unusual presentation of myopic shift post ABI due to the presence of multiple brain tumours, brain surgery for removal of the tumours, shunt placement for hydrocephalus, and a CVA post-surgery.

Ocular and visual problems are frequent consequences of an ABI. Cohen[1] explains that following a

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In memory of the late Michael Rouse,OD

RÉSUMÉ

UN CAS INHABITUEL D'ÉCART MYOPIQUE SURVENANT À LA SUITE D'UNE LÉSION CÉRÉBRALE ACQUISE

Contexte

Des problèmes oculovisuels surviennent fréquemment après une lésion cérébrale acquise (LCA). Une revue de la documentation révèle que bon nombre de patients présentent un déplacement myopique de l'erreur de réfraction après un traumatisme cérébral, qui est une forme de LCA. Trois formes d'évolution sont présentées. Le plus souvent, la myopie se résorbe sous cycloplégie. En deuxième lieu, le déplacement peut être temporaire et, en troisième lieu, cas le moins courant, la myopie augmente avec le temps. Le présent rapport de cas, même s'il n'est pas attribuable à un traumatisme cérébral, est un exemple du cas le moins courant.

Rapport de cas

Le patient, un homme de 63 ans, a subi, 15 mois avant sa première évaluation, l'excision d'une tumeur dans le lobe temporal frontal droit. Il a reçu avant et après l'intervention 4 mg QD qui a fait fluctuer son taux de glucose sanguin entre 5,72 et 22,2 mmol/L; le patient a fait un AVC après l'intervention, ce qui a causé une hémiparésie du côté gauche; un shunt a été posé pour diminuer l'enflure dans la région de l'excision et dans les nerfs optiques. Liste des médicaments : Cartia, lisinopril, Toprol XL, prednisone, Reglan et Temodar. Le patient a fait l'objet d'une chimiothérapie pour traiter les restes de la tumeur. Son dernier examen visuel en 2004 indiquait une erreur de réfraction de -2,50-1,25×080 dans son œil droit et de -3,00-0,75×080 dans son œil gauche avec acuité visuelle de 6/7,5 dans les deux yeux. Il s'est présenté à notre clinique avec une acuité visuelle assistée de 8/100 (6/110) dans les deux yeux et une hémianopsie homonyme gauche après évaluation de la périmétrie par comptage des doigts. Une rétinoscopie sous cycloplégie a révélé -6,00-3,00×090 dans son œil droit et -6,00-2,00×090 dans son œil gauche. Un examen du fond d'œil sous pupille dilatée a indiqué une légère enflure des deux nerfs optiques. Les taux de glucose sanguin ont varié entre 103 et 140. Lors d'une visite de suivi un mois plus tard, sa meilleure acuité visuelle corrigée à une distance s'était améliorée à 6/60 dans les deux yeux grâce à la nouvelle prescription. Sa rétinoscopie sous cycloplégie n'a présenté aucune variation de la myopie ou de l'astigmatisme, toutefois, l'œdème du disque s'est résorbé.

Conclusion

Ce cas illustre une présentation inhabituelle d'un déplacement myopique à la suite d'une lésion cérébrale acquise. L'état du patient n'a cessé de se détériorer, et celui-ci n'y a pas survécu. On ne sait pas si la myopie et l'astigmatisme ont pris de l'ampleur ou s'ils se sont stabilisés. Même si la cause de cet état n'est pas pleinement comprise et qu'elle nécessite d'autres examens, une correction optique appropriée a toutefois permis d'améliorer la qualité de vie du patient.

Mots clés : *tumeurs, traitement de la myopie, lésion cérébrale.*

ABSTRACT

Background

Ocular and visual problems are frequent consequences of an acquired brain injury (ABI). The literature suggests that many patients demonstrate a myopic shift in refractive error after a traumatic brain injury (TBI), a form of an ABI. Three reported courses are suggested. Most commonly the myopia resolves under cycloplegic conditions, secondly the shift is transient, and least commonly the myopia increases over time. This case report, although not due to a TBI, is an example of the least common subgroup.

Case Report

The patient, a 63 year-old male, presented with a history (15 months prior to initial evaluation) of an excised right frontal temporal lobe tumour. The history included dexamethasone 4mg QD pre- and post-surgery which caused blood glucose levels to fluctuate between 5.72-22.2 mmol/l; a stroke occured post-surgery causing hemiparesis on his left side; and shunt surgery to decrease swelling to the area of excision and the optic nerves. Medications included: Cartia, lisinopril, Toprol XL, prednisone, Reglan, and Temodar. The patient was receiving chemotherapy to treat remnants of the tumour. His last eye exam in 2004 indicated a refractive error of -2.50-1.25X080 in his right eye and -3.00-0.75X080 in his left eye with visual acuity of 6/7.5 in both the right and left eye. He presented to our clinic with an aided visual acuity of 8/100 (6/110) in both the right and left eye and a left homonymous hemianopsia on finger counting fields. Cycloplegic retinoscopy revealed -6.00-3.00X090 in his right eye and -6.00-2.00X090 in his left eye. Dilated fundus exam showed mild swelling of both optic nerves. The patient reported blood glucose levels of 103-140. At a one-month follow-up, his best corrected visual acuity at a distance improved to 6/60 in both the right and left eye through the new prescription. His cycloplegic retinoscopy did not show any change in myopia or astigmatism and the disk edema was resolved.

Conclusion

This case illustrates an unusual presentation of myopic shift post ABI. The patient's condition continued to deteriorate eventually taking his life. It remains unclear whether the myopia and astigmatism continued to increase or remained stable. Although, the cause of this change is not fully understood and needs further investigation, providing appropriate optical correction did improve the patient's quality-of-life.

