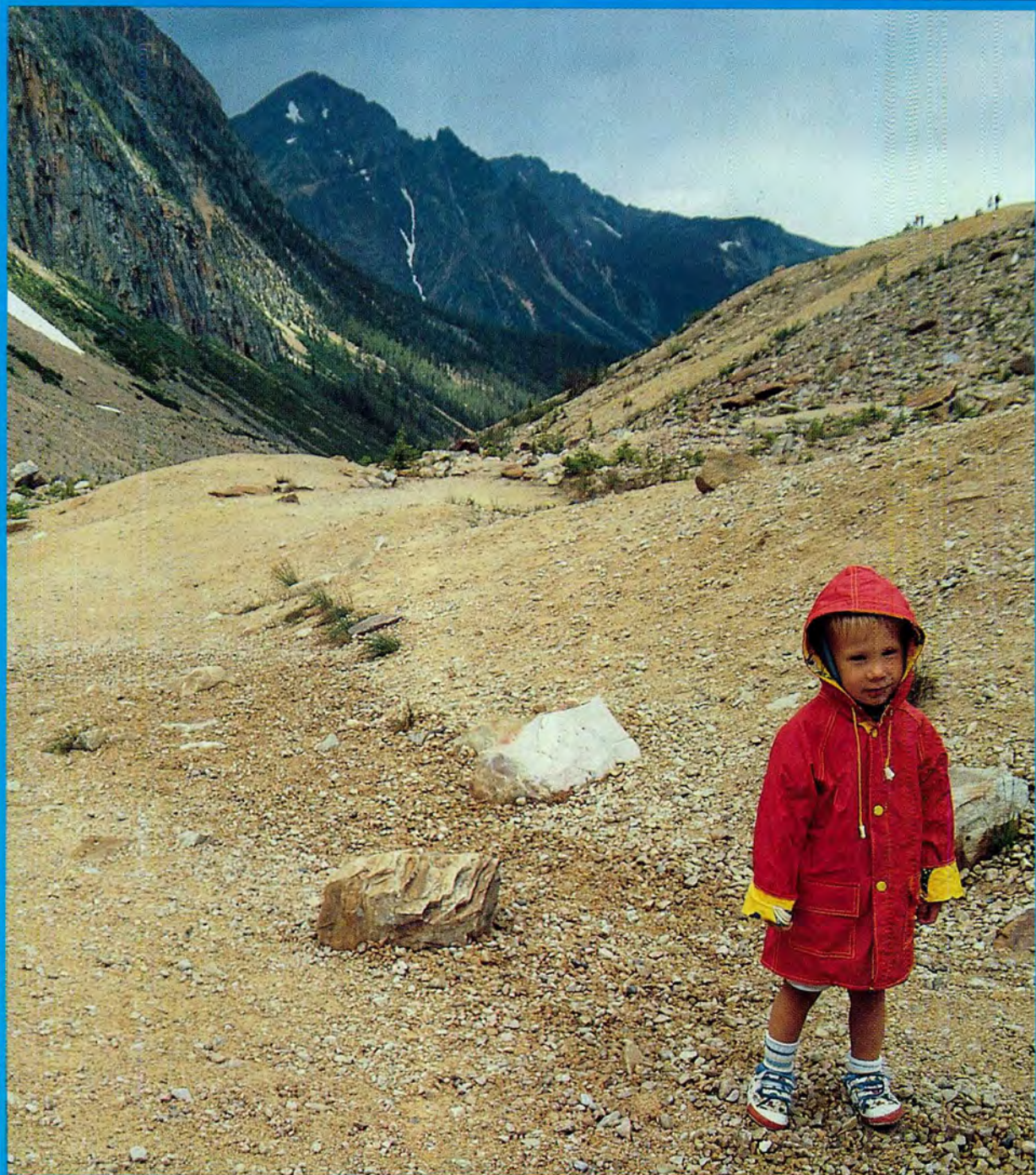


CJO RCO

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Ci-inclus : Prévisions financières – une nouvelle rubrique

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Boundary disputes and ulterior motives?

Disagreements over boundaries of practice occur periodically among health care professions and within specialties of particular professions. Problems relating to boundaries of practice probably will continue to exist because there is a marked degree of overlap in training, qualifications and functions among health professions. The problem is further aggravated by the increasing number of specialties within health care professional groups and by lack of sufficient contact and coordination between the various health professions. It is easy to see that competition among health care providers in an environment of limited financial resources, together with the desire of health care practitioners for increased training, creates the potential for continuing jurisdictional disputes among and within professions.

Primary eye care comprises approximately 90% of all eye care. The treatment of eye pathology and surgery comprises the other 10%. For years, Optometry has pointed out the common sense of training generalists (optometrists) to provide primary care, and specialists (ophthalmological surgeons) to provide secondary and tertiary care. This is responsible and cost effective! This also allows for efficiency due to the demographic distribution of optometrists compared to ophthalmologists, who by and large are located in big cities near hospitals. In an efficient health care delivery system there should be coordination of all care providers. This cannot possibly be achieved by placing barriers between professions since there inevitably will be an overlap in boundaries.

Medicine argues that optometrists have an ulterior motive to become physicians through the back door. A charge of this nature confirms that they have no understanding of our present role, education or training. Why should medicine be allowed to make any profession appear to be *second-class health care providers*: "one who, although is trained and capable, is not allowed by obsolete trends to use their full knowledge." I doubt there are dentists, osteopaths or podiatrists who consider themselves to be "second-class medical physicians". I am equally sure that the intelligent physician would not consider them as such, either. However, all of these professions have overlapping boundaries with medicine.

I doubt that analysis of the situation would lead anyone to consider any group to be a second-class branch of another simply because some of the functions they perform overlap. It is certainly not my desire to be a second-class anything; and I refuse to be treated like a

second-class eye care practitioner because of political medicine's ongoing need to try to control all of health care. I will continue to offer my patients first-class optometric care—primary eye care with some overlapping of areas of expertise with medicine but also unique areas of expertise exclusive of medicine. I am an optometrist and very proud of what that represents.

No profession can survive without independent judgement! Optometry certainly believes that it is the responsibility of the "organized profession" to direct and control practice within the profession. Simply, the onus is on the profession itself to continually monitor the activities of its practitioners, in the public's best interest. This is a responsibility that is bestowed upon each and every health profession! It should *not* be abrogated by a group such as political medicine which does NOT make any attempt to understand, cooperate or coordinate with other health professions.

Peter Spear, OD
Toronto, ON

Reciprocity—a right!

I received a letter from an optometrist the other day that was signed "Fraternally yours". This set me to thinking: we truly are a community of men and women who share common goals and whose working lives are devoted to giving people clear, comfortable vision.

But I believe we also have a responsibility to each other, which brings me to the *raison d'être* of this article.

If optometrists seek to relocate, we should welcome them into our community and help them in any time of need. Provided that an optometrist has graduated from a recognized school of optometry in Canada, he or she should be allowed to practice wherever he or she wants in Canada.

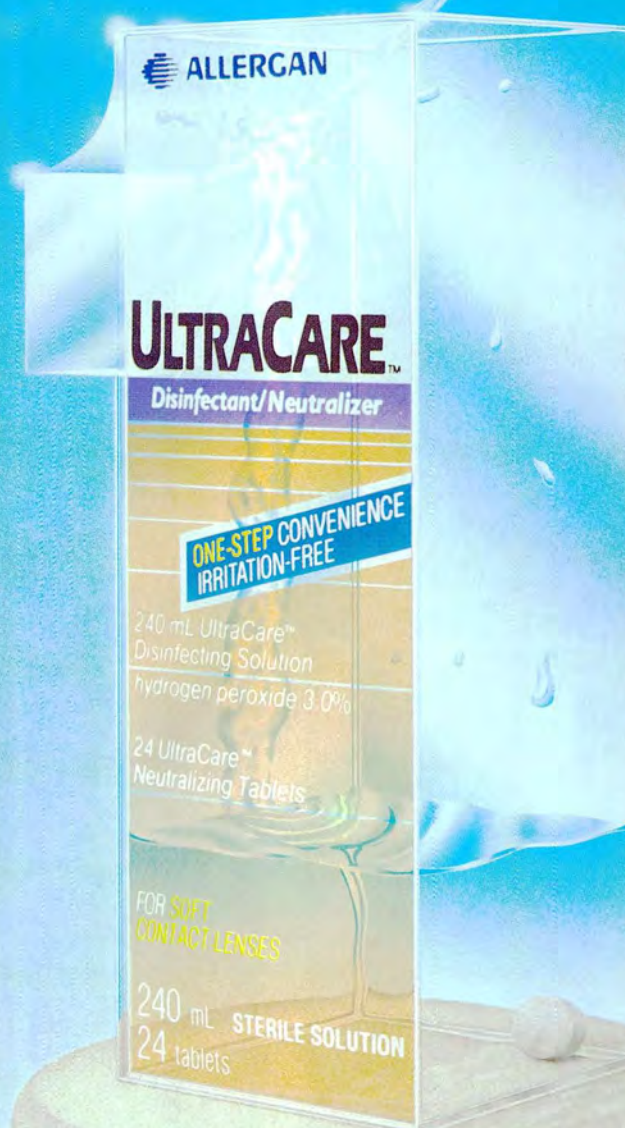
Unfortunately, this is not possible today unless one completes qualifying provincial examinations. This sounds reasonable until one realizes that the exams generally are heavily weighted toward academic subjects. Optometrists in practice for, let us say, 10 years would find this an almost impossible task. They would have to interrupt practice for at least six months in order to study for those exams. Who would pay the bills?

This barrier to optometric mobility is unfair and its absurdity is nicely illustrated by my own case. I practise in Quebec but also see many patients from Ontario.

The Ontario government has seen fit to enrol me in its health insurance plan and has issued me with an OHIP number for billing purposes. Payment is not a problem.

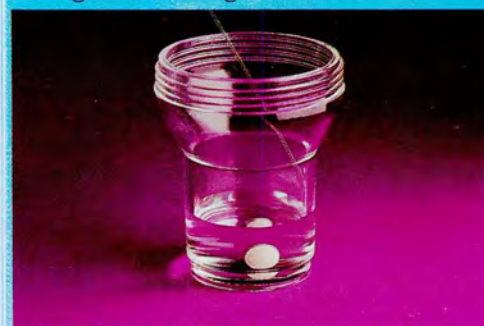
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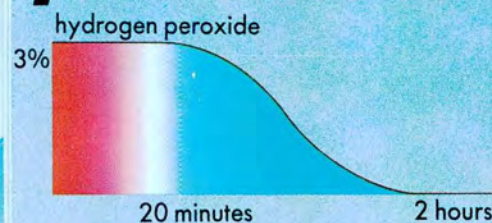


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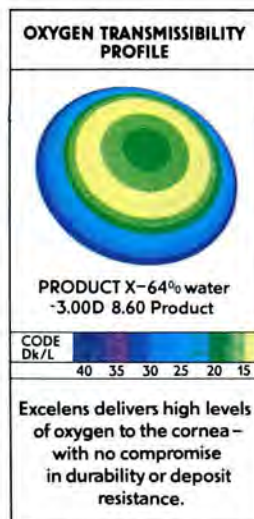
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But, if I decide to move just 40 miles "up the road" to, say, Lancaster, Ontario, I no longer am allowed to examine these same patients since I have become an unlicensed practitioner and, I suppose, am therefore considered incompetent.

This arbitrary situation makes no sense to me and I wonder if it can legally be enforced, as one cannot be prevented by any organization from earning a living. It is only a matter of time before someone challenges such a law.

I fully understand the need for regulating a practitioner's mode of practice, but I personally am opposed to each province's having discriminatory rules.

I suggest that a national board of examiners is urgently needed.

The board should consist of a mixture of academics and general optometric practitioners. Applicants for these exams should be divided into two groups: recent graduates and optometrists already in practice. Prospective graduates should be required to write their national exams before graduating. These exams could be heavily weighted academically.

Practising optometrists, however, should be given a more practical type of examination. Years of practice, attendance at post-graduate courses and other contributions to the profession should all be taken into account.

The time has come to formalize the organization and the operation of a national board. The time has come for optometric mobility in Canada to become a reality.

Lorne G Hart, OD, FAAO
Beaconsfield, PQ



Medicare in Canada: challenging universality and getting away with it

In January of this year, I sent out a special "Update" issue of the CAO President's *Communiqué* that looked at the de-insuring of Optometry in Canada.

Citing—in chronological order—either the recent reduction in, or the complete *absence* of, optometric coverage in Prince Edward Island, Saskatchewan, Alberta, Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario and, most recently, Quebec, I said, **"Too much is at stake. Optometrists in Canada must organize as a collective national unit in order to secure the preservation of those past gains—gains achieved only with the expenditures of a massive political effort, and a great deal of money."**

To demand that we fight de-insurance is a natural reaction

I outlined elements of a disturbing pattern developing in provincial governments' approaches to health care, disturbing because the pattern seems to point to a concerted effort to save money at the expense of services. These services in some cases include (or should I say *exclude*) Optometry.

The most recent of these efforts arises in Quebec, where a new Green Paper has been introduced that proposes removing optometric care completely from the list of services insured under the provincial government's health care program.

When confronted by such a threat, particularly when one is a provider of a service facing elimination, one's first response is understandably visceral: How dare they!?

... and what do we do when they go ahead and do it anyway?

But when the government's response is a Trudeau-esque "Just watch me", one is forced to overcome the anger of the moment and to begin examining, and examining *seriously*, Optometry's role in a province or country where Canadians' equal access to full-scope health care is no longer the status quo.

The past few years have proven to be something of a revelation for those of us who work in health care. We really believed that a benefit, once given, could not be withdrawn without a deafening outcry from the public. But the governments' unanimous argument has been

Assurance-maladie au Canada : remettre en question l'universalité et s'en tirer à bon compte

En janvier de cette année, j'ai diffusé un numéro spécial du *Communiqué* examinant la désassurance des services optométriques au Canada.

En citant — par ordre chronologique — les récentes réductions de la couverture des services optométriques ou leur *absence* complète à Île-du-Prince-Édouard, en Saskatchewan, en Alberta, à Terre-Neuve et au Labrador, en Nouvelle-Écosse, au Nouveau-Brunswick, en Ontario et, dernièrement, au Québec, j'ai dit, **«L'enjeu est trop considérable. Les optométristes du Canada doivent s'organiser en unité collective et nationale afin d'assurer la préservation des acquis — des acquis obtenus seulement au prix d'un effort politique massif et de sommes considérables»** ...par les générations précédentes d'optométristes.

Exiger que nous combattons la désassurance est une réaction naturelle

J'ai souligné les éléments d'un modèle inquiétant qui apparaît au sein des gouvernements provinciaux envers les soins de santé, inquiétant parce que ce modèle semble témoigner d'un effort concerté pour économiser *au détriment* des services. Ces services comprennent (ou devrais-je dire *excluent*) l'optométrie.

Le plus récent de ces efforts émane du Québec où un nouveau livre vert a été présenté et où l'on propose d'exclure complètement les soins optométriques de la liste des services assurés en vertu du programme d'assurance-maladie du gouvernement provincial.

En présence d'une telle menace, en particulier lorsqu'on est fournisseur de services en passe d'être exclus du système, on comprend que sa première réaction soit viscérale — comment osent-ils!?

...et que ferons-nous s'ils vont de l'avant de toute façon?

Mais lorsque la réponse du gouvernement est une d'inflexibilité, l'on est forcé de maîtriser sa colère immédiate et de commencer à examiner, et examiner *serieusement*, le rôle de l'optométrie dans la province ou le pays où l'accès égal de tous les Canadiens à une gamme *complète* de soins de santé est révolue.

simple, direct and effective: **we will cut these services out of our insurance program and save you—the taxpayer—these many millions of dollars.** ("Out of our insurance program" is important. No government is threatening to eliminate optometric services as such, i.e., to "de-legislate" the profession. They're saying, rather, that if these services are a patient's preferred choice, then we're sorry, but the cost of those services will not be borne by public funding.)

"Money" and "fairness" are arguments that cannot easily be fought

How does one argue against these? Certainly the United Kingdom's National Health Service, with its notorious overcrowding and almost eternal waiting periods, provides a sparkling example of the perils of reducing the number of insured service providers. But how do you explain that to a public who knows nothing of "National Health" and, furthermore, perceives it to be a problem that, being "over there", has no relevance in Canada?

Provincial governments also argue that **publicly funded universal health care is an expensive and unreasonable expectation in a society where there are a good many wealthy people.** How does one argue against that? In the eyes of the public, why do we need a "Cadillac" system when a basic "Chevy" will still serve the purpose? Or to put it another way, why should those who still want the Cadillac not be expected to pay a premium for the privilege?