Key words: *tumours, myopia – treatment, brain injury.*

Table 1: The Categories and Components of Acquired Brain Injury

ACQUIRED BRAIN INJURY (ABI)	
EXTERNAL INSULT - TBI	INTERNAL INSULT
1. Closed 2. Penetrating	1. Cerebrovascular accidents (CVA) – i.e., stroke 2. Brain surgery 3. Arteriovenous malformations (AVM) 4. Brain tumours – malignant and benign 5. Vestibular dysfunctions
GLASGOW COMA SCALE	
1. Severe 2. Moderate 3. Mild	

neurological event, there is often an interruption to the neurological system which innervates the extraocular muscles controlling eye movement as well as the system that regulates focusing. Neuro-optometrists have identified a syndrome, the post trauma vision syndrome (PTVS), which includes visual symptoms and problems associated with trauma to the visual system (*Table 2*).[1,3] Due to the similarities in the pathogenesis of TBI and stroke, there is considerable overlap in the ocular and visual symptoms. One such visual problem is a change in refractive error with an increase in myopia. Kowal identified a 19 per cent prevalence rate of pseudomyopia (58% persisted) as one of common visual problems seen among 161 patients with head injury.[6]

London et al. suggest that many patients demonstrate a myopic shift in refractive error after TBI and refer to this myopic shift as "post-traumatic pseudomyopia".[7] Three reported courses have been suggested in non-presbyopic patients. Most commonly, the myopia resolves under cycloplegic conditions, secondly the shift is transient, and least commonly the myopia increases over time. This case report, although not due to a TBI, is an example of the least common subgroup.

Table 2: Visual Sequelae and Symptoms of ABI

1. Visual field losses	Central, congruous, and incongruous homonymous hemianopias and quadrantanopias, altitudinal, neglect
2. Eye movement dysfunctions	Fixation, pursuit, saccade, nystagmus
3. Ocular muscle dysfunctions	Strabismus, anisocoria, lagophthalmos, ptosis
4. Binocular dysfunctions	Exophoria, convergence insufficiency, vertical phorias, fusional instabilities
5. Accommodative dysfunctions	Amplitude, flexibility, sustainability
6. Perceptual dysfunctions	Contrast sensitivity, colour vision, body image, left-right discrimination, spatial relationships, agnosias, "subjective visual disturbances." e.g., wavy and shimmering vision, photosensitivity
7. Visually-involved vestibular dysfunctions	Vertigo, loss of balance, increased sensitivity to visual motion
8. Change of refractive error	Increased myopia
9. Symptoms	Diplopia, blurred near vision, perceived movement of print, asthenopia, headaches, photophobia

It is interesting to note that the progression of myopia has been reported in the younger population but is not the case in those over 40 years-of-age. Although the underlying mechanism is unclear, there is no known method to effectively halt the progression of the myopia over time.[2]

Case Report

History

The patient, a 63 year-old male, presented with a history of a right temporal lobe tumour excised 15 months prior to initial examination. A cerebral vascular accident (CVA or stroke) occurred post-surgically, causing hemiparesis to his left side. The patient is currently wheelchair bound. A right frontal shunt catheter was placed in the right lateral ventricle secondary to hydrocephalus. Ventriculomegaly was also reported on a CT scan. An MRI revealed extensive abnormal changes throughout the right frontal and temporal lobes most likely representing a combination of therapeutic effect and recurrent/residual tumor. Post-excision herniation of the brain through the craniectomy site occurred with the tumor extending into the splenium of the corpus callosum and the contralateral hemisphere.

Additional history included dexamethasone 4mg QD pre and post surgery which caused blood glucose levels to fluctuate between 5.72-22.2 mmol/l. Medications included: Cartia, lisinopril, Toprol XL, prednisone, Reglan, and Temodar. The patient was receiving radiation and chemotherapy treatments to treat remnants of the tumour. His last eye exam in 2004, prior to the tumour, indicated a refractive error of -2.50-1.25×080 in his right eye and -3.00-0.75×080 in his left eye with visual acuity of 6/7.5 in both the right and left eye at distance. Near visual acuity was not measured. Ocular health was unremarkable.

Diagnostic data

The patient presented to our clinic wearing a progressive lens and had a chief complaint of blurred vision in both eyes when viewing at a distance and near. No diplopia was reported. The following is a summary of our examination findings. His visual acuity, measured through his habitual correction of -2.50-1.25×080 in his right eye and -3.00-0.75×080 in his left eye with a near vision addition of +2.50 in both eyes, was 8/100 (6/110) in both the right and left eye. His pupils were 5mm in both eyes and equally reactive and responsive to light however, a relative afferent pupillary defect was present in the right eye. Cover test revealed a constant alternating esotropia of 15 prism diopters at distance and 18 prism diopters at near with a left hypotropia. A head tilt to the left and lack of general head control was noted as well as a bulge on the right temporal side

of his head. Confrontation visual fields revealed a left homonymous hemianopsia. No spatial neglect was seen. Dry retinoscopy manifested less astigmatism in both eyes than his habitual correction: -2.50-0.50×180 in his right eye and -2.50-0.50×180 in his left eye. Cycloplegic retinoscopy, however, revealed a higher amount of both myopia and astigmatism in both eyes: -5.25-2.50×090 in his right eye and -5.50-2.50×090 in his left eye. Anterior segment evaluation was unremarkable with the exception of mild blepharitis, meibomianitis, and mild cortical changes in both eyes. Posterior segment showed mild swelling of the optic nerves in the left eye more than right.

Assessment

The patient presented with an increased bilateral shift in myopia and astigmatism possibly due to the surgical removal of the tumour, subsequent stroke, and/or the medical intervention (i.e., radiation and chemotherapy to treat the tumour remnants). He also had a left homonymous hemianopsia with an associated left hemiparesis causing a loss of mobility, as well as a relative afferent pupillary defect in the right eye secondary to optic nerve head swelling (right eye<left eye) from hydrocephalus.

Management

The patient was prescribed his full cycloplegic refraction -5.25-2.50×090 in his right eye and -5.50-2.50×090 in his left eye for distance viewing. He was prescribed a separate pair of glasses for reading (-2.75-2.50×090 in both his right eye and left eye), rather than using a progressive or bifocal lens due to his poor head control. He was scheduled for shunt placement surgery to resolve the hydrocephalus. Since the patient was continuing with radiation, chemotherapy, as well as the aggressive medical management of the tumour remnants, it would be unclear whether the myopia and astigmatism will continue to increase or remain stable. The patient was scheduled to return to our clinic after wearing his new prescription for one month, after which he would be re-evaluated periodically over the following year. Vision therapy and low vision rehabilitation were discussed and would be addressed at a follow-up visit.

Follow up evaluation

(*One month after initial evaluation*)

During the follow-up examination, he was much more alert during than at his initial examination. Blood sugar had been monitored twice daily over the last month and was reported to be in the range of 5.72-22.2 mmol/l. The patient's best corrected visual acuity at distance improved to 6/60 with each eye individually and 6/38 with both eyes viewing. His near visual acuity through his near-vision prescription was 6/19 with both eyes viewing. His cycloplegic retinoscopy was stable relative to the last visit and did not show any fluctuations in myopia or astigmatism. The disk edema had resolved in both eyes.

Assessment

The patient's wife reported that since he began wearing his distance prescription, he was able to see his family members much more clearly. His lateral balance had improved during physiotherapy and he had been holding his head upright on his own. He was also able to read his favourite magazines. Hence, a change in prescription and prescribing two separate pairs of glasses improved his quality-of-life. Visual acuity and visual function had both been improved such that the patient was now able to read magazines, watch television, and interact with his grandchildren without blurry vision.

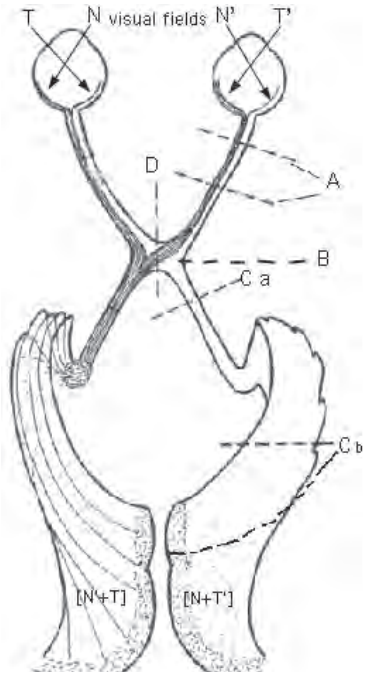
Management

Our goal was to continue to monitor the patient periodically throughout the year. His condition continued to deteriorate causing him to lose speech, thus making communication more difficult. As changes in his condition occurred, there may have been secondary changes in his refractive error but due to his illness and frequent visits to the hospital, follow-up in our clinic was minimal. He was advised to continue using both pair of single vision glasses unless there was a change in prescription based on cycloplegic retinoscopy. His wife was advised to consider large print books if reading became difficult. No vision therapy or low vision rehabilitation was recommended as his condition remained

unstable. The patient passed away in late November shortly after American Thanksgiving.

Conclusion

This case illustrates an unusual case of myopic shift post-ABI. Certain findings need to be considered for the increase in myopia. Firstly, the patient was on dexamethasone 4mg QD pre-and post-surgery causing blood glucose levels to fluctuate between 5.72-22.2 mmol/l. When he was seen for his eye evaluation, he was on prednisone. Effects of long-term use of systemic steroids include: increased blood sugar levels, blurred vision, elevated intraocular pressure with possible development of glaucoma, optic nerve damage, and posterior subcapsular cataract.[8] Extra glucose in the hyperglycemic state causes an accumulation of sorbitol which disturbs the osmotic balance of the lens and plays a key role in cataract formation. Once sorbitol is in the lens, it draws water into the cells leading to swelling, and structural and chemical changes. This process may influence the refractive power of the lens, resulting in transient increases in myopia or cataracts because of the osmotic swelling of cortical fibres.[9]
In this patient's case, his uncontrolled blood glucose level along with his steroid induced diabetes, is a possible cause of the myopic shift. His anterior segment was remarkable for mild cortical changes, however, a posterior subcapsular cataract was not noted in either eye and blood sugar level, returned to



A. Total Blindness, right eye
B. Nasal hemianopsia of right eye
C. Left homonymous hemianopsia
   a. with macular splitting
   b. with either macular splitting or macular sparing
D. Bitemporal (heteronymous) hemianopsia

Figure 1 : *Visual field defects*

baseline once the corticosteroid dosage was reduced.

A second possible cause for the myopic shift would be an increase in axial length. Due to the patient's deteriorating condition, an A-scan was not done to rule out this possibility, however, the MRI did not show any remnant tumours in or around the orbit. In retrospect, it is unlikely that there was a tumour compressing each eye by the same amount resulting in an equal myopic shift in both eyes. Similarly, there was asymmetric optic nerve head swelling (right eye<left eye) ruling it out as a cause for the myopic shift. The swelling could account for the reduction in visual acuity along with the relative afferent papillary defect.

The patient had a left homonymous hemianopsia with an associated left hemi-paresis and no spatial neglect. Homonymous hemianopias appear with lesions in the retrochiasmatic pathways.[10] The more posterior the lesion is located in the optic pathways, the greater the congruity of defect.[11] A homonymous hemianopsia can be seen with either macular sparing where the lesion occurs beyond the lateral geniculate body or macular splitting where the lesion can either be before or after the lateral geniculate body (*Figure 1*).[12] As confrontational, not automated, visual fields were done do evaluate the patient's fields, it remains unclear if the defect was congruous and if the macula was spared or split. His relatively good visual acuity at near, however, could suggest macular sparing. Due to his

left hemiparesis, is it probable the lesion was present along the right optic tract and cerebral peduncle. The MRI showed atrophy to the cerebral peduncle suggestive of wallerian degeneration or axonal degeneration from the insults to the right cerebral hemisphere.

Another possible cause for the myopic shift may be due to post-traumatic pseudomyopia. Pseudomyopia, an intermittent and temporary shift in the refractive error towards myopia, differs from true myopia as it develops over time and is the result of an accommodative spasm (AS) due to prolonged near work. AS is a triad of pseudomyopia, esodeviation, and pupillary constriction. It can either be organic in origin through the stimulation of the parasympathetic nervous system; or functional, through eye strain or fatigue of ocular systems.[13] Voon et al. described a case in which AS was associated with dorsal midbrain syndrome with a blocked ventriculo-peritoneal shunt inserted for aqueductal stenosis. In this unusual case of pseudomyopia, an exodeviation was present without pupil constriction.[14]

Usually AS presents in young adults who have active accommodation or experience a change in their visual requirements such as preparing for an exam, or a change in occupation. Even when associated with organic disease, the patients reported in the literature have been under 57 years-of-age. Knapp et al. reported a patient that developed spasms of near reflex at the age of 86 years. She is to the authors' knowledge the oldest reported in the literature. In our patient's case, the triad of AS was present and most likely due to an organic cause rather than functional due to his reduced accommodative range.