That is one root of Optometry's unfortunate position. In a sense, we're being painted as victims of our own success. We are being made to appear as components in the large, overpriced model of health care in Canada, and the public is accepting that image!

Never mind that an optometric vision examination sees a *smaller* billing to the health care insurance program in almost every province in Canada than does the same service when provided by a medical practitioner. Taken as a block, "optometric services" are more and more being successfully sold to the public as "redundancies". How does one argue against that? It is even more frustrating when one points out that these same, lower fees for service are imposed by the very governments who now claim to be trimming away the "fat" of non-medical publicly funded health services.

What did we really "win" eight years ago?

Unfortunately, I believe now that some of our Canada Health Act arguments—and what we settled for at that time (1984)—may be coming back now to haunt us. Some of our members may recall that we considered it a victory when the federal government agreed to fund those services identified in provincial jurisdictions as "medically necessary". At that time, optometric services were enshrined, **but at the choice of the provincial,**

Ces dernières années ont constituées une véritable révélation pour ceux d'entre nous qui oeuvrons dans les soins de santé. Nous avons réellement cru qu'un avantage, une fois consenti, ne pourrait être retiré sans provoquer un tollé de protestations du public. Mais l'argument de tous les gouvernements est simple, direct et efficace : **nous allons éliminer ces services de notre programme d'assurance et ainsi faire économiser — à vous les contribuables — de nombreux millions de dollars.** (*Aucun* gouvernement ne menace d'éliminer les services optométriques proprement dits, c.-à-d. de «déréglementer» la profession. Ils disent plutôt que si ces services font l'objet du choix d'un patient, alors désolé, mais leur coût ne sera pas à la charge du financement public, mais de chaque consommateur.)

«L'argent» et l'«équité» sont des arguments difficiles à combattre

Comment s'opposer à cela? Le National Health Service du Royaume-Uni, avec son encombrement notoire et ses attentes quasi éternelles depuis la désassurance de services en '87, constitue un exemple éclatant des dangers de réduire le nombre de fournisseurs de services assurés. Mais comment expliquer ce problème à un public qui ne sait rien du «National Health» et, de plus, qui perçoit ce problème comme «étranger» et donc sans aucun rapport avec le Canada?

Les gouvernements provinciaux prétendent aussi que **les soins de santé à financement public universel sont une attente coûteuse et irréaliste dans une société où les riches sont très nombreux.** Que peut-on répliquer à cela? Aux yeux du public, pourquoi avons-nous besoin d'un système «Cadillac», disent-ils, lorsqu'une «Chevy» bas de gamme ferait tout aussi bien l'affaire? Autrement dit, selon eux, ceux qui veulent encore une Cadillac ne devraient-ils pas s'attendre à payer un supplément pour ce privilège?

Peu importe qu'un examen de la vue par un optométriste soit facturé *moins cher* aux programmes d'assurance-maladie de presque toute les provinces du Canada qu'un service semblable fourni par un médecin. En bloc, les «services optométriques» sont de plus en plus faciles à vendre au public comme des «redondances». Que peut-on rétorquer à cela? C'est encore plus frustrant lorsqu'on souligne que ces mêmes frais de services à la baisse sont imposés par les mêmes gouvernements qui prétendent maintenant «dégraissier» les services de santé non médicaux à financement public.

Qu'avons-nous réellement «gagné» il y a huit ans?

Malheureusement, je crois maintenant que certains de nos arguments en vertu de la Loi canadienne sur la santé — et ce que nous avons accepté à cette époque (1984)

not the federal government in virtually all provincial health care plans. However, in 1992, those same provincial governments are still up against a federal health law that requires maintaining “medical” services in order to receive federal transfer payments for health care.

So, faced with the requirement of making cuts, provincial governments argue that the *only* option left to them is make the *only* cuts they can—cuts to *non-medical* services. Thus, non-medical optometric vision and eye care moves down the scale of priorities below such medical “priorities” as cosmetic face lifts, laser tattoo removal and artificial breast enhancement (so long as the services are performed by physicians).

So what lies ahead for Optometry?

I don’t have the last and best answer to this conundrum. In an ideal world, a long-term solution would see “optometric services” eventually included by name in federal legislation governing the services to be paid under federal transfer payments to the provinces. But even the ideal will be achievable only in the long term, if at all. For the short term, optometrists have to convince provincial governments that our services are not luxuries; they are vital! We are speaking here of vision care, after all.

To take the argument full circle, if a provincial government agrees with us, their only option then becomes one of finding the revenue to sustain the program. That puts us—for the sake of our continued funding—potentially arguing in support of such unpopular measures as increasing taxes. It also puts us into an arena in which I’m not sure we want to be—advocating a political resolution to a health care issue.

So far, the success of those governments who have managed to curtail or eliminate optometric services from their health care plans indicates that *any* optometric answers or arguments put forward so far have not worked. Selling cost-cutting by governments, particularly in recessionary times, is a juggernaut that brushes aside arguments based on quality of care, or universality. Adding to our difficulty is the fact that our arguments are complicated, and the governments’ argument is simple. So which plays better in media oriented toward 30- or 60-second “sound bites”?

Is de-insurance a dead-end street, or a yellow brick road?

For some time now, I have been advocating a national Third-Party Program as one possible option to consider. By linking Optometry nationwide with patients through group contracts with large, multi-location employers, we assure ourselves of a continued patient stream. And if the current agreements with government through provincial health insurance programs are severed, it may be

— peuvent maintenant revenir nous hanter. Certains de nos membres se rappelleront peut-être que nous avons crié victoire lorsque le gouvernement fédéral a alors accepté de financer les services jugés «médicalement nécessaires» par les provinces. Les services optométriques étaient alors enchâssés dans la Loi Fédérale, mais appliquée à la discrétion des gouvernements provinciaux et totalement financés par eux. En 1992, ces gouvernements provinciaux luttent toutefois contre une Loi fédérale sur la santé qui exige le maintien de services «médicaux» afin de recevoir des paiements de transfert fédéraux pour les soins de santé.

Ainsi, devant la nécessité d’effectuer des coupures, les gouvernements provinciaux prétendent que le *seul* choix qui leur reste est de pratiquer les *seules* restrictions qui sont en leur pouvoir — des coupures dans les services *non médicaux*. Par conséquent, les soins opculo-visuels non médicaux fournis par les optométristes deviennent de moins en moins importants comparés aux «priorités» médicales comme le lissage, l’enlèvement des tatouages au laser à de fins esthétiques ect. (pourvu que les services soient assurés par des médecins).

Quel est donc l’avenir de l’optométrie?

Ma réponse à cette énigme n’est pas définitive, et elle n’est pas la meilleure. Dans un monde idéal, une solution à long terme ferait en sorte que les «services» optométriques soient éventuellement nommés dans les lois fédérales régissant les services remboursables en vertu des paiements de transfert fédéraux aux provinces. Mais l’on ne pourra atteindre l’idéal qu’à long terme. Dans l’immédiat, les optométristes doivent convaincre les gouvernements provinciaux que leurs services ne sont pas superflus mais essentiels! Après tout, il s’agit de soins de la vue.

Pour conclure, si un gouvernement provincial est d’accord avec nous, il sera alors forcé de trouver les revenus pour maintenir le programme. Cela nous place dans la situation potentielle de plaider en faveur de mesures impopulaires comme l’augmentation des impôts afin d’assurer la poursuite du programme optométrique. Nous serions alors partie à un débat qu’on gagnerait à éviter, selon moi.

Jusqu’ici, la réussite des gouvernements qui ont restreint ou éliminé les services optométriques de leurs régimes d’assurance-maladie démontre que *toutes* les réponses ou les arguments avancés par les optométristes ont échoué à ce jour. La promotion des restrictions budgétaires par les gouvernements, en particulier au cours des périodes de récession, est un argument massue qui efface tous les motifs fondés sur la qualité des soins ou l’universalité. Pour ajouter à la difficulté, nos arguments sont complexes et celui des gouvernements est simpliste.

more than an "option to consider"—it may be one of our best hopes.

We must not content ourselves, however, with merely building *one* path to the future. Perhaps it is time to resurrect and reinforce our keystone: **Optometry is the primary vision and eye care profession.** Because even if the de-insurance of optometric services becomes a reality nationwide, Canadians' needs for primary vision and eye care will not disappear. If anything, as the aging of the "baby boomer" majority of our population progresses, primary vision and eye care will become an ever more significant need. And this is our *niche*. This is what Optometry, and *no one else*, does best!

And I suggest, too, that the time may also have come to re-define and enlarge our health care niche and bring the full range of treatment options under the primary care umbrella *including therapeutic pharmaceutical agents (TPAs)*. In the United States, the past 5 to 10 years have seen an ever-growing number of state legislatures agree that TPAs are integral elements of effective optometric care. Optometrists in 30 states now have been granted the legislated use of TPAs. From reports we've heard on this side of the border, contrary to all opponents' predictions (including those raised by organized medicine) of "dire consequences", there has been a tremendous public benefit derived from optometric use of TPAs. There is no reason to assume the benefit would be any less for Canadian health care, both for optometric patients and for practitioners whose quality of education is certainly—at the very least—the equal of that offered to any of our US colleagues.

Then, to the public eye, we will present ourselves as truly a full-scope primary vision and eye care profession.

Wouldn't that be interesting—to be able, eventually, to point to de-insurance as the best *opportunity* ever presented to Optometry?

If anyone out there has any other ideas, we're certainly willing to hear them.

**Dr Jean-M Rodrigue
President**

La désassurance est-elle une impasse ou la voie de l'avenir?

Depuis quelque temps déjà, j'ai préconisé un programme national de tiers comme l'une des avenues à utiliser. En reliant l'optométrie à l'échelle nationale avec les patients au moyen de contrats collectifs avec des employeurs importants dans de nombreuses villes, nous serions assurés d'une source constante de patients. Et si les ententes actuelles avec le gouvernement par le biais des programmes d'assurance-maladie provinciaux sont rompues, il s'agirait non seulement d'une «possibilité» — ce serait peut-être un de nos meilleurs espoirs.

Cependant, nous ne devons pas nous contenter de bâtir *qu'une* voie d'avenir. C'est peut-être le temps de ressusciter et de renforcer notre raison d'être :

L'optométrie est la profession des soins opculo-visuels de première ligne. Même si la désassurance des services optométriques devient une réalité nationale, les besoins des Canadiens en soins opculo-visuels ne vont pas disparaître. Au contraire, à mesure que progresse le vieillissement de la génération du «baby boom» dans notre population, les soins opculo-visuels primaires deviendront un besoin d'importance croissante. Et voilà *notre* créneau. C'est ce que les optométristes, et *personne d'autre*, font de mieux!

Et je suggère aussi qu'il est plus que temps de redéfinir et d'élargir notre créneau des soins de santé en y intégrant toute la gamme des traitements dans le cadre des soins de santé de première ligne, *y compris les agents pharmaceutiques thérapeutiques (APT)*. Aux États-Unis, depuis 10 ans, on a vu un nombre croissant d'États accepter que les APT fassent partie intégrante des soins optométriques. Dans 30 États maintenant, les optométristes ont le droit juridique d'utiliser les APT. D'après les rapports dont nous avons pris connaissance de ce côté-ci de la frontière, contrairement aux prédictions de tous les opposants (notamment celles soulevées par la médecine officielle qui prédisaient des «conséquences néfastes», le public a retiré des avantages immenses de l'utilisation des APT par les optométristes. Il n'y a aucune raison de supposer que l'avantage serait moindre au Canada, à la fois pour les patients et les optométristes dont la qualité de la formation est certainement — au moins — l'équivalent de celle qui est offerte à nos collègues aux États-Unis.

Ainsi, aux yeux du public, nous nous présenterons comme une profession qui assure une pleine gamme de soins de première ligne opculo-visuels.

Si vous avez d'autres idées, nous ne manquerons pas d'y accorder toute notre attention.

**Dr Jean-M Rodrigue
Président**

Mesure de l'acuité visuelle par la technique du regard préférentiel : Revue des méthodes

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mots clés : regard préférentiel; acuité visuelle;
nourrissons; cartes d'acuité

key words: preferential looking; visual acuity;
infants; acuity cards

La technique du regard préférentiel mesure efficacement l'acuité visuelle des jeunes enfants et des individus handicapés intellectuellement. Le stimulus utilisé fait appel à des mécanismes de résolution et ne nécessite aucune réponse verbale de la part du sujet. Les méthodes de regard préférentiel conventionnelles s'adressent davantage à la recherche et aux milieux institutionnels.

L'instrumentation est plus encombrante et la rigueur statistique inhérente à l'obtention des seuils contribue à alourdir le processus. Les cartes d'acuité de Teller sont très intéressantes sur le plan clinique. Elles sont très maniables et les valeurs d'acuité visuelle peuvent être obtenues en moins de cinq minutes. Dans leur version originale, elles n'offrent cependant pas la rigueur statistique des méthodes conventionnelles.

Preferential looking methods efficiently measure the visual acuity of infants and developmentally delayed subjects. The procedures use grids as stimuli and do not require any verbal response from the subjects. Early preferential looking methods for the assessment of visual acuity relied upon formal, statistically rigorous, psychophysical procedures that were lengthy and could be easily applied only in laboratory studies. From a clinical point of view, Teller acuity cards are very interesting. They are easy to handle and they give good results in less than five minutes. However, they are not as statistically rigorous as traditional preferential looking techniques.

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La mesure de l'acuité visuelle chez l'adulte est un processus simple qui requiert peu d'effort. Cependant, cette même mesure chez le jeune enfant ou chez l'individu handicapé intellectuellement peut représenter un grand défi.

L'acuité visuelle peut être évaluée de plusieurs façons selon que l'on se réfère au minimum visible (détection), au minimum de séparation (résolution) ou au minimum lisible (reconnaissance). L'échelle de Snellen est l'instrument le mieux connu pour mesurer l'acuité visuelle de reconnaissance des adultes et des enfants d'âge scolaire. Les échelles et les tests d'acuité visuelle s'y réfèrent généralement comme point de comparaison.

Les tâches de détection s'adressent plus particulièrement aux enfants de 9 à 18 mois.^{1,2} Elles mesurent un seuil qui correspond au plus petit stimulus perceptible sur un fond homogène contrastant. Parmi les tests plus connus faisant appel à une tâche de détection, on peut mentionner;² le test Candy Bead de Bock, le test des balles graduées de STYCAR (Screening Test for Young Children and Retardates) et le test d'acuité visuelle par points.

Ces tests doivent être utilisés avec prudence car ce genre de seuil ne ressemble guère aux autres seuils d'acuité visuelle, le jugement du sujet ne se rapportant qu'à des critères d'uniformité du champ plutôt qu'à des critères de différenciation spatiale.³

Les tâches de reconnaissance en vertu desquelles le sujet doit reconnaître le stimulus ou le distinguer de stimuli analogues s'adressent aux enfants de trois à cinq ans. Elles recoupent quatre grands groupes² : les tests directionnels, les échelles de lettres et les échelles de symboles, les jouets miniatures et le test de "Cereal Bailey Hall" qui implique la reconnaissance, par l'enfant, d'une céréale (Cheerio) lorsqu'on lui présente simultanément deux cibles de même dimension, soit une céréale et une forme carrée (rôtie).

Depuis quelques années, les tâches de résolution sont très utilisées pour évaluer l'acuité visuelle même chez les nouveaux-nés. Le seuil mesuré présuppose que le sujet perçoive la séparation entre les éléments du stimulus. On compte, d'après McDonald trois techniques d'évaluation² : les potentiels évoqués visuels (PEV), le nystagmus optocinétique (NOC) et le regard préférentiel (RP). Les résultats obtenus à l'aide des trois techniques indiquent que l'acuité visuelle des nouveaux-nés augmente entre la naissance et l'âge de six mois. Les études électrophysiologiques (PEV) situent cette augmentation à cinq octaves* alors que les études psychophysiques l'évaluent à deux octaves pour le NOC et trois octaves pour le RP.⁴

Le recueil des potentiels évoqués visuels, quoique très utile, nécessite des instruments coûteux qui s'adressent davantage aux milieux institutionnels. Le nystagmus opto-

* La valeur d'une octave est variable, on l'obtient en doublant ou en réduisant de moitié la fréquence spatiale du stimulus (i.e. 15 c/deg; 30 c/deg.)

cinétique est peu utilisé car les tambours de stimulation, disponibles sur le marché, ne sont pas calibrés pour estimer des valeurs d'acuité visuelle élevées. Par contre, la technique de regard préférentiel est très accessible au milieu clinique. L'instrumentation est peu coûteuse, la manipulation est simple et peut facilement être déléguée à des techniciens compétents.⁵ De plus, la passation du test est brève. Cet article décrit deux techniques de regard préférentiel, la technique de regard préférentiel conventionnelle (par projection optique) ainsi que les cartes d'acuité de Teller.