The parasympathetic division of the oculomotor nerve is responsible for pupillary constriction and accommodation.[15] London et al. have postulated a shift in myopia secondary to an irritative lesion that affects the accommodative portion of the parasympathetic third nerve subnucleus, resulting in ciliary body contraction, or possibly disinhibition of brainstem centres.[7] Chan and Trobe,[16] in a retrospective review of six patients with post-traumatic pseudomyopia, suggested that although it is rare, AS may present without other components of the near reflex. The AS may result from severe brainstem injury in young adults. Bohlmann et al. reported a patient with significant pseudomyopia nine years after her initial trauma. The resultant AS was suggested to be due to a possible mesencephalic lesion in the upper brainstem following trauma to the basilar skull. The authors felt it was important to recognize that some patients may experience a prolonged course of AS after significant head trauma and proposed that such cases may not be the result of a functional cause.[17] The patient's MRI showed an abnormal signal extending on the right side down into the brainstem.

One can postulate that in our patient's case, the accommodative abnormalities could be caused by abnormalities of the midbrain or the oculomotor nerve.[18] In cats, accommodation is mediated by a pathway from the lateral suprasylvian cortex bilaterally to the ocular motor nuclei.[5] Stimulation of this area also causes convergence and miosis, but accommodation may be selectively activated.[5] They also mention that although overactive accommodation appears to be uncommon in brain lesions, accommodative paresis is not. Among patients with lesions of the dorsal midbrain, accommodative paresis may alternate with accommodative spasm[6] suggesting a linkage in accommodative excess and deficiency in brainstem damage. These spasms are more common in younger patients and can still be present after six years of topical atropine treatment.[11] It is possible that the patient may have had an accommodative paresis resulting in his myopic shift.

The dysfunction and stress in the central and autonomic nervous systems causes imbalances in refractive and accommodative states of function as well as in ocular alignment. Leslie suggests that there is a pattern of PTVS with a moderate degree of myopia, and a moderate-to-severe degree of accommodative insufficiency. It is not accommodative spasm in the true sense, since there is excessive focus at distance but insufficient focus at near. In Leslie's experience, the cases studied are all long-term, chronic problems. The majority of these chronic cases studied show stable myopia and accommodative function over time. The mechanism behind this postulation is that brain trauma can disrupt a person's ability to

access learned z-axis sensorimotor control of accommodation in visual space. The system loses its ability to know and respond to changes in task distance. The accommodation system essentially localizes at its resting tonus (i.e., dark focus). Vision testing reveals myopia in the distance with an accommodative lag evident at near. Long-term, the system builds in this new learned space, unless the system is retrained at an early, plastic stage.

Treatment of AS often involves the use of plus lenses, accommodative exercises, or short-term cycloplegic usage.[2] However, with post-traumatic pseudomyopia, the underlying mechanism is not clear and concurrent, causative treatment can vary between patients. It remains unclear as to which of the possible mechanisms could have been the cause of the myopic shift in this case.

For our patient, prescribing single vision minus lenses determined by cycloplegic refraction allowed for clearer distance vision. Prescribing single vision reading glasses as opposed to progressive addition lenses improved reading and function at near. According to London et al., if patients remain in pseudomyopic state beyond the first six-to-nine months post-trauma, they are recalcitrant to treatment and the full manifest minus lens correction is the only intervention that will relieve symptoms.[7] Although, the cause of this change is not fully understood and needs further investigation, providing appropriate optical correction improved the patient's quality-of-life and should not be overlooked when managing patients with ABI.

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Importance d'optimiser l'afférence visuelle chez la personne âgée vulnérable vivant en institution

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En 2009, 14% de la population canadienne était âgée de 65 ans ou plus, une proportion qui s'élèvera à environ 24% en 2036.[1] En 2008-2009, plus de 155 000 personnes âgées de plus de 65 ans au Canada vivaient en institutions de soins de longue durée, dont environ 40 000 au Québec.[2] Au cours des dernières années, il y a eu réorganisation des services de santé, avec un mouvement vers la communauté, incluant entre autres une augmentation des services ambulatoires et des soins à domicile.[3] Un effet lié à ces changements est que les personnes âgées admises en soins de longue durée sont de plus en plus dépendantes, ont des maladies plus complexes, et davantage de désordres moteurs et sensoriels.[4] Entre 60 et 80% d'entre elles présentent un déficit d'ordre cognitif,[4] ce qui n'est pas surprenant sachant qu'au-delà de 8% de la population canadienne âgée de 65 ans et plus est atteinte de la maladie d'Alzheimer ou d'autres formes de démence.[5] Cette prévalence dépasse les 30% chez les gens âgés de 85 ans ou plus.[5] Le vieillissement de la population canadienne, avec l'augmentation de prévalence de la démence et la complexité des maladies au grand âge, mettra au défi le système de santé et entraînera une nécessaire adaptation de l'offre des soins et services.

Il est préférable que les personnes âgées puissent demeurer chez elles le plus longtemps possible afin de maintenir l'intégrité de leur réseau social, de préserver leurs repères environnementaux, et de pouvoir ainsi profiter d'une meilleure qualité de vie. Malgré cela, la complexité des maladies, la sévérité des incapacités en découlant, ainsi que la présence de problèmes comportementaux sont autant de facteurs qui conduiront tôt ou tard à leur entrée en institution de soins de longue durée.[6] L'institutionnalisation est souvent davantage liée à la sévérité des incapacités découlant de la maladie qu'à la maladie elle-même. Certaines caractéristiques liées à l'aidant naturel, comme un âge plus avancé, l'épuisement ou la dépression, peuvent aussi conduire à une institutionnalisation plus hâtive de la personne âgée dont on prend soin. [6]

Au Québec, environ 4,7% de la population âgée de 65 ans ou plus réside en Centre d'hébergement et de soins de longue durée (CHSLD). Ce milieu de vie est réservé aux adultes en perte d'autonomie fonctionnelle ou psychosociale qui requièrent trois heures ou plus de soins pour les aider dans leurs activités de la

RÉSUMÉ

L'acuité visuelle est une mesure importante effectuée lors de l'examen visuel afin de vérifier la capacité d'une personne à bien voir et guider l'ajustement de la réfraction oculaire. Il s'agit d'un test de routine qui s'effectue généralement en quelques minutes et sans difficulté particulière. Cette mesure peut par contre être plus difficile à obtenir chez la personne âgée atteinte de troubles de la cognition ou de la communication. Ceci pourrait être le cas par exemple chez la personne âgée atteinte de démence ou celle souffrant d'aphasie suite à un accident vasculaire cérébral. Le but de cet article est de présenter certains aspects du vieillissement de la population, des données liées à l'institutionnalisation de la personne âgée, diverses conditions plus prévalentes liées à l'âge, ainsi que des facteurs particuliers démontrant l'importance d'optimiser la vision chez les personnes âgées. Finalement, cet article fera un survol de diverses échelles disponibles pour mesurer l'acuité visuelle.