Description de la méthode

La méthode de regard préférentiel repose sur un fait d'observation. Si l'on présente à un enfant deux plages de même luminance moyenne mais dont l'une est grise et l'autre rayée, l'enfant préfère regarder le stimulus le plus complexe.⁶

La technique du regard préférentiel de choix forcé à double alternative a été utilisée dans plusieurs recherches de base pour mesurer les fonctions visuelles de jeunes enfants et d'individus utilisant un mode de communication non-verbal.^{4,7,8}

Le stimulus utilisé est constitué d'une succession de bandes blanches et noires d'égale largeur tracées en alternance. Ce stimulus, à haut contraste, est comparable à une mire de Foucault. Un cycle sur la mire se compose d'une bande noire et d'une bande blanche. La fréquence spatiale de la mire s'exprime en cycles par degré (c/deg).⁹ Quand les bandes sont décrites en fonction de leur angle de résolution, soit en min. d'arc, il est possible d'établir une relation avec l'acuité Snellen (30 c/deg. = 1 min/bande = 6/6).⁴ Lorsque la fréquence spatiale de la mire se situe au delà de l'acuité visuelle d'un sujet, ce dernier n'arrive plus à distinguer la mire stimulus d'une plage grise homogène. Il est donc possible de présenter au sujet d'une part une figure formée d'une mire de fréquence spatiale connue et d'autre part une figure formée par une plage grise homogène et d'observer ensuite vers quelle figure se porte le regard ou l'attention. Il s'agit d'une technique dite de choix forcé.

Technique de regard préférentiel conventionnelle

Les méthodes conventionnelles de regard préférentiel utilisent un système de projection (fig. 1 et 2). L'appareil est composé d'un écran gris percé de deux ouvertures sous-tendant un angle de 9° à 50 cm. Le centre de chacune des ouvertures est situé à 18° à droite et à gauche du centre de l'écran. L'écran est percé en son centre de façon à observer le comportement de l'enfant lors de chacune des présentations. Un écran translucide (ou écran de rétro-projection) sur lequel les stimuli sont projetés est placé derrière chaque ouverture. La

luminance moyenne des cibles est égale à celle de l'écran soit : 15,85 cd/m².

La projection des stimuli sur les écrans se fait de l'arrière à l'aide de deux projecteurs à diapositives.¹⁰ Il



Figure 1. Appareil conventionnel de regard préférentiel

est possible d'avoir une bonne distribution des seuils d'acuité visuelle en utilisant 34 diapositives dans chacun des carroussels, dont 17, de très haute fréquence spatiale (72 c/deg), font office de plage homogène. Les 17 autres cibles doivent être placées dans un ordre croissant de fréquence spatiale qui s'étend de 0,38 c/deg (6/474) à 33 c/deg (6/5.45). La présentation de chacune des cibles peut être d'orientation horizontale ou verticale et doit toujours être associée à la projection d'une plage homogène. Les diapositives doivent être obtenues par impression photographique à haut contraste (82%).¹¹ La présentation des stimuli peut aussi être faite sur un moniteur noir et blanc à haute résolution.

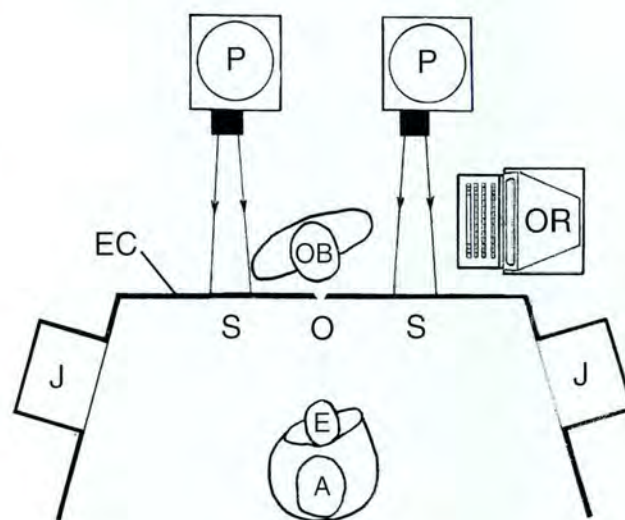


Figure 2. Schéma de l'appareil conventionnel: A = assistante; E = enfant; EC = écran; O = ouverture; S = stimulus; J = jouet; OB = observateur; OR = ordinateur; P = projecteur

Le nombre de présentations de chacune des cibles est fonction du type de seuil recherché. Traditionnellement, la technique conventionnelle de regard préférentiel est associée à la méthode constante ou à la méthode psychophysique de l'escalier. La méthode constante implique un nombre constant d'essais par niveau alors que la méthode psychophysique de l'escalier met l'emphasis sur les cibles dont la fréquence est près du seuil.

La présentation des cibles est généralement à double insu, c'est-à-dire, que l'examineur et le sujet ignorent la position relative de la mire et de la plage homogène.

Deux jouet animés sont situés immédiatement à côté de l'écran, un à droite et l'autre à gauche. Ces jouets servent de renforcement puisqu'ils ne sont visibles par l'enfant que lorsqu'il donne une bonne réponse. Ils sont placés dans des boîtes en bois dont la face avant est en "plexiglas" noir. Les jouets ne sont visibles pour l'enfant que lorsque l'observateur appuie sur un commutateur qui illumine l'intérieur de la boîte et active le jouet.¹² Les jouets ne sont utilisés qu'auprès des enfants âgés entre 12 et 30 mois. Ils renforcent la tendance à regarder la mire plutôt que la plage grise homogène.¹³ Sans renforcement, la technique du regard préférentiel s'adresse principalement aux enfants âgés de moins d'un an.⁴

L'utilisation d'un micro-ordinateur rend la méthode très simple et permet à l'observateur de travailler seul sans, pour autant, introduire de biais lors de l'observation du comportement préférentiel de l'enfant. Il est possible de créer un logiciel qui gère le déroulement du processus en sélectionnant les cibles à projeter, en activant les projecteurs de diapositives et en analysant immédiatement les résultats jusqu'à ce que le seuil soit atteint. Le rôle de l'observateur se limite donc à observer l'enfant, à inscrire les résultats et à actionner les jouets servant au conditionnement. Un logiciel de ce genre est utilisé, avec un certain succès, actuellement à l'École d'optométrie de l'Université de Montréal pour la recherche et en clinique de pédiatrie.¹⁴

Il est souvent d'usage, dans les méthodes psychophysiques modernes, de combiner la méthode constante à des techniques de choix forcé à double alternative. Avec cette méthode, la règle d'expérimentation est indépendante : la succession dans la présentation des niveaux du stimulus ne dépend pas des réponses aux essais précédents, mais uniquement d'une règle de tirage au sort.¹⁵ Il est important de définir a priori un nombre d'essais (N) constant et identique pour la présentation de chacun des n niveaux retenus.¹⁵ Plus N sera élevé, meilleure sera l'estimation de la fonction psychométrique. L'ensemble de ces présentations requiert généralement plus de 45 minutes.

Classiquement, on suppose que la fonction psychométrique tracée à l'aide des résultats obtenus par une technique de choix forcé à double alternative est une fonction normale cumulée.¹⁵ Les niveaux de stimulation sont placés en abscisse et les probabilités d'obtention

d'une bonne réponse, en ordonnée. Une mire de faible fréquence spatiale suscitera un plus grand nombre de bonnes réponses de la part du sujet et portera la probabilité à son niveau le plus élevé, soit 100%. La probabilité qu'une mire dont la fréquence spatiale est sous le seuil de perception, soit observée, est de l'ordre de 50% car l'examineur devra juger d'un comportement dicté par le hasard. Le choix forcé suppose donc que la fonction psychométrique s'échelonne entre 50% et 100%.

Si nous faisons l'hypothèse que la fonction psychométrique est une fonction normale cumulée, il est alors possible de transformer la courbe en fonction linéaire.^{15,16} Cette transformation permet d'estimer, par une analyse dite probit, le seuil et l'écart-type de la fonction.¹⁵ Généralement, le seuil 75 est la valeur la plus fréquemment recherchée, elle correspond à la fréquence spatiale suscitant 75% de bonnes réponses.^{16,17} Cependant McKee et col. suggèrent de porter le critère de seuil à 83% lorsque le nombre d'essais (N) est inférieur à 100 afin que l'erreur intrinsèque à la détermination du seuil affiche une valeur moindre.¹⁶

Dans le but d'obtenir un outil diagnostique plus clinique, Gwiazda et col. préconisent l'utilisation d'un autre mode d'obtention des seuils lors de l'utilisation de la technique de regard préférentiel¹⁸ : "la méthode rapide". Cette technique identifie la plus haute fréquence spatiale pour laquelle l'enfant présente une préférence. La "méthode rapide" est une méthode des hauts et des bas modifiée. Comme pour la méthode psychophysique dite de l'escalier simple, une bonne réponse suggère la présentation d'un stimulus plus difficile d'observation et une mauvaise réponse entraîne celle d'un stimulus plus facile. Mais contrairement à la méthode de l'escalier simple qui se termine après six ou huit changements de réponse, la "méthode rapide" prend fin lorsque, pour une fréquence donnée, le nombre de bonnes et mauvaises réponses permet de rejeter l'hypothèse (à un niveau de signification de 0,05) selon laquelle l'enfant fixe les mires de Foucault lors de 70% ou plus des essais. Cette procédure nécessite généralement un moins grand nombre d'essais par niveau.¹⁸ Des études démontrent que les seuils obtenus, en cinq minutes, par cette technique ne s'écartent, en moyenne, que d'une demi-octave des seuils obtenus par les techniques plus longues.^{18,19}

Cartes d'acuité de Teller

Les techniques traditionnelles et conditionnées de regard préférentiel à choix forcé et à double insu n'ont connu d'utilité clinique qu'entre les mains de chercheurs expérimentés car il n'existait pas de méthodes simples et d'équipement standardisé.²⁰ En 1985, McDonald et ses collaborateurs introduisaient une procédure beaucoup plus accessible : les cartes d'acuité, maintenant connues sous le nom de cartes d'acuité de Teller. Les cartes d'acuité de Teller sont commercialisées par la compagnie Vistech Consultants Inc; et elles sont disponibles, au

Canada, auprès de la compagnie Optique National (Imperial Optical) pour moins de 2000.00\$. Ces cartes sont utilisables dès les premières semaines de la vie et jusqu'à 18-20 mois.²¹

Le test est constitué de 15 cartes qui, lorsque utilisées à 57 cm, couvrent les fréquences spatiales variant entre 0,2 et 40 c/deg par échelon d'une demi-octave.²² Les cartes sont calibrées pour être utilisées à 38, 55 et 84 cm, quoique la calibration pour des distances intermédiaires soit relativement simple. Chaque carte est dotée d'une reproduction photographique de mires de Foucault encadrée à l'intérieur d'une surface de luminance moyenne équivalente (fig. 3). La reproduction est excentrique sur la carte et peut être présentée à droite ou à gauche.²² La série comprend aussi une carte vierge qui permet à l'examineur de vérifier les réponses de l'enfant quand aucune mire n'est visible.²³



Figure 3. Cartes d'acuité de Teller

Les cartes peuvent être présentées dans l'ouverture d'un grand écran gris (Crescent #651) bordé de deux panneaux latéraux qui isole l'enfant des distractions de la pièce. La convivialité de la situation et la rapidité de la passation du test permettent d'éviter le recours au conditionnement. L'examineur parle à l'enfant entre les présentations. Il capte l'attention de l'enfant et stimule son intérêt en cachant temporairement son visage derrière la carte.²¹ Une visière rattachée à l'écran empêche l'individu qui tient l'enfant de voir les cibles.²⁰ Le niveau d'illumination suggéré est de l'ordre de 10 à 20 cd/m².^{5,22,24,25}

L'estimation des seuils à l'aide des cartes d'acuité de Teller présente un caractère subjectif car elle ne suit pas la règle du double insu. Dans les premières études, l'examineur était informé de la position relative des cibles ainsi que de la fréquence spatiale relative de ces dernières.^{20,22,24,25} Les études récentes sont, cependant, plus rigoureuses car l'examineur ne connaît pas la position relative de la mire.^{21,23,26-30} La présentation des cartes peut suivre l'une des deux approches suivantes.

D'une part l'examineur travaille avec une série réduite de cartes sélectionnées en fonction de l'âge de l'enfant; la carte médiane devant correspondre approximativement à l'acuité visuelle potentielle du sujet. L'observateur ne connaît pas la fréquence spatiale absolue des mires mais connaît la grandeur relative de ces dernières (i.e. la mire sur la carte no. 1 possède une fréquence spatiale inférieure à la mire sur la carte no. 2).^{20,24,25,27} D'autre part, l'examineur travaille avec l'ensemble des cartes. Il présente d'abord une carte de très faible fréquence spatiale. La fréquence spatiale des cartes suivantes augmente par saut d'une octave et l'intervalle est réduit à une demi-octave près du seuil.^{23,26,29}

L'examineur doit poser un jugement définitif quant à la présence ou à l'absence de perception de la mire sur les différentes cartes. Le nombre d'essais par niveau dépend du degré de difficulté, pour l'examineur, à poser ce jugement définitif, mais ce nombre est généralement restreint et ce, plus particulièrement, pour les fréquences spatiales les plus éloignées du seuil. L'examineur peut présenter les cibles dans l'ordre qui lui convient.^{20,24,25}

Plusieurs études démontrent qu'il n'existe pas de différence significative entre les seuils mesurés à l'aide des cartes d'acuité de Teller et les seuils mesurés avec des techniques conventionnelles de regard préférentiel chez les enfants âgés entre 0 et 36 mois.^{24,25} Les auteurs encouragent son utilisation car le test est peu coûteux, et son exécution est simple et rapide (2 à 8 minutes).^{20,23-25}

Discussion

La technique de regard préférentiel constitue un test de premier choix pour mesurer l'acuité visuelle des enfants âgés de moins de trois ans.³¹ Elle est non agressive et facilement acceptée par l'enfant et les parents. Elle donne une bonne indication des capacités de discrimination visuelle de l'enfant.¹⁰ Cependant, deux raisons justifient une analyse prudente des résultats. D'une part, les seuils mesurés correspondent à une acuité de résolution et non à une acuité de reconnaissance. La méthode ne se conforme donc pas aux normes recommandées pour l'évaluation des adultes.³² Des études ont démontré que la technique du regard préférentiel était peu sensible aux chutes d'acuité causées par l'amblyopie strabique.^{26,29,33,34} L'effet contour qui fait chuter l'acuité de reconnaissance aurait peu d'influence sur l'acuité aux réseaux.²⁹ La dominance des éléments nerveux extrafovéaux dans le cas de l'amblyopie strabique, contrairement à l'amblyopie anisométrique, pourrait expliquer la meilleure performance des amblyopes strabiques lors de l'évaluation de leur acuité visuelle par la technique du regard préférentiel.³³ D'autre part, on ne doit pas perdre de vue qu'un intervalle de confiance (95%) relativement large est rattaché aux mesures d'acuité visuelle, soit ± 1 octave. Par exemple, une mesure d'acuité de 12 c/deg. (6/15) indique seulement que la vraie valeur

de l'acuité se situe, avec une probabilité de 95%, entre 6 et 24 c/deg. (6/30 et 6/7,5).³¹

Il est préférable d'utiliser la méthode psychophysique de l'escalier ou la "méthode rapide" pour estimer l'acuité visuelle à l'aide d'une technique de choix forcé à double alternative. La méthode constante s'avère utile dans l'évaluation des propriétés statistiques de tous les points de la fonction psychométrique. Cependant, pour déterminer un seul point de la courbe (le seuil), la méthode constante devient moins efficace que la méthode de l'escalier, puisqu'une large proportion des valeurs observées s'écartent de la région d'intérêt.^{16,35}

Les cartes d'acuité de Teller, par leur format et leur maniabilité, sont très accessibles au milieu clinique. Cependant, un biais peut être introduit si le seuil est déterminé alors que la présentation des mires n'est pas faite à l'insu de l'observateur. Il serait certainement intéressant d'ajouter la rigueur statistique inhérente à la "méthode rapide" aux avantages que représentent les cartes d'acuité de Teller.