Mots clefs : *Vision, personne âgée vulnérable, institutionnalisation, acuité visuelle*

vie quotidienne. Il s'agit donc de personnes « vulnérables » qui ont besoin d'aide et de soins appropriés pour fonctionner au quotidien. La notion de vulnérabilité chez la personne âgée évolue constamment, mais peut entre autres se définir ainsi « des personnes généralement âgées de plus de 75 ans, qui en raison d'une accumulation de multiples affections chroniques, nécessitent souvent un ou plusieurs services de soutien afin de faire face aux activités de la vie quotidienne ».[7] La vulnérabilité peut donc être considérée comme une fragilité croissante liée au vieillissement.[8] Outre les problèmes de démence mentionnés auparavant, d'autres maladies entraînant des incapacités sévères peuvent aussi donner lieu au placement de la personne âgée en CHSLD, comme les troubles de l'humeur, le syndrome parkinsonien, l'accident vasculaire cérébral, les maladies vasculaires ou pulmonaires chroniques. La durée moyenne de séjour en CHSLD peut aller jusqu'à 3 ans[9] et constitue souvent le dernier milieu de vie de la personne âgée jusqu'à son décès. Il est donc important d'optimiser les soins et la qualité de vie dans le respect des volontés du patient, exprimées par ce dernier, ou par la personne répondant pour le patient, puisqu'une grande majorité de ces patients ne sont plus aptes à prendre des décisions éclairées quant à leur santé.

Plusieurs maladies affectant la personne âgée peuvent entraîner des troubles de la communication et rendre les examens et interventions visuelles plus difficiles. C'est le cas par exemple pour les troubles sévères de la cognition dans la démence, l'aphasie liée à l'accident vasculaire cérébral, la lenteur/difficulté d'élocution accompagnant parfois la maladie de Parkinson, l'humeur apathique du patient atteint de dépression majeure, les craintes souvent répétées de la personne atteinte de troubles anxieux, la surdité etc. Malgré les difficultés, l'évaluation visuelle est importante car la déficience visuelle est prévalente au sein de la population âgée. À l'échelle mondiale, 285 millions de personnes présentent une déficience visuelle et près de 65% de l'ensemble de ces personnes sont âgées de 50 ans et plus.[10] Au Canada, les données indiquent que 278 000 canadiens sont atteints d'une déficience visuelle, que 108 000 sont légalement aveugles et qu'un canadien sur trois âgé de plus de 75 ans éprouverait un certain niveau d'incapacité visuelle.[11] Par ailleurs, les études indiquent que la déficience visuelle est particulièrement élevée chez les personnes vivant en institution.[12,13] De plus, la prévalence de la déficience visuelle et de la cécité augmente avec l'âge, quelle que soit l'appartenance ethnique,[14-16] à cause principalement de la dégénérescence maculaire liée à l'âge, du glaucome ou de la cataracte.[14,17] La perte visuelle peut aggraver les problèmes associés à la démence[18] et elle constitue un facteur indépendant contribuant aux troubles du comportement parmi les résidents vivant en institution de soins de longue durée.[19] Une grande partie des déficits visuels chez ces personnes sont dus à des conditions pouvant être traitées comme les erreurs de réfraction non corrigées ou les cataractes.[12,20] Ces conditions doivent être dépistées et traitées lorsque possible. Ces constats sont d'autant plus alarmants sachant que les personnes âgées vivant en institution ne reçoivent pas nécessairement des services oculovisuels adéquats,[21] et que la correction de la réfraction et la chirurgie de la cataracte peuvent améliorer considérablement leur qualité de vie tout en diminuant leurs symptômes de dépression.[22-24]

La pertinence d'effectuer une chirurgie de cataracte chez la personne âgée vivant dans la communauté est bien documentée. Les bénéfices de la chirurgie de la cataracte chez les personnes âgées vivant en institution et n'ayant pas de troubles cognitifs importants ont aussi été démontrés.[24] Malgré cela, la chirurgie de la cataracte n'est pas nécessairement effectuée de routine chez les personnes âgées institutionnalisées. Une étude indique effectivement que la chirurgie de la cataracte est moins bien acceptée chez les gens vivant en soins de longue durée. Cette étude rapporte que les personnes âgées ayant un déficit cognitif sont moins à même de prévenir leur entourage de leurs problèmes visuels, que leurs aidants naturels sont plus réfractaires aux procédures chirurgicales, que les bénéfices de la chirurgie peuvent sembler moins

évidents et qu'il est plus difficile de tester leur vision.[25] L'évaluation subjective de l'acuité visuelle peut représenter un défi au sein d'une population institutionnalisée qui présente des troubles importants de la cognition ou de la communication, et le jugement clinique doit parfois être utilisé pour définir l'acuité visuelle approximative du patient.[26] Malgré cela, une étude clinique rétrospective a démontré qu'il était possible de réaliser un examen visuel complet chez les personnes âgées vivant en institution, indépendamment de l'âge avancé, du statut cognitif et des troubles de la communication.[17] De plus, l'acuité visuelle était préservée à un âge avancé dans l'œil non atteint de pathologie oculaire.[17] Cette étude suggère donc qu'il est possible d'évaluer ces personnes âgées, mais que l'approche clinique doit être adaptée afin de maximiser l'information obtenue dans le cadre de l'examen visuel.