Conclusion

Il est de première importance pour l'optométriste de connaître les tests permettant de mesurer l'acuité visuelle de tous ses patients. Cette affirmation est d'autant plus vraie pour les sujets susceptibles de présenter un grand nombre d'anomalies oculo-visuelles responsables d'amblyopie, de handicap visuel ou même de cécité légale, tels, les individus souffrant de déficience intellectuelle dont l'acuité visuelle peut être déterminée par la méthode du regard préférentiel.¹⁴ La sélection des tests permettant de mesurer ou d'estimer l'acuité visuelle chez ces individus doit se faire en tenant compte de l'âge mental plutôt que de l'âge chronologique.³⁶ Leur réadaptation ne pourra que profiter de la démonstration d'une vision normale ou de l'absence partielle ou complète de réponses à la stimulation visuelle.³⁷

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A trio of case reports

Catherine Chiarelli

Superior oblique paresis and learning disability

Optometrists are often called upon to evaluate children with learning disabilities, to provide a diagnosis and to make recommendations concerning their visual function. Many factors must be considered in the examination of such children, including any anomalies of refraction, binocularity and perception which must be identified. The impact of such anomalies on reading performance and the benefit of visual remediation have been sources of controversy in recent years. This case report illustrates the interaction of several different factors (visual, intellectual and academic) and the value of optometric therapy as part of a multidisciplinary approach to treating learning disabilities.

History

GD, a 12-year, 3-month-old male, presented for visual evaluation on October 9, 1989. His parents were concerned about his poor reading performance in school, difficulty with copying material from the blackboard, occasional letter reversals and tendency to lose his place while reading. The patient denied blurred vision, but did report intermittent diplopia (vertical and diagonal).

By parent report, he had had two eye exams earlier that year, one by an optometrist and one by an ophthalmologist. No visual problems were detected at either exam. Another opinion was sought by the parents, since many of the patient's symptoms were visual in nature.

A complete developmental and medical history was taken. The patient was born 2 weeks prematurely after an uncomplicated pregnancy. He was not of low birthweight (6 pounds, 5.5 ounces). Delivery was complicated by wrapping of the umbilical cord around the baby's neck; he was transferred to the high-risk nursery and received supplemental oxygen (by respirator) for approximately one week. He was released from the hospital with no further complications.

General health was good throughout childhood. Personal ocular history was negative for trauma or infection. Family ocular history was positive for strabismus (an uncle had hypertropia).

Scholastic difficulties began in grade 2, with reading being the weakest subject. The second grade was repeated. Formal intelligence (IQ) testing was done through the school system on two occasions. At the age of 8 years, 4 months, the boy had a WISC-R full-scale IQ of 91 (verbal IQ, 88; performance IQ, 96); the patient was subsequently given learning disability services. The WISC-R was repeated at the age of 11 years, 5 months; the full-scale IQ was 79 ± 3 (verbal IQ, 77; performance IQ, 85); relative weaknesses were identified as number facility, word knowledge and ability to reproduce abstract designs. The apparent drop in IQ was attributed to social and scholastic factors rather than any organic dysfunction. The patient was now in grade 6 with learning disability classes for reading and math; he was achieving Cs, Ds and Fs.

Vision assessment

Uncorrected visual acuity was 20/20 OD/OS/OU. Retinoscopy showed Plano OD, +0.25 OS; this was refined to Plano OD/OS by a subjective refraction and prism balance.

As there was no refractive error, binocular vision testing was done without phoropter. Unilateral and alternating cover tests, with head in straight position, revealed an intermittent left hypertropia approximately 5 pd at distance and an intermittent left hypertropia approximately 5 pd with 5–6 pd eso component at near. The hyperdeviation increased with gaze to the right and with head tilt to the left (Park's three-step test). There was a positive Bielschowsky sign, as the left hypertropia became manifest with head tilt to the left. These results indicated a paresis of the left superior oblique muscle. The magnitude of the deviation in primary gaze, with head straight, was measured as 8 pd left hyper at distance and 5 pd left hyper at near (by Maddox rod and prism bar).

For the remainder of the testing, the patient was allowed to assume his normal head position (slight tilt to the right), since this would represent his habitual binocular status. Stereoacuity was 20 sec of arc by Randot circles. Vergence reserves at near were NFV x/4/2, PFV x/2/0 by prism bar. Vergence reserves at distance, and vertical vergences, could not be quantified as fusion was not maintained.

To screen for visual perceptual deficiencies, the test for visual analysis skills (TVAS) was done. Score was at the 9-year age level.

Pupils were 4 mm in size and equally reactive to light, with no afferent pupillary defect. Anterior chamber angles were Grade IV by Von Herrick estimation method. Dilation was achieved with 1% tropicamide,

1 drop OU preceded by instillation of 0.5% proparacaine 1 drop OU.

Lids, lashes, cornea, conjunctiva, sclera, anterior chamber and lens were clear OU by slit lamp examination. Irides were light brown. Fundus examination with the binocular indirect and direct ophthalmoscopes revealed healthy pink optic discs, with C/D ratio 0.4 and visible lamina cribrosa OU. Neural retinal rims were intact. Maculae were clear, each with a bright foveal reflex. General retinal area and periphery were clear OU. Vessels were normal.

Diagnosis and recommendation

A diagnosis of left superior oblique paresis with good sensory integration but poor motor fusion was made. Prismatic spectacle correction (OD: Plano, 2 pd base up; OS: Plano, 3 pd base down) was prescribed for full-time wear. On the basis of Maddox rod measurements, this would fully correct the vertical deviation at near and partially correct that at distance. A larger amount of prism was placed before the eye with the paretic muscle for greater visual comfort. In addition, a visual perceptual deficiency was suspected, based on the nature of the chief complaint, the binocular vision anomaly and the TVAS result. More thorough evaluation was recommended after GD had adjusted to the glasses.

Follow-up

GD did not return for his full perceptual evaluation until December 19, 1989. Chronological age was 12 years, 6 months. The following tests were administered:

Test	Score
Slosson intelligence test	mental age 9 years, 2 months
Bender-Gestalt visual motor test	6.6 years
TVAS	8 years
King-Devick saccade test	
speed	9 years
accuracy	13 years
dyslexia determination test (DDT)	
reading level	grade 3
decoding subtest	phonetic/eidetic relatively equal
encoding subtest	mild deficiencies in both phonetic and eidetic

The tests identified a delay in the development of visual-motor integration and visual analysis skills relative to intellectual development. A diagnosis of dyslexia by the DDT cannot be made with certainty when visual perceptual problems exist; however, the results did indicate deficiencies in basic reading skills. The presence of a long-standing binocular vision problem and its possible role as a causative factor in these learning difficulties was also considered.

Three goals of therapy were planned: (1) to improve binocular co-ordination (fusion, vergence, accommodation); (2) to improve visual analysis skills; and (3) to improve reading skills (through academic resources).

Continued full-time wear of spectacles was encouraged. Vergence training with prism flippers (8 pd BI, 8 pd BO) at distance and near (10 minutes per day) and the Michigan visual tracking program¹ (10 minutes per day) were initiated.

Continued care

The patient returned for follow-up one month later. He and his parents reported good compliance with the therapy, although he found it quite difficult to fuse the 8 pd base in. Vision and visual comfort with the glasses were described as good, and no intermittent diplopia was experienced.

Aided visual acuity was 20/20 OD/OS/OU. Cover test through the prescription showed left hyperphoria, 5–6 pd at distance and 2–3 pd at near. (The residual deviation was larger than expected; this may have resulted from partial prism adaptation, or, more likely, from discrepancies between the alternating cover and Maddox rod tests.) Habitual head position was much straighter. Fusion was stable and reserves were easily measured:

At distance:		At near:	
NFV	X/6/-2	NFV	X/6/2
PFV	X/18/10	PFV	X/25/18
BU OD	X/6/-2	BU OD	X/10/0
BD OD	X/3/0	BD OD	X/4/0

Binocular accommodative and vergence facility with ± 1.50 D lens flippers was 6 cycles per minute (below average). GD had great difficulty in clearing ± 2.00 D. Saccadic oculomotor movements improved slightly; King-Devick score for speed was at the 10-year age level, and for accuracy was at the 13-year age level.

Binocular co-ordination had improved with therapy, but vergence ranges were still outside normal limits. Home therapy was to continue with ± 2.00 D lens flippers (using 0.50 m target size), 5 to 10 minutes per day, in order to integrate the accommodative system and the vergence system. An increase in spectacle prism was postponed until it could be decided that prism adaptation was not occurring. Rosner's Visual Analysis Skills Therapy (VAST) Program was initiated,² beginning at pattern 100 with geoboard and 25-dot map. GD was to spend 25 to 30 minutes each day on VAST.

He returned again in one month. Flipper exercises had been done for 15 minutes three times per week. VAST was done 5 times per week. With emphasis on using the geoboard only (he did not enjoy drawing the patterns) he had advanced to the end of the 200 figures. His parents noticed a significant improvement in his school work (fewer letter reversals, improved reading speed and

accuracy), and grades were higher. There were no subjective visual complaints. Full-time wear of spectacles was continued. Snellen visual acuity and phoria (by cover test) were unchanged (therefore prism adaptation was not occurring).

Stereoacuity remained 20 sec of arc at near by Randot circles test. Vergence ranges at near were as follows:

NFV	X/6/4	(little change)
PFV	12/14/16	(blur point recognized, but break point lower than last exam)
BU OD	6/5	(more balanced than at last exam)
BD OD	4/0	

Lens bar flipper performance was much improved: 10 cycles per minute ± 1.50 D (within normal limits), and 6 cycles per minute with ± 2.00 D (slightly reduced). Accommodative lag, by MEM (modified estimation method), was 0.50 D (normal). TVAS age-equivalent score was 11 years (previous score was 8 years).

The results indicated that significant progress had been made. Since the vertical vergence ranges were quite well balanced and visual comfort was good, no change in spectacle prescription was recommended. (Vertical deviations due to superior oblique pareses can become larger with time, and it is best to correct with low amounts of prism so that increases can be made when necessary in the future.) The patient and his parents were counselled, however, that further improvement in binocular integration would be beneficial, and continued therapy with ± 2.00 D lens flippers was encouraged. Also, VAST with emphasis on drawing patterns 160 to 200 was advised. We all agreed that it was time to seek help from academic resources as well. Plans were made to enrol GD in evening classes for basic reading at a local public learning centre. Visual training would be continued as time permitted.

Follow-up was done again in one month. The patient reported that he had not done the lens flipper exercises or VAST consistently, and had discontinued them altogether approximately two weeks earlier. There were no subjective visual complaints. Glasses were worn at all times. School performance had again improved; grades were now As and Bs and he had made the honour roll for the first time.

His parents were very pleased with his progress. They believed that the glasses had made the biggest impact on his ability to receive and process visual information, and that the extra reading classes had allowed him to advance to a level appropriate for his school placement. Visual acuity and binocular status were unchanged. The TVAS score remained at 11 years. The Bender-Gestalt age-equivalent score was now 9.0 to 9.6 years (previous score 6.6 years).

At this point, the patient would continue with tutoring and special education to develop specific reading skills. He would return in one year for a general eye exam.

Discussion

Paresis of the superior oblique muscle is most often of unknown etiology, and is thought to be congenital in many cases. Trauma is the second most common cause.³ The left eye is more likely to be affected. Characteristically, fusion is maintained by tilting the head toward the contralateral side, and strabismic amblyopia and suppression are rare.⁴ Treatment usually consists of prismatic spectacle correction alone but may include anti-suppression and vergence therapy in certain cases.⁵

Simons and Gassler have found vertical phoria to be associated with below-average reading performance.⁶ There are a number of reports in the literature of improved reading and attention with visual training (accommodation, fusion, oculomotor movements).⁷⁻⁹

This patient demonstrated a classical clinical presentation of congenital superior oblique paresis. This likely went unnoticed by his parents and previous examiners since a slight head tilt partially compensated for the vertical deviation, and acuity and stereoacuity were normal. The improvement in his binocularity (through spectacle correction and visual training) resulted in improved visual comfort, which he thought had a definite, positive effect on his school performance.

While the symptoms of intermittent diplopia, loss of place when reading, poor handwriting and copying skills, and reversal errors are characteristic of binocular vision anomalies, they are also suggestive of visual perceptual disorders.¹⁰ These can also influence reading achievement.¹¹ For this reason, additional testing was done and delays in visual-motor integration were discovered.

Rosner's therapy program for visual analysis skills is most effective when implemented at a young age (less than 7 years) or when the educational deficit is not great (reading level only slightly below grade level).¹² However, the patient was quite motivated and willingly tried the therapy for a few weeks, with some success. He found that compensatory education, as provided by the learning centre, was more beneficial and thus discontinued the program before improving his skills to the age- and grade-appropriate level.

Very often, improvement in TVAS scores after VAST are attributed to practice, since the therapy and the test are similar. In this case, improvement in the visual-motor skills was also documented by scores on the Bender-Gestalt test, administered before and after therapy. Although the Bender and the TVAS are not interchangeable tests, there is a high correlation between them.¹³ The results indicate that, through VAST, the patient learned to analyze the spatial components of visual figures more accurately; this was reflected by his improved performance on the Bender.

This case demonstrates the many factors that must be considered and included in the diagnosis and management of learning-disabled patients. Optometric intervention certainly can be beneficial when part of a multidisciplinary approach.

Amblyopia therapy for unilateral aphakia in congenital cataract

Unilateral congenital cataracts must be aggressively treated immediately after they are discovered. It is well accepted that best results are obtained when surgery is done before four to six months of age and optical correction (by contact lens) is provided within three to four weeks of surgery.^{14,15} A strict regimen of contact lens wear and patch therapy follows, which continues for several years. This case report outlines participation in the care of an infant with unilateral aphakia (secondary to surgery for congenital cataract), and describes many of the difficulties encountered by both parents and professionals in maintaining compliance with the necessary therapy.

History

MP had a cataract extraction at two months of age, shortly after a whitish pupil in her left eye was noticed by her father. Ultrasound done before the surgery revealed no intra-ocular mass behind the cataract. The diagnosis was developmental cataract, which was not associated with rubella syndrome or other systemic abnormality. There was no family history of cataracts. General health was good. Pregnancy and delivery were uncomplicated. No causative factor was identified.

Therapy

A gas permeable contact lens was fitted three weeks later by a paediatric ophthalmologist. K readings at that time, determined with the infant under general anaesthesia, were 43.50/43.00 OS (no axis specified). The final lens was Alberta S, base curve 7.60, diameter 9.7 mm, power +30.00 D (for best focus at 0.67 m). Adaptation to contact lens wear was quick, and occlusion therapy (for half the infant's waking hours) was instituted immediately. The parents were told that the eye had potential to achieve normal vision if the patching regimen was followed faithfully for five to six years. Progress checks continued every three months.

When the infant was 10 months old, the power of the contact lens was reduced to +29.00 D. Visual acuities by preferential looking technique were 4.7 min of arc OD (20/94) and 5.6 min of arc OS (20/112). Both values were within normal limits for age.

In November 1990, shortly after this last progress check, MP's parents presented to discuss their daughter's case. Their biggest problem was trying to achieve 5 hours per day of occlusion, as the child found it quite easy to tear off both the Opticlude adhesive patches and the eye

pads held with micropore tape. A restraining chair was suggested, and sold, by the ophthalmologist; however, the parents reported poor morale whenever they used it. They also were concerned about the delays in MP's motor development if she were to be restrained for half of her time awake; at 11 months of age, she was already saying single words (three- to four-word vocabulary) but was just crawling and was unable to walk even with support.

A soft, opaque, occluder contact lens for the right eye was recommended. The parents were quite enthusiastic about this option. They returned with MP two weeks later for a contact lens fitting.

Standard biomicroscopy was impossible, so the anterior segment was examined using a penlight, Burton lamp and the binocular indirect ophthalmoscope and 2.2 pan-retinal lens (held a bit closer than usual to the eye to focus on the cornea). Lids, lashes, cornea, conjunctiva and anterior chamber were clear OU. Pupil diameter was 3 mm OU. A constant left esotropia of variable magnitude (15 to 30 pd) was observed.

The gas permeable lens in the left eye appeared to be an alignment fit, with 2 to 3 mm movement with the blink. Corneal diameter was approximately 9.5 to 10 mm (microphthalmia). There was no corneal staining (after 8 hours of wear). Corneal diameter OD was 11 mm.