Une autre problématique ciblant particulièrement la personne âgée et où la vision peut jouer un rôle important est la chute.[27] Les chutes constituent effectivement un problème de santé majeur sachant que 30 % des personnes âgées de 65 ans et plus font au moins une chute par année,[28] que cette proportion atteint 50% chez les plus de 85 ans vivant à la maison[29] et qu'elle est encore plus élevée chez les personnes âgées vivant en institution.[30] De plus, 5% des personnes âgées qui chutent doivent être hospitalisées.[31] Au Québec, les chutes donnant lieu à un traumatisme représentent 10 à 15% des admissions en unités de courte durée gériatrique.[32] Les chutes sont d'origine multifactorielle.[33] La déficience visuelle a maintes fois été citée comme étant un facteur de risque de chute et de fracture chez la personne âgée.[34] Plusieurs études, entre autres, ont démontré qu'une diminution d'acuité visuelle représentait un risque indépendant de chute chez la personne âgée,[34-36] même si cela n'est pas universellement accepté.[37,38] L'évaluation de la vision chez la personne âgée ayant chuté est donc importante et devrait être systématique,[33] bien que ce ne soit pas le cas actuellement.[39] Les études indiquent, entre autres, que la diminution d'acuité visuelle, la perte de sensibilité aux contrastes, la diminution de vision stéréoscopique et la perte de champ visuel peuvent augmenter le risque de chute chez la personne âgée.[40-43] La chirurgie de la cataracte diminue les risques de chute et de fracture,[44] de même que les blessures.[45] Un essai clinique randomisé a également démontré que la chirurgie de la cataracte du premier œil chez la femme âgée diminuait les risques de chute et de fracture, de même que l'anxiété et la dépression, tout en améliorant l'acuité visuelle et la sensibilité aux contrastes.[46] La chirurgie de cataracte du deuxième œil au sein de cette même population était associée à une amélioration de la fonction visuelle ainsi qu'à une diminution de la crainte de chuter et du niveau de handicap.[47] Malgré les résultats obtenus dans ces études, il n'y a pas encore suffisamment d'évidence pour indiquer de façon non équivoque que la chirurgie de la cataracte diminue les chutes chez les personnes âgées.[48] Il demeure toutefois important d'évaluer la vision chez la personne âgée ayant chuté ou à risque de chute, et de l'optimiser chaque fois que cela est possible, que ce soit par traitement optique, médical, chirurgical ou par réadaptation visuelle.[49]

L'acuité visuelle correspond à la capacité de résolution spatiale de l'œil et se mesure cliniquement en identifiant l'angle sous-tendu à l'œil par le plus petit optotype reconnaissable. L'outil standard de prise d'acuité visuelle au sein de la population générale demeure l'échelle de Snellen traditionnelle, constituée de lettres ou optotypes à contraste élevé diminuant en grandeur de haut en bas de l'échelle.[50] En présence de personnes âgées ayant des troubles importants de la cognition, altérant la compréhension de consignes et la communication, il n'est pas toujours possible de mesurer l'acuité visuelle avec l'échelle de Snellen. Il en est de même pour d'autres populations cliniques, et au fil des ans, de nouvelles échelles de mesure de l'acuité visuelle ont été élaborées pour répondre à des besoins particuliers. L'échelle logarithmique, dont la progression de la hauteur des lettres d'une ligne à l'autre est géométrique,[51] offre une mesure plus standardisée de l'acuité visuelle et

son utilisation est privilégiée dans l'évaluation des patients en basse vision[52] et dans les études épidémiologiques.[53] L'échelle des symboles de Lea a été conçue pour mesurer l'acuité visuelle chez les enfants de 3 à 5 ans,[54] et structurée de telle sorte que l'enfant puisse répondre soit en pointant ou en nommant des symboles faciles à identifier à cet âge.[55] La méthode du regard préférentiel a été élaborée afin de tester des personnes atteintes de handicap intellectuel.[56] Il s'agit d'une technique comportementale basée sur le principe qu'en présence de deux cibles, l'une formée d'un réseau de lignes noires et blanches, l'autre formée d'une plage grise uniforme, une personne préfèrera regarder le réseau.[57,58] La personne continuera à préférer le réseau, lors de la présentation de cibles successives comportant une plage grise et un réseau où la fréquence spatiale des lignes noires et blanches est augmentée, tant qu'elle sera en mesure de discriminer les lignes.

Aucune échelle d'acuité visuelle à ce jour n'a été développée spécifiquement pour la personne âgée atteinte de déficits sévères de la cognition ou de troubles importants de la communication. La méthode du regard préférentiel (cartes de Teller) aurait par contre été utilisée avec succès cliniquement chez un groupe restreint de personnes âgées en soins de longue durée ayant des problèmes de communication[59] et des déficits cognitifs modérés.[60] Par ailleurs, dans le cadre d'une étude effectuée en soins de longue durée, des chercheurs ont démontré que l'acuité visuelle pouvait être testée chez 84% des résidents à l'aide des cartes de Teller, contre 74% des participants lorsque l'échelle ETDRS ou Lea était utilisée.[61] Il est important de souligner, par contre, que cette étude incluait uniquement des gens ayant un déficit cognitif léger à modéré, les chercheurs ayant exclus d'emblée les résidents ayant un déficit cognitif plus sévère.

Les études présentées dans ce manuscrit démontrent qu'il est important d'évaluer la fonction visuelle[12,21] et la santé oculaire[14,20] chez la personne âgée, d'autant plus que la pathologie oculaire et la perte visuelle présentent une prévalence accrue avec l'âge. De plus, une bonne afférence visuelle est un facteur jouant un rôle important dans la qualité de vie de la personne âgée[22-24] alors que la perte visuelle peut contribuer à l'anxiété,[62] à la dépression,[63] à l'isolement,[62] aux troubles de comportement[19] et aux chutes.[34,35] Ces phénomènes s'aggravent chez la personne âgée vivant en institution,[12,13] car elles sont plus vulnérables du fait de leur état de santé fragile et de leur perte d'autonomie.[6] Les troubles cognitifs qui affectent une large portion de ces personnes peuvent diminuer leur capacité à exprimer leurs besoins et leurs difficultés le cas échéant.[25] L'évaluation de leur santé, incluant les soins oculovisuels, est souvent plus difficile, doit être adaptée pour les besoins spécifiques de cette population et demande un peu plus de temps.[17] Ces personnes peuvent aussi avoir de la difficulté à communiquer et à collaborer lors de l'examen visuel, ce qui peut affecter une mesure aussi simple mais tellement importante que l'acuité visuelle.[64]