The trial lens used was an Alden AL-47, base curve 7.7, diameter 13.0 mm. It centred well in all positions of gaze, and the patient quickly forgot that it was in her eye. The fit was assessed after 15 to 20 minutes by sliding the lens slightly to the temporal side and observing the ease with which it moved. Base curves 7.7 and 7.9 were compared. Both lenses showed adequate movement, with the 7.9 base curve being a bit looser, as expected. Since centration and proper corneal coverage at all times are critical in an occluder lens, the 7.7 base curve was chosen. The diameter of the black pupil was chosen as 11 mm, again to ensure coverage of the pupil. (MP's irides are brown, so a black pupil of this size is not very obvious when the lens is in the eye.) The trial lens was -3.00 D in power; this is generally accepted as an appropriate power for easy handling of the lens; however, MP's mother found it still quite difficult to insert. The final occluder lens ordered for OD was therefore AL-47, base curve 7.7, power -5.00 D, 11 mm opaque black pupil. The Hydrocare cleaning system was recommended, since a hydrogen peroxide disinfectant might fade the tint with time. The parents were advised *not* to use the Boston rigid lens solutions for the soft lens.

After 2 weeks of use, the parents were very pleased with the success of the occluder lens. The child's morale increased tremendously, they said, over that when the patch was used. They reported some difficulty with insertion of the lens, and thus were not able to use it every day; they compensated by using it for a longer period of time the next day, for an average of five to six hours per day. Both lenses were removed at night, but

they were left in during short afternoon naps, as the infant's grandmother (who cared for her during the day) was unable to remove them.

The fit of both lenses (OD and OS) was assessed as good; the soft lens centred well without tendency to tighten with wear, and the RGP lens maintained a fairly well-centred alignment fit. The corneas were clear with no fluorescein staining or central edema after 3 hours of wear. The parents were instructed to continue the amblyopia therapy and return in one month for visual acuity measurements.

At this visit, the parents decided to discontinue the services of their ophthalmologist, and MP's clinical record was officially transferred, with the appropriate consent form being forwarded.

Compliance was excellent over the next month. Visual acuities, measured with Teller cards using the acuity card procedure,¹⁶ were 20/60 OD and 20/80 OS. Again, both values were within normal limits for age (13 months). A small (10 to 15 pd), constant left esotropia and hypertropia was evident by Hirschberg corneal reflex text when the right eye was unoccluded. Corneas were clear with no fluorescein staining.

Follow-up resumed three months later. Unfortunately, the child was not very co-operative for examination on the day of her appointment. She would not permit insertion of the occluder lens. Visual acuity of the right eye was 20/50 by Teller cards; acuity of the left eye could not be obtained. The left eso-hypertropia remained; now approximately 15 to 20 pd eso and 10 pd hyper in magnitude. Again, the left lens was fitting well and the corneas were clear.

Refraction and dilated fundus exam were attempted. One drop of 1% Cyclogyl® OU was instilled. Over-refraction in the left eye and binocular indirect ophthalmoscopy were attempted, without success. The patient was rescheduled for examination on another day.

In two weeks time, they returned again. MP was in a very good mood and permitted insertion of both lenses that morning. Her mother reported that it most often took two people to restrain her in order to insert the soft occluder lens, and so she was not able to use it every day. Thus, the micropore tape patch was used some days, with a restraining jacket (sticks in arms) to prevent MP from removing it. No problems with tolerance of the RGP lens were encountered. Concern was expressed over the parents' observation that, although the child had been walking independently for the past three to four weeks, she fell frequently when the right eye was occluded.

Visual acuity of the left eye was quickly and reliably measured as 20/60. Over-refraction was $-3.25-1.00 \times 135$. This indicated focus at a distance of 27 cm and could partially explain MP's tendency to fall when walking. The fit of both contact lenses was as previously described: OD centred with slight but adequate movement, OS centred with 2.5 to 3 mm movement and even fluorescein pattern. The lenses were not removed at this

visit, since they had been in only two hours (corneal staining or edema would be unlikely) and we did not want to risk losing MP's co-operation. A left esotropia (15 to 20 pd), this time without hyper-component, was evident. Monocular indirect ophthalmoscopy (without dilation) was attempted on the left eye; a clear, healthy macula was the only intra-ocular detail observed.

The parents were informed of MP's excellent progress; visual acuities were within normal limits OU. A new contact lens for the left eye with power +27.00 D (for focus at 1 m) was ordered. Occlusion therapy with the soft contact lens or patch would continue for an average of five to six hours per day. Encouragement to persist with the therapy, despite the lack of co-operation at times, was given. The parents were reminded that the first four years of life are the most critical for visual development.

MP will be seen at three-month intervals in the future. Not only does this allow the visual acuity and contact lens correction to be monitored, but it also provides an opportunity to praise her parents for their dedication to the therapy. Fundus examination will be attempted at each subsequent visit, but is quite difficult to perform in children of this age. Referral for sedated fundus evaluation will be considered.

Discussion

Developmental congenital cataracts can occur as total cataracts, anterior and posterior polar cataracts, lamellar cataracts or nuclear opacities. Posterior lenticonus and persistent hyperplastic primary vitreous are also common. Eight to 23% of cases are inherited, most often in an autosomal dominant manner and less frequently in an autosomal recessive manner. Associated systemic abnormalities (rubella syndrome, galactosaemia, renal dysfunction, hypoglycaemia, thyroid dysfunction, homocystinuria, syphilis, herpes) and ocular abnormalities (retinoblastoma, retinal detachment, optic atrophy, uveitis) must be ruled out. Any history of maternal drug ingestion or exposure to ionizing radiation must be investigated.

The visual outcome for children with monocular congenital cataracts varies a great deal, even when surgery is performed within the first few weeks of life.¹⁶ However, with dedication to maintaining the proper optical correction and amblyopia therapy, the potential for normal or near-normal acuity is good. Beller et al. report final visual acuity of 20/20 to 20/80 in microphthalmic eyes with congenital cataracts. They conclude that microphthalmos, strabismus and nystagmus (present in 30 to 70% of cases) are not insurmountable obstacles to attaining good visual function.¹⁵

Proper optical correction is provided by means of contact lenses: rigid, gas-permeable or soft. Advantages of RGPs over soft CLs, as used in this patient, include easier insertion, removal and care; correction of corneal astigmatism; and better optical quality. Disadvantages

include the risk of corneal abrasions with lens dislocations and frequent loss of lenses.¹⁷

Keratometry measurements can be obtained with the child under anaesthesia, and final base curve selection is made by evaluation of the fluorescein pattern of trial lenses. The lens diameter is made as large as possible to increase the bearing area in order to maintain orientation and to counter the weight of the high plus prescription in the optic zone.¹⁷ Axial length estimates by A-scan ultrasound at the time of surgery and retinoscopic findings are used to determine lens power. Over-correction by 2.00 D to 3.00 D for near focus is recommended in infancy,¹⁴ although MP's paediatric ophthalmologist chose to over-correct by only 1.50 D. Contact lens wear should begin three to four weeks after surgery.

Amblyopia therapy (patching) is initiated when contact lens wear begins. During the first year, when the risk of occlusion amblyopia is greatest, the phakic eye should not be patched more than 50% of waking time.¹⁸ After the first year, patching of the phakic eye can be safely done 50 to 85% of waking time.

Preferential looking is the most reliable method of monitoring visual development. Typically, the testing is done at 55 cm, without additional optical correction over the contact lens, even when slight discrepancies exist between the near focus distance and the test distance.¹⁶ The larger depth of focus of infants' eyes compensates for small errors in refractive corrections.¹⁹

The development of visual acuity in both the aphakic and the phakic eye is most rapid during the first year, with age-normal limits reached OU. After the age of one year, however, there is a tendency for the interocular difference (IOD) in acuity to increase, as compliance with patching therapy becomes more difficult. As the patching time decreases, limited improvement in the aphakic acuity occurs, while the phakic acuity continues to reach age-appropriate levels. Setting the criterion for amblyopia as an IOD of 0.5 octaves or more, Mayer et al report that 89% of their patients were amblyopic by the end of their third year.¹⁶

Regular changes in the refractive correction are an important aspect of the amblyopia therapy. These changes will occur most rapidly in infancy and less rapidly during the next few years of childhood.¹⁴ The process of emmetropization in the aphakic eye is not the same as in the phakic eye; most of the decrease in hyperopia is due to increases in axial length without simultaneous changes in corneal curvature. This has implications with respect to contact lens wear; K measurements are not critical, as long as the lens fluorescein pattern and corneal integrity are assessed, since frequent changes in base curve will not be required.

The over-correction for near focusing may be changed with age. In infancy, an add of 2.00 D to 3.00 D should be used (since an infant's visual world is within 50 cm); at age one, an add of 1.00 D to 1.50 D is more

appropriate (as the child learns to walk); at age two, bifocal spectacles over contact lens are recommended, in order to provide optimum vision for all activities.¹⁸

Binocularity is very difficult to achieve in children with congenital cataracts. Both the interocular difference in acuity and the aniseikonia with contact lens correction prevent fusion.¹⁸ Most often, an esotropia of the aphakic eye develops.¹⁵ Theoretically, the aniseikonia could be corrected with an inverted Galilean telescope system (minus lens before the aphakic eye with extra plus power in the CL), but clinically, this is impossible to achieve (there is no way of measuring the amount of aniseikonia and most predictions are inaccurate for microphthalmic eyes).¹⁸

To prevent deep-rooted sensory adaptations to strabismus (anomalous retinal correspondence and/or suppression), the practice of full-time patching (2 days over the phakic eye, 1 day over the aphakic eye) with or without prismatic spectacle over-corrections has been recommended.¹⁸ This, too, is impractical in a clinical setting since the consistent use of a patch, or occluder contact lens, is most difficult to achieve.

Pratt-Johnson and Tillson report that making a slight compromise in vision in the aphakic eye may allow development of peripheral fusion. They advocate a reduction in occlusion time (to minimal levels) once 20/40 vision in the aphakic eye is achieved, combined with early realignment (surgical and with prisms) of the eyes. Even if fusion is not obtained, they maintain that this approach may allow the "next-best" binocular response: suppression wherever the visual fields of the two eyes overlap, with the unsuppressed monocular temporal crescents of each eye for a full binocular field of vision in total.²⁰ This approach will be considered when MP's vision reaches the 20/40 level.

Tolerance of contact lens wear in the aphakic eye sometimes decreases once the child reaches the age of 18 to 24 months, due to behavioural factors. Several reports in recent years indicate that, in such circumstances, epikeratophakia is a safe, reversible and predictable procedure that can be used to correct the large refractive error of the aphakic eye, so that amblyopia therapy can continue.²¹⁻²³ MP has not yet lost one lens and permits rigid contact lens wear without resistance; she likely will be able to continue with contact lens correction for some time.

The use of intra-ocular lens implants in children has been associated with complications such as cystoid macular edema, intra-ocular haemorrhage, ischemic optic neuritis, uveitis-glaucoma-hyphema syndrome, infectious endophthalmitis and retinal detachment.^{22,24,25} There is a high rate of secondary operations to relocate or remove the IOL, and the long-term effects of IOLs are not known.²² MP's parents have been counselled (by the cataract surgeon) that an IOL will be considered when she is eight years of age.

In children with monocular congenital cataracts, all efforts are initially concentrated on achieving successful

contact lens wear and amblyopia therapy. If and when this can no longer be continued, other options should be considered. In the case of MP, successful occlusion therapy has been achieved through the use of an opaque contact lens. This alternative form of amblyopia therapy should not be overlooked by practitioners during the critical years of visual development.

Visual handicaps in cerebral palsy

Cerebral palsy is a non-progressive disorder of motor control caused by insult to the central nervous system at some point before the brain has fully matured (prenatal, perinatal or postnatal before the age of 16 years).^{26,27} There are numerous possible causes, most commonly prematurity, low birthweight, birth trauma or asphyxia, genetic factors or environmental toxins.²⁸ The motor impairment is due to damage to the pyramidal and extra-pyramidal and motor tracts. With such involvement, oculomotor control centres and visual pathway fibres are affected to varying degrees, leaving cerebral palsy patients with severe functional visual handicaps. Careful evaluation of the visual system can identify these handicaps, enabling recommendations to be made for therapy, visual aids or both.

History and assessment

JC is a 21-year-old male with cerebral palsy who was referred for an eye examination by his counsellor from vocational rehabilitation services (VRS). Extensive psychological testing done previously through VRS had identified deficiencies in motor skills, and visual and spatial perception. A better understanding of his visual capabilities was necessary to train him more effectively for an appropriate vocation.

JC entered the examination room in his wheelchair, but was able to transfer himself to the examination chair independently. He was articulate and answered most of the case history questions easily. His mother, who accompanied him, was able to provide some information as well. JC reported that, since he had graduated from high school in 1989, he seldom used his glasses, which had been prescribed for full-time wear several years earlier. His main difficulty was reading small print, especially if the print was faint with many lines per page. The counsellors at VRS had observed the labour with which he attempted to read and had suggested that perhaps it would be more appropriate for him to learn to read braille. This recommendation was quite upsetting to JC and his mother, since they had never considered his visual impairment to be so severe.

JC's cerebral palsy was caused by trauma at birth. The medical diagnosis of type of cerebral palsy (spastic, choreoathetoid, ataxic, mixed) and extent of involvement (hemi-, di-, quadriplegia) was not available, but observation of the patient suggested spastic quadriplegia

with greater involvement of the lower extremities. He was not taking any medications and suffered from no long-term health problems other than the motor impairment. The referral letter from VRS indicated that there was extensive damage of the brain's right hemisphere (prefrontal cortex, temporal and parietal lobes) as evidenced by the psychological test scores. The psychological testing had included the WASE (general potential—verbal and performance subtests), Wechsler memory scale, wide-range achievement test, Bender-Gestalt visual-motor integration test, Benton visual retention test and TAT (general aptitude). The psychologist believed that JC had normal intelligence but severe perceptual deficiencies.

Ocular history included two previous, unsuccessful, extra-ocular muscle surgeries for esotropia. The last eye exam had been two years earlier. At that time, a bifocal correction had been advised, but JC had not followed through on this suggestion since he was no longer in school. Current spectacle prescription, which he did not use, was OD +3.50-1.50x018, OS +3.25-1.25x168.

Unaided Snellen visual acuity was 20/80 OD/OS at distance (20 feet). At near (40 cm), JC was unable to read 20/100 reduced Snellen letters with either eye (unaided). With his current spectacles, acuity improved to 20/60-OD/OS at distance and 20/50 OD/OS at near.

Retinoscopic findings (dry) were OD +4.25-2.50x035 and OS +3.75-1.75x 165. Subjective refraction was attempted; JC had difficulty making consistent choices during Jackson crossed-cylinder tests for axis and power determination. The balanced (alternate occlusion) subjective result was OD +4.00-2.50x035 and OS +4.00-1.75x165. Keratometry measurements were OD 41.50/43.87 axis 020 and OS 42.25/43.25 axis 165. With consideration of the current spectacle prescription, retinoscopy result and Ks, a final prescription was decided: OD +3.75-2.00x025, OS +3.75-1.50x168. Best corrected visual acuities were 20/60+2 OD, 20/60 OS at distance and 20/50 OD/OS at near.

Cover test through the above prescription showed a consecutive exotropia (30 pd at distance and near) with a dissociated vertical deviation. The right eye was preferred for fixation 80% of the time. The deviating eye was constantly suppressed (by Worth 4-dot test); diplopia was not experienced under any conditions. No fusion ability was evident.

The push-up method of accommodative amplitude measurement was attempted; however, JC was unable to reliably report subjective blurring of the 20/50 reduced Snellen target. Modified estimation method (MEM) revealed an accommodative lag of +2.00 D to +2.50 D (through the final prescription). Accommodative facility could not be reliably tested with the presence of such a large lag. The lag was reduced to approximately +0.50 D, and near visual acuity was "sharper" (although not improved beyond the 20/50 level) by addition of +1.75 D over the final prescription.

Some restriction of superior gaze was evident upon evaluation of versions; the eyes were able to follow a target to approximately 10 degrees above midline but no further. No horizontal restrictions (in versions or ductions) were present, however a jerky, horizontal nystagmus, with fast phase to the right, occurred with gaze to the extreme right.

Pursuits were evaluated by having the patient follow a slowly moving target in an H pattern. JC showed slightly jerky, rather than smooth, movements. Horizontal saccades were evaluated by asking JC to look from one fixation target to another held 25 cm apart and 40 cm from the eyes. Consistent undershooting was observed.

Confrontation visual field testing indicated some constriction of the inferior field OD and OS. This could not be quantitatively described, again because of inconsistent subjective responses. It is unlikely that the field defect was extensive, as JC's mobility was not affected.

Pupils were 3 mm in size and reactive to direct and consensual light, with no relative afferent pupillary defect. Anterior chamber angles were wide open by Von Herrick estimation. Intra-ocular pressures (by Perkins tonometry) were 16 mmHg OD and 18 mmHg OS at 2:35 p.m. Pupillary dilation was achieved with 1 drop 0.5% tropicamide OU.

Fundus examination was with the binocular indirect and direct ophthalmoscopes. Optic discs were type II with C/D ratio 0.5/0.5 OU. Lamina cribrosa was visible OU, and neural-retinal rims were pink and intact; optic atrophy was not evident. Vessel course was normal, crossings were oblique and A/V ratio was 2/3. Maculae were clear with bright foveal reflex OU. Retinal periphery was clear OU.

Lids, lashes, cornea, conjunctiva, sclera and anterior chamber were healthy OU by biomicroscopy. Vitreous and lens also were clear.

The patient was reassured that ocular health was normal and that vision was not expected to deteriorate with time. The reduced visual acuity was attributed to cortical brain damage. Use of the current spectacle correction was recommended for any detailed distance vision tasks (JC preferred *not* to wear the glasses at all times) and a separate pair of near vision glasses was prescribed for *all* close work (OD +5.50-2.00x025, OS +5.50-1.50x168). Bifocal correction was not advised due to ocular motility and visual field restrictions. Presentation of visual materials at eye level, straight ahead or slightly to the left would minimize the effects of such restrictions. A typoscope or other reading guide would also be helpful.

Occlusion of one eye for detailed visual tasks, to eliminate the spatial confusion created by alternating strabismus, was discussed. This form of therapy might be of limited value for JC since he had deep sensory adaptations to his strabismus (which typically minimize such spatial confusions); however, he agreed to try it a few times.

JC was advised that his visual handicaps were not insurmountable and that it was not necessary for him to consider learning braille as an alternative method of reading. As well, his fine motor impairments would hinder his ability to read braille quickly and efficiently.

He and his mother were very encouraged by the results of the examination. Annual evaluation was recommended.

Discussion

The high frequency of visual anomalies in cerebral palsy patients (up to 86%) is well documented in the literature.²⁹⁻³² The type of cerebral palsy (spastic or choreoathetoid) is predictive of the kind of visual defect that may be found, while the severity of involvement is proportional to the frequency of such defects. Spastic cerebral palsy results from damage to the motor cortex (and other areas of the cerebral cortex) or to the pyramidal (voluntary) motor tract or to both. It is characterized by visual defects such as strabismus, nystagmus, cortical blindness, optic atrophy and perceptual dysfunctions.²⁷ Choreoathetoid cerebral palsy results from damage to the basal ganglia (at the base of the cerebral hemispheres) through which the extra-pyramidal (involuntary) motor fibres pass. Dyskinetic strabismus and upward gaze paresis are common. Visual field defects are expected in both types of cerebral palsy.²⁷ Of course, a patient can have mixed cerebral palsy and thus any combination of ocular signs can occur. JC's eye signs, as well as his physical appearance suggested spastic cerebral palsy.

Significant refractive errors are found in as many as 64% of cerebral palsy patients.²⁹ Hyperopia occurs slightly more frequently than myopia (22% vs 15%) and astigmatism occurs in 28%. Thus, careful evaluation of refractive error is necessary, by cycloplegic refraction in children or patients whose fixation and accommodation do not remain stable during retinoscopy. Dry retinoscopy results for JC were considered accurate; cycloplegia was not required.

The prevalence of accommodative dysfunction in cerebral palsy ranges from 15%²⁹ to 100%.³² Differences in diagnostic test procedures and the criteria for "dysfunction" could account for the discrepancy. Standard optometric vision therapy can be effective in improving monocular amplitudes and facility of accommodation.³² For this reason, accommodative dysfunction is not believed to result from specific brain damage. Training is recommended for children in conjunction with oculomotor and physiotherapy exercises.^{31,32} In cases where training is not clinically practical, an addition for close work, in the form of single vision reading glasses, is advised. Most patients with cerebral palsy do not have the head, neck, trunk and oculomotor control to make effective use of a bifocal-design lens. The option of a reading prescription was chosen for JC since his current vocational rehabilitation program did not allow the time

necessary to train accommodation successfully, nor did he possess the motivation to do so.

Unlike accommodative dysfunction, strabismus is a result of brain damage (in the extra-ocular muscle control centres in the brain stem) and therefore is beyond remediation.³¹ Constant strabismus occurs in 50 to 65% of cerebral palsy patients (all types),^{29,30} with esotropia and exotropia equally prevalent. Surgical alignment of the eyes is most often not permanent, since the motor control to hold the eyes in the corrected position is lacking. JC had consecutive exotropia with dissociated vertical deviation, a common clinical presentation following surgery for infantile esotropia. The prognosis for single binocular vision is quite poor, thus no therapy was indicated.

Ocular motility is controlled by many centres in the brain. Voluntary saccades are initiated in the frontal eye fields (Brodmann area 8) of the motor cortex, and conjugate horizontal gaze is mediated by the pontine centre in the lower midbrain.³³ The cerebellum is responsible for ensuring that the amplitude of horizontal saccades is appropriate;³³ therefore, consistent undershooting, as JC displayed, is suggestive of cerebellar damage. Nystagmus is associated with both cerebellar and brain stem lesions.³⁴

Superior gaze palsies are more commonly seen in choreoathetoid-type cerebral palsy²⁷ and therefore are attributed to basal ganglia damage. Fibres that relay impulses to execute superior gaze movements are a part of the internal capsule that passes through this region.³³ The presence of this motility defect in JC's case indicated that perhaps his cerebral palsy was not purely spastic-type and that the brain damage was wide-spread.

There are reports that eye-tracking therapy is successful in improving oculomotor control in children. Duckman implemented the Groffman visual tracing program to train pursuits, and blackboard exercises and computer games to train saccades.³¹ Gauthier and Hofferer used animated motion pictures as targets to train pursuits.³⁵ Both investigations revealed that oculomotor control can improve, although not to "normal" levels. As previously stated, JC was not motivated to begin any therapy program.

A diagnosis of visual perceptual deficiency in cerebral palsy patients is difficult to make, since most tests require a great deal of fine motor control; however, delays in visual perceptual skills as well as in visual-motor integration skills are reported to be common. It also is difficult to say whether reading problems are due to such perceptual-motor deficiencies, or to oculomotor control problems. Most likely, both types of visual functional defects are involved. It was observed that JC was able to read quite easily when there were few lines of print per page, but he slowed down considerably when confronted with several paragraphs of closely spaced lines (same print size). Reading guides (ruler, typoscope) to reduce contour interaction and the demand for fine saccadic

movements were recommended. These aids do require some degree of fine motor control in order to manipulate them, but also can be simulated on a computer screen.

Although cerebral palsy patients frequently have many vision anomalies, their visual status remains stable over the years.³⁶ Modification of visual stimuli (size, contrast, location, speed of movement) can maximize visual capabilities. Optometrists, as experts in the evaluation of visual function, are the most appropriate eye care practitioners to follow these patients.

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Ophthalmic Abstracts Abrégés ophtalmiques

Editors reviewing articles from recent issues of ophthalmic publications are identified as follows: (RC) Dr Ralph Chou; (LH) Dr Lorne Hart; (MP) Dr Mark Pogue; (MS) Dr Mitch Samek; (PS) Dr Pierre Simonet. Publication references are included for those seeking the complete paper discussed in the abstract.

Can my baby see? The neonatal and infant ophthalmic examination

RA Cline. *The Canadian Journal of Diagnosis*. Vol 8, no 10 (Jan 1991)

This is an excellent article in that even though optometrists don't often have the opportunity to examine the newborn child, we do see infants whose parents want to know if their baby's visual system is normal.

The first portion of the article discusses the development of the visual system and the ways the visual system can have a developmental defect. A complete history of the birth and family is essential.

The author then goes on to describe the technique of examining an infant. An alert baby is best and this is when the baby is hungry. The examiner's tools include direct and indirect ophthalmoscope, fixation light, retinoscope and refraction bar. Each eye is covered in turn with the examiner's hand and a symmetrical response expected from each eye. The fixation point is either a light, food or the examiner's face.

The presence of nystagmus at birth is most likely due to motor dysfunction and is associated with reasonable functional vision. Nystagmus, which appears after birth and particularly after one month of age, usually has its roots in a sensory basis. It represents a motor response to markedly decreased vision and therefore requires a thorough search for an ocular cause for the visual loss.

Congenital cataracts must be treated before the first month in order to allow development of a fixation response. If the cataracts are left untreated, the child will be unable to develop a fixation response and will have profound sensory deprivation amblyopia with nystagmus and poor vision throughout life.

Tonic eye movements are evaluated with various strabismic deviations being present, which will disappear with time. They are usually the result of epicanthal folds and intermittent accommodative spasms. Constant esotropia or exotropia may require surgical intervention and should alert the examiner to the possibility of a central nervous system disorder.

Visual acuity can be estimated by using the Teller test, in which the examiner presents cards with grey and white stripes of various widths, which may attract the child's attention. The examiner must determine the point where the child's attention is captured and where it is lost.

The pupillary light reflex is the most reliable subcortical indication of the presence or absence of vision. In a semi-darkened room, each pupil is checked for its direct and consensual response.

The conjunctiva is checked for the possibility of neonatal conjunctivitis, which occurs from the first to the fifth day and must be dealt with quickly.

A clear red reflex should be seen in each eye, and the red reflex should be extensively investigated. This reflex is best elicited by the use of a direct ophthalmoscope.

Avoidance movements by the baby and blink reflexes are also signs of vision.

The indirect ophthalmoscope with the 20 diopter lens offers a wide view of the retina, optic nerve and peripheral retina. The retinoscope plus refraction bar will give an approximate refraction result.

The author then reviews congenital cataracts, nystagmus and aniridia.

He discusses the "shaken infant syndrome". Every optometrist should be aware of this non-accidental injury to a child. The newborn infant is particularly vulnerable to a shaking injury because of poor head control. Rapid shaking will produce characteristic pale-centred retinal haemorrhages diffusely throughout the retina. There may also be more extensive haemorrhages in the form of pre-retinal haemorrhages and, in severe cases, retinal detachment. A dilated ocular examination and retinal photographs are essential for legal evidence.

Cortical visual impairment refers to the child who is visually impaired as a result of cortical dysfunction. These children are profoundly inattentive to distance and near visual targets. They seldom blink to bright lights and to threatening gestures.

This is an excellent article and should be read by any practitioner whose practice includes paediatric patients. (LH)

Effects of long-term visual display terminal usage on visual functions

PT Yeow, SP Taylor. *Optometry & Vision Science*. Vol 68, no 12 (Dec 1991)

Does prolonged VDT use produce visual changes? The aim of this study is to determine whether the introduction of VDTs will lead to any long-term changes in visual

functions. Refractive errors, visual acuity, nearpoint of accommodation (NPA), nearpoint of convergence (NPC), near horizontal phoria and fixation disparity were measured every three months, starting from baseline, for a period of two years.

It was found that long-term VDT usage does not induce myopia. It also does not cause a reduction in corrected visual acuity. However, the rate of reduction in NPA is significantly greater in VDT users than in non-VDT users, especially for those less than 40 years of age. There is also a reduction in NPC with age but there is no significant difference in this function between VDT and non-VDT users. (LH)

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FITTING A TORIC LENS CAN BE LIKE FITTING A SUIT.

CUSTOM MADE? OR...

OFF THE RACK?



Symposium Report

Building a practice with soft toric contact lenses: Canadian panellists cite some simple steps to success

P Gerber

Consider this: 45% of the vision care population has .75 D or more of refractive astigmatism, yet only 2% are corrected with soft toric contact lenses. Although the other 43% are not necessarily perfect candidates for soft toric lenses, a great many of them are.

Optometrists who are not providing contact lens services to astigmatic patients not only are ignoring a clinical responsibility, they are also passing up a golden practice-building opportunity.

That's the view of six Canadian ODs and one dispensing optician who attended a three-day symposium in the United States on managing the astigmatic patient. They also participated in a round-table discussion on how Canadian practitioners are addressing the same issues.

Sponsored by Wesley-Jessen, the Insight '91 symposium included 91 other optometrists from the US and UK. It was held in Phoenix, Arizona, March 22 to 25, 1991.

Identifying patients

The first step in building a soft toric contact lens practice is identifying those current or new patients who could benefit from soft toric lenses.

"If a patient has a cylinder of .50 D, I'll discuss the lenses. The cylinder is too small to go to a toric, but I will introduce the idea. If the patient has a cylinder of .75 D or greater, I'll demonstrate a toric. I let them know that there are such contact lenses," said Toby Mandelman, OD, of Bedford, Nova Scotia.

A solo practitioner with one associate, Dr Mandelman reported that 20% of her soft contact lens patients are soft toric lens wearers.

For Nixon White, one of six ODs in a Delta, British Columbia, group practice, the toric lens demonstration threshold is usually at 1.00 D of cylinder.

Keith Harrison, chief of contact lens technical services at the Bochner Eye Institute in Toronto, said the decision depends as much on the patient as it does on the practitioner. "At 1.25 D, I don't arbitrarily go into soft torics. I discuss the options with patients and get them involved in the decision."

Gerber Editorial Services, Naperville, IL

Once an optometrist has determined which patients are good candidates for soft toric lenses, there's a fairly simple test to determine the sensitivity of the patient to axis swing.

P Douglas Becherer, OD, of Belleville, IL, counselled Insight '91 delegates to dial the phoropter cylinder knob slowly away from the measured spectacle cylinder axis and to ask patients to report blur or distortion of the acuity chart.

Patients sensitive to 10 degrees or less axis deviation often require several trial fittings before success is achieved. Patients tolerating less than 5 degrees deviation may be poor soft toric lens candidates, he said.

On the other hand, if no blur is reported at 20 degrees or greater, there is a 90% probability of success in the first lens being successful, said Dr Becherer.

Other patients to target are contact lens dropouts. Among Insight '91 delegates, whose participation in the symposium was partially based on the size of their contact lens practice, 15% reported that over half of their contact lens patients were refit patients. Another 60% reported that 21 to 49% of their contact lens patients were refit candidates.

Many astigmats have been told that they cannot wear contact lenses, or they have been unhappy with compromised visual acuity or comfort with contact lenses they have worn, reported the symposium delegates, whose opinions were polled through an interactive computer during the symposium.

For the optometrist who can break through that scepticism, the rewards can be valuable, both in patient loyalty and in enthusiastic referrals.

Fitting techniques offered

Canadian panellists were not of one mind when it came to fitting techniques for soft toric lenses. Donald Bishop, OD, of Calgary, Alberta, said he generally thinks it "a waste of time and overkill to do anything other than an empirical fit." The strictly empirical method is when a lens is ordered on the basis of the spectacle prescription, without actually fitting the lens until a follow-up dispensing visit.

On the other hand, Paul J Gray, OD, of Halifax, Nova Scotia, uses a modified empirical fit. In the modified empirical method of fitting, a diagnostic lens is used to

assess rotation, movement and centration, but no over-refraction, before ordering. Says Gray, "It helps me justify my fee. The patients see I'm doing something for them. Just as with any physician, it's important to touch the patient, be a hands-on practitioner. This also provides me with additional information concerning sensitivity to astigmatic correction."

Dr White takes it one step further. "We use diagnostic lenses. We want to expose the patient to our way of doing things." While the patient waits for the lens to adjust, he or she watches a 10-minute video on contact lenses. "It's part of the whole education process. It's an opportunity. The video is not essential to arrive at the same outcome, but it gives the patient the perception of hand-holding," said Dr White.

When Dr Bishop does have a patient try on a set of diagnostic lenses, he also takes advantage of the settling period. "I'll do another exam. The assistant can work with the patient, and I leap frog. That way we keep the flow going," he said.

Lens inventory discussed

Whether optometrists prefer empirical, modified-empirical or the inventory fitting method depends in part on their

soft toric lens inventory.

For example, Roland des Groseilliers, OD, of Ottawa, is not in favour of keeping a large inventory of lenses. "I had 1,000 lenses. It cost me a fortune," he said.

Dr Mandelman added that she doesn't see the need to carry such a large inventory. "My patients don't expect immediate service," she said.

However, at least one of the optometrists was influenced by the comments of an Insight '91 conference talk.

Dr Neil Gailmard, OD from Munster, Indiana, told the attendees that they could provide same-day dispensing to about 70% of toric patients by maintaining a fitting inventory of 180 lenses.

Suggested parameters of one brand of lens with a median base curve and a single diameter include cylinder powers of -1.25 D and -1.75 D, spherical powers of 0.50 D to -4.00 D, in .25 D steps, and axes of 170, 180, 10 and 80, 90, 100 degrees, he said.

Having an inventory eliminates time-consuming diagnostic fitting and impresses patients who are used to waiting for toric lenses, said Dr Gailmard.