Il n'existe pas d'échelle « universelle » permettant de mesurer l'acuité visuelle chez les personnes âgées vulnérables ayant de la difficulté à communiquer ou à collaborer. Dans un cadre clinique, la prise d'acuité visuelle se déroule souvent en présentant les diverses échelles de mesure existantes une à la suite de l'autre, jusqu'à ce que l'une d'entre elles attire suffisamment l'attention du patient pour lui permettre de collaborer. Il n'existe aucune étude à ce jour pour guider le clinicien. Il serait donc important de savoir s'il existe une échelle supérieure aux autres pour mesurer adéquatement l'acuité visuelle chez les personnes âgées vulnérables, ou encore s'il est possible d'optimiser leur ordre de présentation, afin d'accélérer l'examen visuel tout en minimisant le degré de fatigue chez le patient. Une telle étude est actuellement en cours et les résultats feront l'objet d'une publication ultérieure.

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Importance of Optimizing Visual Acuity in Vulnerable Seniors Living in an Institution

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In 2009, 14 per cent of the Canadian population was 65 years-of-age or older, a percentage that will rise to about 24 per cent by 2036.[1] In 2008-2009, more than 155,000 seniors over age 65 in Canada were living in a long-term care institution, with roughly 40,000 of them in Quebec.[2] Over the past few years, there has been a reorganization of health services, with a movement towards the community, including an increase in out-patient services and home care.[3] One impact of these changes is that the seniors admitted to long-term care are increasingly dependent, have more complex illnesses and more motor and sensory disorders.[4] Between 60 per cent and 80 per cent of them have a cognitive deficiency,[4] which is not surprising given that over 8 per cent of the Canadian population aged 65 and older have Alzheimer's disease or other forms of dementia.[5] This prevalence exceeds 30 per cent in people age 85 or older.[5] The ageing of Canada's population, with the increase in the prevalence of dementia and the complexity of diseases in later life, will challenge the healthcare system and result in the need for adjusting the supply of care and services.

It is preferable for seniors to be able to stay at home as long as possible in order to keep their social network intact, preserve their environmental landmarks and thereby enjoy a better quality-of-life. In spite of that, the complexity of the diseases, the severity of the resulting disabilities, as well as the presence of behavioural problems are factors that will eventually result in them being admitted to a long-term care institution.[6] Institutionalization is often connected more with the seriousness of the disabilities resulting from disease than with the disease itself. Certain characteristics connected with the informal caregiver, such as more advanced age, exhaustion or depression, may also lead to earlier institutionalization of the senior receiving care. [6]

In Quebec, roughly 4.7 per cent of the population aged 65 or older is living in a residential and long-term care centre ((CHSLD) Centre d'hébergement et de soins de longue durée). This living environment is reserved for adults losing their functional or psycho-social independence and who require three or more hours of care to assist them in their daily activities. Therefore, they are "vulnerable" individuals who need help and appropriate care to operate on a daily basis. The concept of vulnerability in seniors is constantly changing, but can be defined as "individuals usually older than 75 years of age who, due to a build-up of multiple, chronic diseases, often require one or more support services to handle daily activities".[7] Thus, vulnerability can be considered an increasing age-related fragility.[8] Beyond the previously stated dementia issues, other diseases resulting in severe

SUMMARY

Visual acuity is an important measurement taken during an eye exam for checking an individual's ability to see properly and to guide the adjusting of ocular refraction. It is a routine test usually done in a few minutes and with no particularly difficulty. However, this measurement can be more difficult to do in seniors with cognition or communication disabilities. For example, this may be true for a senior with dementia or suffering from aphasia following a stroke. The purpose of this article is to present certain aspects of population aging, data connected with institutionalization of seniors, various conditions that are more prevalent with age, as well as specific factors demonstrating the importance of optimizing vision in seniors. Lastly, this article will provide an overview of various scales available for measuring visual acuity.

Key words: *vision, vulnerable senior, institutionalization, visual acuity*

disabilities can also give rise to the senior being placed in a CHSLD, such as mood disorders, Parkinson's disease, stroke, chronic vascular or lung diseases. The average length of a stay in a CHSLD can be up to three years[9] and often be the senior's last living environment until his/her death. Therefore, it is important to optimize care and quality-of-life by respecting the patient's wishes, expressed by him/her or by the person answering for the patient, since the vast majority of these patients are no longer able to make informed decisions about their health.

A number of diseases affecting seniors can result in communication difficulties and make eye exams and interventions more difficult. This is true, for example, with the severe cognition problems in dementia, stroke-related aphasia, speech slowness/difficulty that sometimes accompanies Parkinson's disease, the apathetic mood of a patient with major depression, the oft-repeated fears of a person with anxiety disorders, deafness, etc. Despite the difficulties, a visual assessment is important because visual impairment is prevalent within the senior population. Globally, 285-million people have a visual impairment and nearly 65 per cent of all those people are age 50 or older.[10] In Canada, the data shows that 278,000 Canadians have a visual impairment, that 108,000 are legally blind and that one-in-three Canadians over age 75 experience a degree of visual impairment.[11] Moreover, the studies show that visual impairment is especially high among people living in an institution.[12,13] Also, the prevalence of visual impairment and blindness increases with age, regardless of ethnicity,[14-16] primarily because of age-related macular degeneration, glaucoma or cataracts.[14,17] Loss-of-vision can worsen the problems associated with dementia[18] and is an independent factor contributing to behavioural impairments among residents of a long-term care institution.[19] A large part of the visual impairments among these people are due to conditions that can be treated, such as uncorrected refractive errors or cataracts.[12,20] These conditions must be screened for and treated when possible. These findings are even more alarming given that seniors living in an institution do not necessarily receive proper oculovisual services,[21] and that refraction correction and cataract surgery can considerably improve their quality of life and reduce their depression symptoms.[22-24]