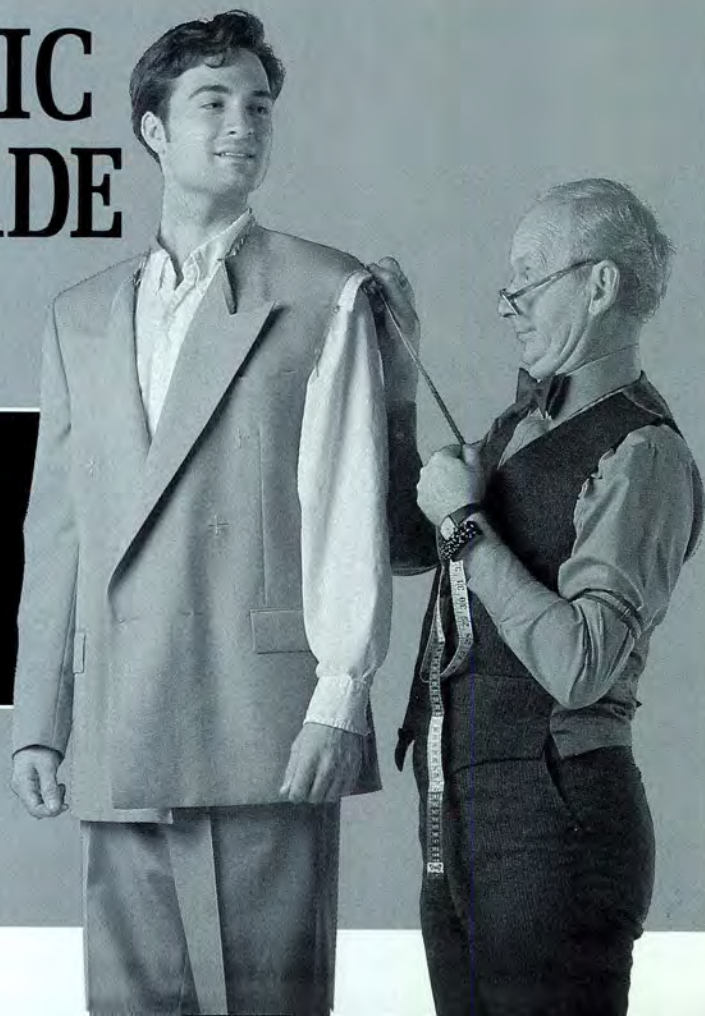
Dr Bishop took that advice to heart. "We see over 200 patients a month. I can see a definite advantage. We have people who want immediate service, especially for replacement lenses," he said.

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A larger lens inventory could also be a factor for those optometrists who urge frequent replacement of soft toric lenses. "I'm very heavily into disposables or planned replacement for all soft lenses, including torics. About 80% of my replacements are done on a quarterly basis, the other 20% on a semi-annual basis," said Harrison.

At the Bochner Eye Institute, the typical soft toric replacement program costs \$600 annually for four pairs of lenses and solutions, reported Harrison. Patients come in twice a year and receive two pairs at a time. He said he can usually overcome a patient's initial sticker-shock by pointing out that they can spend \$300 a year on solutions.

"If patients want to know what's best for them, you have to explain the frequent replacement option to them. Ninety per cent renew the program after their first year," he said.

Dr Gray added that the profit margins in the replacement lenses can be greater because follow-up visits don't involve as much of the doctor's time.

Fees and profitability

With all the variations in the optometrists' practices, it is no surprise that there is variation in their fees for soft toric lenses. For example, Dr Mandelman charges \$450 for a pair of soft toric daily wear lenses and a year of follow-up care; Dr des Groseilliers charges \$175 fee plus material. (In Ontario, no mark-up on materials is allowed.)

Elsewhere, at the Bochner Eye Institute, the fee is \$150 per hour chair time, or \$450 over three months. At Dr White's office, a patient will pay \$425, which includes a service agreement. And Dr Bishop charges \$375 for stock torics, \$425 for custom torics and \$29 for a service agreement.

Despite the pricing differences, all agree that soft torics can be highly profitable.

According to 51% of the delegates at the Insight '91 conference, soft toric contact lenses typically are \$101 to \$150 (US) more profitable than spherical soft lenses. Another 15% reported the difference to be greater than \$151.

According to Lee E Rigel, OD, East Lansing, Michigan, who spoke at the symposium on building a practice through toric lens specialization, "Toric fittings will show an increased profit of \$100 to \$200 (US) per patient per year. This is a potential increased profit of \$10,000 per year from just one additional toric fit per week."

Casting a net

As for how to realize that one additional soft toric lens fit per week, here are some of the panellists' recommendations:

Dr Gray's office is fully computerized, with a terminal in each exam room. A computer log of patients can be a

quick and simple way of finding out which patients are contact lens dropouts or have the clinical indications to make them good soft toric lens candidates.

To reach these patients as well as a wider audience, newsletters and brochures explaining astigmatism and correction possibilities through toric lenses can be beneficial.

Dr Bishop is ready to try an open house for soft torics. "It's worked extremely well with bifocal lenses," he said. A direct mail letter goes out to patients with the correct clinical indications who have responded to a first-visit questionnaire that they were interested in contact lenses. The letter acknowledges that the patient didn't choose the contact lenses at that time, but says, for example, that there's a new product on the market that would be appropriate for their visual condition. They are invited to a seminar, which can take on a festive atmosphere. At the seminar, or open house, they are encouraged to accept the lens on a guaranteed fit basis. If the patient is unhappy for any reason, he or she gets the money back. "We fit lenses to 70% of the attendees to our bifocal seminar," Dr Bishop said.

Each of these strategies is fairly simple to implement. In addition, there are other in-office marketing techniques that could benefit a soft toric practice.

All patient education materials should include comments on astigmatism and toric lenses. That may sound simplistic, but interactive polling results of Insight '91 delegates showed that only 63% of patients know contact lenses are available to correct astigmatism and, even worse, only 18% can correctly define astigmatism.

Video tapes in the reception area or contact lens fitting room can help, too. Some offices are producing in-house videos explaining astigmatism.

All of these practice enhancements can heighten the air of professionalism in an office. Patients are willing to pay for good care from a committed doctor. And soft toric lenses are definitely viewed as a top-quality service offering, the panellists agreed.

For practitioners, expanded services mean expanded revenue. It's a win-win situation.



Prévisions financières



*Dans ce numéro, nous sommes heureux de présenter ce qui deviendra, nous l'espérons, une rubrique régulière de la CJO*RCO. Prévisions financières est une nouvelle rubrique des bureaux d'Ottawa de ScotiaMcLeod Inc, rédigée par un des conseillers en placements de cette entreprise, M. Robert Décarie. Veuillez noter que tout avis, commentaire ou opinion figurant à cette rubrique n'engage uniquement que l'auteur et ne reflète pas nécessairement l'opinion de la CJO*RCO. Comme M. Décarie le dit lui-même dans sa première rubrique, on conseille aux lecteurs de consulter un conseiller fiscal professionnel pour obtenir plus d'informations sur tout sujet présenté dans ce numéro ou ultérieurement.*

*Vous êtes invités à nous faire parvenir vos commentaires. Si vous voulez obtenir des informations plus détaillées sur un type de placement, prière de nous écrire à l'attention de la CJO*RCO et, qui sait, cela pourrait même devenir le sujet d'une prochaine rubrique.*

Le fisc et votre revenu de placement

Il y a deux façons de faire fructifier vos économies : en les prêtant, ce qui vous procurera des intérêts et le remboursement de votre principal à long terme; ou en détenant des actions de sociétés qui vous donneront droit à des dividendes, soit une quote-part des

profits de la société. Avant de choisir vos placements, il importe de savoir comment le revenu qu'ils produisent sera imposé, car après tout, c'est le revenu après impôts qui détermine si un placement est plus avantageux qu'un autre.

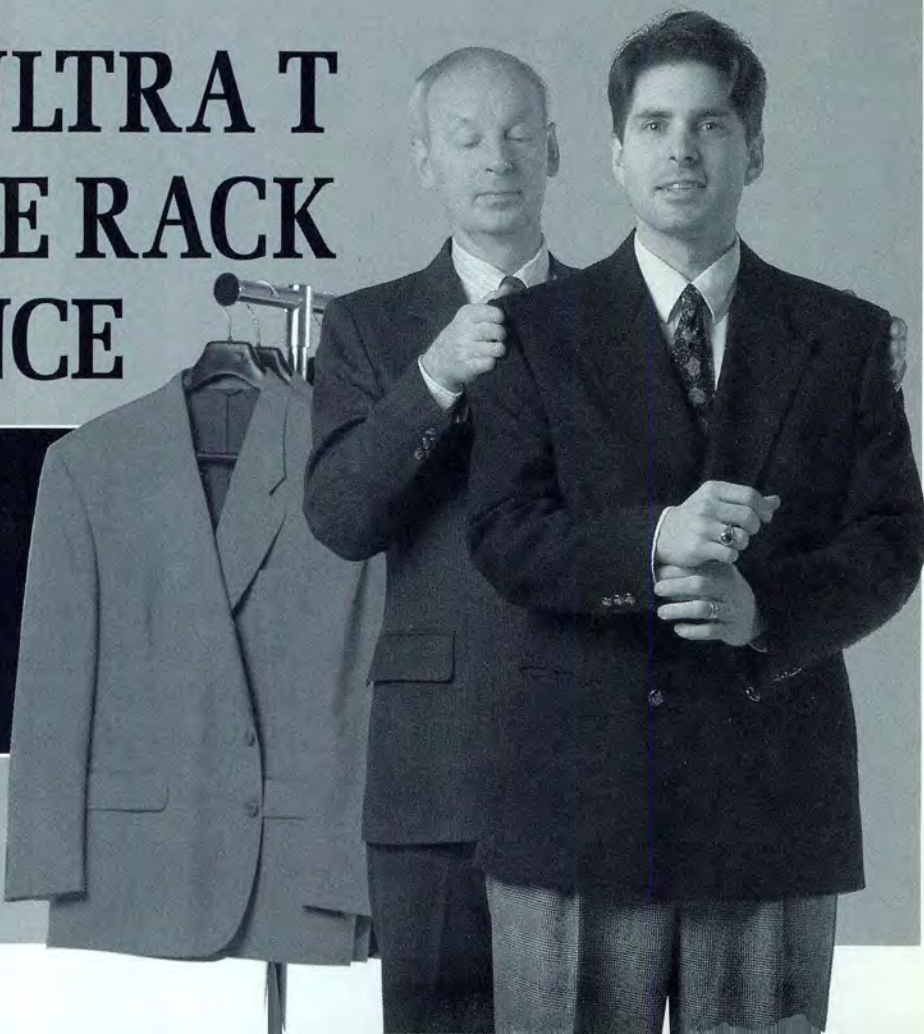
A l'heure actuelle, le revenu d'intérêt que vous gagnez est entièrement imposable à votre taux marginal. Qui plus est, à partir de 1990, les intérêts sur les titres de créance acquis le 1er janvier 1990 et après sont désormais imposables annuellement. Ainsi, les intérêts sur ces titres doivent être déclarés comme un revenu une fois par année, même s'ils ne vous ont pas été versés. Pour cette raison, bien des experts recommandent de mettre les placements portant intérêt (y compris les CPG, les obligations et le bons de Trésor) à l'abri de l'impôt dans un RÉR pour protéger le revenu qu'ils produisent.

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Quant au revenu de dividendes, il bénéficie d'un crédit fiscal, de sorte que le revenu après impôts de ce placement est supérieur à celui des placements portant intérêt. Le crédit d'impôt pour dividendes est calculé à l'aide de la formule suivante : chaque dollar reçu sous forme de dividendes est majoré de 25 %, les impôts exigibles étant calculés à partir du montant majoré. Ensuite, le crédit d'impôt accordé sera l'équivalent de 13,33 % du montant majoré, le résultat étant déduit de l'impôt fédéral à payer. Il ressort de la comparaison de ces deux types de placement que vous ne devrez gagner en moyenne que 100 \$ de dividendes pour obtenir un revenu après impôts de 69,65 \$, alors qu'il faut réaliser des intérêts de 130 \$ pour obtenir le même rendement après impôts. Comme les dividendes bénéficient d'un traitement fiscal privilégié, dans la plupart des cas il n'est pas avantageux de les mettre à l'abri de l'impôt, dans un RÉR, par exemple, car vous perdrez ainsi le crédit d'impôt que le gouvernement accorde sur ce placement.

Les gains en capital, eux, sont assujettis à un traitement fiscal différent de celui imposé aux dividendes et au revenu d'intérêt. On réalise un gain en capital quand on revend un placement à un prix supérieur à la somme du coût d'acquisition et du coût d'aliénation de celui-ci. Sera impossible la portion des gains en capital qui excède votre exonération cumulative, dont les trois-quarts à votre taux marginal. Or, à l'heure actuelle l'exonération cumulative des gains en capital est de 100 000 \$, vous avez donc tout de même un bout de chemin à faire avant d'avoir épuisé votre exonération.

De plus, les pertes en capital peuvent être utilisées pour réduire, sinon annuler votre fardeau fiscal à l'égard des gains en capital. Si vos pertes en capital déductibles dépassent vos gains en capital imposables dans une année donnée, vous avez l'option de les reporter sur une année antérieure jusqu'à

trois ans, ou de les reporter à une année ultérieure indéfiniment, mais elles ne pourront être déduites que des gains en capital nets.

On peut donc utiliser les pertes en capital nettes réalisées dans une année précédente pour réduire ses gains en capital dans l'année courante. Ce faisant, vous réduisez le montant que vous pouvez faire exempter en vertu de votre exonération de gains en capital.

Cependant, l'exonération de gains en capital n'est pas le Pérou. En effet, celle-ci se trouvera malheureusement, réduite par votre perte nette cumulative sur placement (PNCP), ce qui représente le montant des frais de placement pour lesquels vous avez demandé une déduction dans l'année courante et dans les années précédentes depuis 1987 qui dépasse le total de votre revenu de placement réalisé au cours de la même période. En ce prévalant d'une déduction pour les frais de placement, démarche qui crée une PNCP ou qui l'augmente, vous réduisez autant le montant de votre déduction pour l'année en vertu de l'exonération de gains en capital. Nos élus ont inventé la PNCP pour empêcher les contribuables d'emprunter pour acheter des placements tels que des actions, lesquelles produisent des dividendes et qui ont un potentiel de plus-value. Pourquoi? Eh bien, sinon, comme les actions constituent une source de revenu, la loi vous permettrait alors de déduire de votre revenu imposable les intérêts de votre prêt, et de surcroît, vous ne payeriez aucun impôt sur les gains en capital de votre placement grâce à l'exonération cumulative de 100 000 \$ (à condition qu'il vous en reste). C'est pour cette raison que le gouvernement a créé la PNCP, car autrement les investisseurs pourraient bénéficier à la fois d'une exonération de gains en capital et d'une déduction pour les intérêts sur un prêt contracté en vue d'acheter des placements.

En résumé, le revenu de placement est imposé selon trois régimes

différents, la source étant le critère de différenciation. Dans cet article, la description des dispositions fiscales à l'égard du revenu de placement est simplifiée et d'une portée très générale. Si vous voulez savoir comment ces principes vous concernent personnellement, vous aurez intérêt à consulter un conseiller fiscal professionnel.

Les régimes du conjoint : une bonne façon de fractionner le revenu

Faire des versements RÉR au régime de votre conjoint peut être un élément de planification de retraite à long terme des plus intéressants. Mais tout d'abord, qu'est-ce au juste qu'un RÉR du conjoint? Il s'agit tout simplement d'un régime de retraite enregistré au nom de votre conjoint et auquel vous et votre conjoint pouvez faire des versements. (Notez que les conjoints de fait ne peuvent se prévaloir d'un tel régime.) L'objectif de l'opération est d'obtenir deux sources de revenu à la retraite plutôt qu'une seule. Le résultat est que l'impôt total à payer sur deux sources de revenu est habituellement inférieur à celui qui frapperait le même revenu total attribué à une seule personne. En outre, l'impôt sera encore plus réduit lorsque les deux conjoints pourront réclamer en déduction, à partir de 65 ans, le crédit pour revenu de pension à l'encontre des revenus d'annuité ou de FERR, acquis grâce à leur capital RÉR. Le régime du conjoint est particulièrement intéressant pour un couple dont une seule personne a occupé un emploi au cours des ans. Se prévaloir des versements au RÉR du conjoint peut se solder, à la longue, par des économies d'impôt appréciables, et pourtant beaucoup de gens négligent de le faire.