The relevance of performing cataract surgery in seniors living in the community is well documented. The benefits of cataract surgery in seniors living in an institution and without significant cognitive disabilities have also been demonstrated.[24] In spite of that, cataract surgery is not necessarily routinely done on institutionalized seniors. In fact, one study shows that cataract surgery is less well accepted among people living in long-term care. That study reports that seniors with a cognitive deficiency are less able to inform those around them of their vision problems, that their informal caregivers are more skeptical about surgical procedures, that the benefits of surgery can seem less obvious and that it is more difficult to test their vision.[25] Subjective assessment of visual acuity can present a challenge within an institutionalized population that has major cognition or communication disorders, and clinical judgment must sometimes be used to determine the patient's approximate visual acuity.[26] Even so, a retrospective clinical study showed that it was possible to conduct a full eye examination on seniors living in an institution, regardless of advanced age, cognitive status and communication problems.[17] Also, visual acuity was preserved to an advanced age in eyes not affected by ocular pathology.[17] Therefore, this study suggests that it is possible to assess these seniors, but that the clinical approach must be adjusted in order to maximize the information obtained during the eye exam.

Another issue specifically targeting seniors and where vision can play a major role is falling.[27] In fact, falls are a major health problem given that 30 per cent of seniors aged 65 and older have at least one fall per year,[28] that this percentage reaches 50 per cent in those over 85 living at home[29] and that it is even higher in seniors living in an institution.[30] Also, five per cent of the seniors who fall must be hospitalized.[31] In Quebec, falls that result in an injury represent 10 per cent to 15 per cent of admissions to short-term geriatric units.[32] Falls are multi-factorial in origin.[33] Visual impairment has been cited many times as a risk factor in falling and fractures among seniors.[34] A number of studies, among other

things, have shown that decreased visual acuity presented an independent risk of falling with seniors,[34-36] even though it is not universally accepted.[37,38] Vision assessment in seniors who have had a fall is therefore important and should be systematic,[33] even though this is not currently the case.[39] The studies indicate, among other things, that reduced visual acuity, loss of contrast sensitivity, decreased stereoscopic vision and the loss of visual field can increase seniors' risk of falling.[40-43] Cataract surgery reduces the risks of falls and fractures,[44] as well as injuries.[45] A randomized clinical trial also showed that cataract surgery on the first eye in older women reduced the risks of falls and fractures, as well as anxiety and depression, while improving visual acuity and contract sensitivity.[46] Cataract surgery on the second eye in that same population was associated with an improvement in visual function as well as a reduced fear of falling and the handicap level.[47] Despite the results in these studies, there is still not enough evidence to show unequivocally that cataract surgery reduces falls among seniors.[48] It is still important, though, to assess the vision of seniors who have fallen or are at risk of falling and to optimize it each time it is possible, either through optical, medical or surgical treatment or through visual rehabilitation.[49]

Visual acuity is the eye's spatial resolution capacity and is clinically measured by identifying the subtended angle in the eye through the smallest recognizable optotype. The standard tool for measuring visual acuity in the general population is still the traditional Snellen chart, consisting of high-contrast letters or optotypes decreasing in size from top to bottom of the chart.[50] With seniors who have considerable cognition problems that alter the understanding of statements and communication, it is not always possible to measure visual acuity with the Snellen chart. Likewise for other clinical populations and, over the years, new scales for measuring visual acuity have been developed to address specific needs. The logarithmic scale, with a geometric progression in letter height from one line to another,[51] provides a more standardized measure of visual acuity, and its use is favoured in assessing low-vision patients[52] and in epidemiological studies.[53] The Lea symbols chart was designed to measure visual acuity in children aged three to five,[54] and structured in a way that the child can answer either by pointing or naming symbols that are easy to identify at that age.[55] The preferential-looking method was developed to test individuals with an intellectual disability.[56] It is a behavioural technique based on the principal that, in the presence of two targets, the one formed from a network of black and white lines and the other formed from a solid grey bar, a person will prefer to look at the network.[57,58] The individual will continue to prefer the network, during the presentation of successive targets involving a grey bar and a network where the spatial frequency of the black and white lines is increased, provided that he/she is able to make out the lines.

To date, no visual acuity scale has been specifically developed for seniors with severe cognition impairments or major communication problems. The preferential-looking method (Teller cards), however, appear to have been used with clinical success in a limited groups of seniors in long-term care who have communication problems[59] and moderate cognitive deficiencies.[60] Moreover, as part of a study done in long-term care, researchers demonstrated that visual acuity could be tested in 84 per cent of the residents using Teller cards, versus 74 per cent of participants when the ETDRS (Early Treatment of Diabetic Retinopathy Study) or Lea scale was used.[61] It is important to stress, however, that this study included only people with a slight to moderate cognitive deficiency, since the researchers had immediately excluded residents with a more severe cognitive deficiency.

The studies presented in this paper show that it is important to assess visual function[12,21] and eye health[20] in seniors, especially since eye disease and vision loss show increased prevalence with age. Also, good visual acuity is a factor that plays a critical role in seniors' quality of life[22-24] whereas vision loss can contribute to anxiety,[62] depression,[63] isolation,[62] behavioural disorders[19] and falls.[34,35] These issues are worse among seniors living in an institution,[12,13] because they are more vulnerable due to their tenuous health status and their loss of independence.[6] The cognitive disorders that affect a large percentage of these individuals can reduce their ability to express their needs and their difficulties, where applicable.[25]

Assessing their health, including eye care, is often more difficult, must be adjusted for this population's specific needs, and requires a little more time.[17] These people may also have difficulty communicating and co-operating during an eye exam, which can affect such a simple, yet so important, measurement as visual acuity.[64]

There is no "universal" scale for measuring visual acuity in vulnerable seniors who have difficulty communicating or co-operating. In a clinical context, determining visual acuity often proceeds by presenting the various existing measurement scales one after the other, until one of them sufficiently attracts the patient's attention to enable him/her to co-operate. To date, there is no study to guide the clinician. Therefore, it would be meaningful to know whether there is a better scale than others for adequately measuring visual acuity in vulnerable seniors, or even whether it is possible to optimize the order they are presented in, to speed up the eye exam while minimizing the patient's fatigue level. A study of this sort is currently under way, and the findings will be covered in a later publication.

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