En voici un exemple éloquent. Si votre revenu est considérablement plus élevé que celui de votre conjoint et que votre plafond de versement RÉR est de 11 500 \$, vous pouvez, par exemple, faire votre

versement total (11 500 \$) au régime de votre conjoint, ou alors mettre 5 750 \$ dans le RÉR de votre conjoint et le même montant dans votre propre régime. En réalité, vous pouvez répartir les deux versements comme bon vous semble, à la condition que le total n'excède pas votre plafond de versement personnel. Vous pourrez ensuite obtenir une déduction sur votre propre revenu imposable pour le total des deux montants. Lorsque vous serez à la retraite, les revenus que produiront l'annuité ou le FERR acheté avec l'argent de votre RÉR seront imposés dans la déclaration de votre conjoint, vraisemblablement à un taux inférieur (si ses revenus sont plus faibles). Si vous avez plus de 71 ans et que votre conjoint n'a pas atteint cet âge et que vous avez toujours un revenu gagné, vous pourrez également continuer à faire un versement au RÉR de votre conjoint jusqu'à votre plafond personnel.

Quelques remarques cependant. Si vous divorcez, le RÉR de votre conjoint lui appartiendra alors en propre. Les versements au RÉR du conjoint ne conviennent donc qu'à un couple solide. De plus, il faut tenir compte des lois provinciales qui peuvent régir la répartition de l'actif lors d'un divorce. Enfin, vous ne devez pas mettre sur pied un RÉR pour votre conjoint avec l'intention de retirer l'argent à court terme, car la Loi de l'impôt sur le revenu stipule qu'advenant un désenregistrement du régime une année pendant laquelle un versement a été effectué ou pendant les deux années suivantes, le contribuable qui a fait le versement devra payer l'impôt sur la somme retirée à son propre taux marginal.

La plupart des transferts qu'on pouvait auparavant effectuer dans un RÉR ont été éliminés. Les transferts toujours permis sont ceux des allocations de retraite ou des indemnités de départ (sous réserve d'une limite 2 000 \$ par année de service plus 1 500 \$ par année avant 1989, lorsque l'employeur n'a pas

contribué à une caisse de retraite). De plus, une mesure temporaire du gouvernement permet de transférer au RÉR du conjoint 6 000 \$ par année des revenus de pension périodiques et ce, jusqu'à 1994. Donc, si vous comptez recevoir un revenu de retraite plus considérable que votre conjoint, il serait avantageux pour vous de transférer 6 000 \$ par année de prestations périodiques dans le RÉR de votre conjoint

jusqu'en 1994. Les prestations périodiques sont ici définies comme les prestations d'un régime enregistré de retraite ou d'un régime de participation différée aux bénéfices. Cette mesure vous permettra de répartir davantage vos revenus avec ceux de votre conjoint, ce qui devrait permettre une économie d'impôt au moment de la retraite.

Robert Décarie

Financial Foresight



*In this issue, the CJO*RCO is pleased to introduce what we intend to be a regular feature. Financial Foresight is a new column from the Ottawa offices of ScotiaMcLeod Inc and is written by one of the firm's investment executives, Mr Robert Décarie. Please note that any advice, commentaries and opinions offered in this column are strictly those of the author and are not necessarily endorsed by the CJO*RCO. As Mr Décarie himself says in his inaugural column, readers are advised to seek the advice of a qualified tax professional for further information about any topic presented in this or future issues.*

*We invite your comments. If there is an investment concern about which you might wish more detailed information, please drop us a line at the CJO*RCO and, who knows?, it might even become the subject of a future column.*

How your investment income is taxed

There are two ways you can earn income on your savings: first, by lending funds to a borrower in return for interest and the eventual repayment of your principal; second, through ownership of corporate stock, where you receive dividends that represent your share of the

company profits. When choosing your investments, you should be aware of the different ways in which your investment income is taxed, as this will greatly affect your after-tax rate of return.

All interest income is now fully taxable at your marginal tax rate. In addition, investments in debt obligations purchased on or after January 1, 1990, will be subject to an annual accrual commencing in 1990. Interest must be included in income on such obligations in the taxation year in which the anniversary date of the investment falls, even if the interest is not actually received. For this reason, many experts recommend that you hold as many of your interest income-producing investments as possible (including GICs, bonds and Treasury Bills) in your RSP, where the income earned will be sheltered from tax.

Dividend income, on the other hand, is eligible for a dividend tax credit, which means that dividend income produces a greater after-tax return than interest income. The dividend tax credit is calculated by the following formula: \$1 of dividend income is "grossed-up" by 25%. Federal taxes payable are based on the grossed-up amount. A credit is then calculated at 13.33% of the grossed-up dividend and is applied against your federal taxes payable. This means that, on



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average, for every \$100 of dividend income earned, you must earn \$130 in interest income to retain the same after-tax amount of \$69.95. Because dividend income receives favourable tax treatment, dividend-producing investments are usually best held outside a tax-sheltered environment, such as an RSP, so that investors can take advantage of the tax credit.

Capital gains are subject to a different method of taxation than are dividends and interest income. A capital gain results when your investment is sold at a price greater than the aggregate of its original costs and the costs of disposition. The amount by which your capital gains exceed your allowable capital losses is included in your income for tax purposes, and 75% of these gains are taxed at your marginal tax rate. However, the government has said that each individual is entitled to a \$100,000 lifetime capital gains exemption.

Allowable capital losses may be used to reduce taxable capital gains to zero. If your allowable capital losses for the year exceed your taxable capital gains, any excess of allowable capital losses can be carried back three years, or forward indefinitely, but may be applied only against net taxable capital gains. Net capital losses realized in prior years can be applied against taxable capital gains realized in the current year. However, by doing so, you will defer the use of the capital gains exemption for the year to the extent of the loss applied.

Your ability to claim a capital gains exemption is restricted by your cumulative net investment loss, or CNIL, which is the total amount of investment expenses claimed in the year and all preceding years since 1987, in excess of the total of your investment income for the same period. By claiming investment expenses that create or increase your CNIL, you reduce your ability to claim a capital gains exemption in that year. The government has introduced CNIL to avoid a situation in which you could borrow funds to

purchase an investment, for example stocks, that would yield a dividend and have the potential to increase in value. Because stocks produce an income, the interest on your loan could be deducted from your income for tax purposes and, in addition, you would pay no tax on any capital gain in your stocks due to the \$100,000 exemption (provided, of course, that you had not used it up). Therefore, the government has introduced CNIL to prevent investors from benefitting from both the capital gains exemption and the interest write-off at the same time.

In summary, there are three basic ways in which proceeds from investments are taxed. The descriptions of these methods in the foregoing article admittedly have been simplified and are presented in very general terms. If you have a specific concern about how one or more of the principles apply to your own portfolio, you should seek the advice of a qualified tax professional.

Spousal plans—an opportunity for income splitting

Making contributions to a spousal RSP can help significantly with your long-term retirement planning. First, let's look at what a spousal RSP is. As its name suggests, a spousal RSP is simply an RSP that is registered in the name of your spouse, and to which both you and your spouse can make contributions. (Note that, for our purposes, spouse does *not* include a common-law spouse.) The reason you would want to do this is to provide two streams of income during retirement. This is because, depending on income levels at the time of retirement, the taxes you as a family would pay on the two streams could be much lower than taxes paid on a single stream of income flowing to one person. Taxes would then be further reduced at age 65, when both people become eligible for the pension income tax credit for

income derived from an RSP annuity or RIF. Spousal plans are especially attractive for couples where only one person has been working over the years. Spousal plans can result in significant savings over the long term, but many people neglect to take advantage of them.

Consider the following example: If you earn considerably more than your spouse, and your annual contribution limit is \$11,500, you might consider contributing the entire \$11,500 to your spouse's plan, or half (\$5,750) to your spouse's plan and half to your plan. Any combination is possible as long as you do not exceed your own personal contribution limit. You can then claim the entire contribution as a tax deduction from your current income. When you retire, the income produced by the annuity or RIF purchased with your spouse's RSP will be taxed in the hands of your spouse, likely at a lower rate. Another benefit of setting up a spousal plan is that, if you are over the age of 71 but your spouse is under the age of 71, and you are still earning eligible income, you may contribute up to your maximum contribution limit to a spousal plan.

One caveat: in the event of a marriage breakdown, the spousal RSP now belongs to your spouse, so a spousal plan should be considered only when a marriage is stable. This should also be considered with an eye to any provincial laws governing the division of assets in the event of a marital breakdown. Also, you should not contribute to a spousal plan with the intention of cashing in the RSP within a few years because, according to the Income Tax Act, if the holder of a spousal RSP deregisters it during a year in which a contribution was made, or in the following two years, the contributing spouse will have to pay tax on the money withdrawn at his or her tax rate.

New RSP legislation has eliminated most of the rollovers of funds into an RSP that were previously allowed. Those currently

allowed are monies paid as a retirement allowance or severance pay (limited to \$2,000 per full or part year of employment, plus \$1,500 for each year prior to 1989 when no contribution was made to the pension plan by the employer); a lump sum rollover from a pension plan; and, as an interim measure, the

government is allowing a transfer of \$6,000 in periodic pension income per year to a spousal RSP until 1994. This means that if you anticipate having more retirement income than your spouse, you can transfer \$6,000 annually to the spousal RSP until 1994. "Periodic pension income" in this case is defined as payments

received from a Registered Pension Plan or a Deferred Plan. This will allow you to split more of your retirement income with your spouse, which may result in your paying less tax overall once you retire.

Robert Décarie

Vision Care News



Actualité oculo-visuelle

An address for further information, where provided with the source material, is included for each item appearing in Vision Care News.

President-elect addresses Montreal convocation

Dr Margaret Hansen des Groseilliers, CAO's President-elect (pictured here at the podium), was a featured speaker at the 1992 convocation ceremonies of l'École d'optométrie, Université de Montréal, held in January. On behalf of President Dr Jean-Marie Rodrigue, Dr Hansen des Groseilliers offered CAO's congratulations to the Class of '92 and also presented the CAO Award of Excellence in Low Vision to class member Dr Josée Falardeau.



(Photo: Michel Steben)

Atlantic CE program set

On July 3 and 4, Newfoundland plays host to the 1992 Atlantic Optometric Continuing Education Symposium. Featured speakers include Dr Michael Bense, Acting Chief of Ophthalmology at the St John's General Hospital, on "retina/vitreous rounds"; Harriet Stein, a management and communications consultant, on successful contact lens practices; and Dr Bruce Grene, Clinical Assistant Professor at the University of Kansas School of Medicine, on ocular surface disease.

The program takes place at the Radisson Hotel in St John's. Registration—\$150 before May 15; \$190 after May 15—is limited to 125 and will be on a first-come, first-served basis only. Information and registration: Nap Dupuis, Executive Director, Newfoundland Association of Optometrists, PO Box 2284, Station C, St John's, NF, A1C 6E6. Tel (709) 368-0383; fax (709) 368-4139.

Waterloo CE program

The School of Optometry, University of Waterloo, has announced that its annual continuing education program will be held June 5 and 6 with an offering of over 40 courses covering a wide range of topics. Information: Dr Jeff Hovis, School

of Optometry, University of Waterloo, Waterloo, ON, N2L 3G1. Tel (519) 885-1211, ext. 3178; fax (519) 746-7937.

New AAO inductees

The Board of Directors of the Vision Institute was pleased to announce in January that one of its staff members, Dr Catherine Chiarelli, was inducted as a Fellow of the American Academy of Optometry (FAAO) at the Academy's 1991 Annual Meeting in December.

Dr Chiarelli is a graduate of the School of Optometry, University of Waterloo, and also completed a residency program at the University of Alabama's School of Optometry.

She has been a member of the Vision Institute's staff for several years and is currently Chief of Paediatrics and Binocular Vision at the Institute's principal clinic in Toronto. Further information: Vision Institute, 815 Danforth Avenue, Suite 301, Toronto, ON, M4J 1L2. Tel (416) 461-6222.

In addition to Dr Chiarelli, Dr Hélène Kergoat of l'École d'optométrie, Université de Montréal; Dr Douglas Puttaert of Steinbach, MB; and Dr Paul Roth of Hamilton, ON, were inducted into the Academy at its December 1991 meeting.

Our congratulations to all new Fellows. For information about

fellowship in the Academy: American Academy of Optometry, 4330 East-West Highway, Suite 1117, Bethesda, MD, 20814-4408, USA. Tel (301) 718-6500; fax (301) 656-0989.

Study targets seniors and mobility

Using 40 senior citizen volunteers, a University of Waterloo team is aiming to find ways and means of helping partially sighted geriatric patients make full use of their vision.

The study, which is being jointly conducted by Waterloo's schools of Optometry and Kinesiology under principal researcher Dr David Elliott of the School of Optometry, seeks to understand the relationship between vision and mobility.

An article in the January 28, 1992, *Ottawa Citizen* describes study participants: They "walked under dim and bright lighting, sometimes with their heads purposely tilted to upset their sense of balance. They stepped up and down curbs, negotiated uneven paths littered with obstacles and even found their way through a maze of polystyrene blocks."

Incredibly, the last time a mobility and vision study of this nature was carried out, according to Dr Elliott, was about 40 years ago and it used only blind subjects. In the Waterloo study, a total of 40 senior volunteer participants—20 with normal vision and 20 with macular degeneration—are participating.

A chief goal of the study will be to identify means by which seniors can use their existing visual abilities to increase their mobility, including visual aids and architectural adaptations that might be recommended (for example, edging staircase and escalator steps with white lines, and increasing the contrast in colour schemes used in public spaces, particularly well-travelled ones).

Further information is available from Dr Elliott at the School of Optometry, University of Waterloo, Waterloo, ON, N2L 3G1, Canada.

Ocular signs of Marfan's syndrome

Marfan's syndrome is a serious genetic disorder of the body's connective tissue, causing stretching or weakening of body fibres and tissues that can lead to severe disability or even death. Heart and blood vessels in particular are almost always affected in one or more of several ways: Heart valves can be oversized and "floppy", which may actually cause brief reverse blood flows during the beating process; the brief reversal creates a detectable sound that is heard as a "murmur" through a stethoscope. The aorta might also be split in places, allowing blood seepage into the chest or abdomen. In severe cases, the aorta can stretch to the point of rupturing.

In addition, the body's musculoskeletal structure can provide several indicators: curvature of the spine; loose joints; an abnormally shaped chest; disproportionately long limbs, fingers and toes; and a high arched palate.



Dr Kwan-Leung Chan, a cardiologist with the University of Ottawa's Heart Institute, identified a key difficulty with Marfan's syndrome in an article that appeared in the May 1, 1989, issue of the *Canadian Medical Association Journal*: "Time and time again, I've heard of cases that were diagnosed only after something catastrophic happened. ... The big thing is always to be mindful of the disease. If anyone has one of the four signs, always think of it." (The four signs include the ocular indicators, dilatation of the aorta, skeletal disproportion and a family history of the disease.)

The ocular manifestations of

Marfan's syndrome (reported in the *American Journal of Medical Genetics*, 1988;29:581-94) can include ectopia lentis (a major manifestation), severe nearsightedness, a flat cornea, an elongated globe, an off-centre dislocation of the lens of the eye, myopia and retinal detachment. Says UK optometrist David Cartwright, "Those [Marfan patients] who do not deviate very far from the normal ... may first present to the optometrist, either as a routine first visit in childhood or later with visual problems. The signs to note are obviously the ocular ones together with the marked skeletal abnormalities. The complaint may be one of blurred vision in one or both eyes or perhaps uniocular diplopia. The visual defects should be recognized and treated as early as possible, particular importance being given to ensuring a good standard of visual acuity in both eyes and alerting the patient to the possibility of detachment of the retina. It would be wise to encourage the patient to avoid contact sports to lessen the possibility of detachment and lens dislocation."

Although not yet "curable", Marfan's syndrome is treatable if detected early enough. Treatments and preventive measures include the use of preventive antibiotics during surgery, artificial heart valves and anti-clotting medication, laser therapy for detached retinas, and hormonal treatments for spinal curvature and overall growth.

In Canada, there is an organization whose mandate includes education and support for practitioners and patients, as well as their family members. The Canadian Marfan Association supports and fosters research, and encourages the establishment of self-help groups across the country.

For further information about Marfan's syndrome or the Association: Ms Shannon Townsend, Executive Director, Canadian Marfan Association, Suite 205, 1489 Merivale Road, Nepean, Ontario, K2E 5P3. Tel (613) 226-1761.

IACLE receives strong commitment of industrial support

The International Association of Contact Lens Educators (IACLE) has received a commitment from Bausch & Lomb (B&L) of \$1 million in corporate support over the next five years. In addition, a further \$225,000 has been promised by CIBA Vision over the next three years, plus \$100,000 from Allergan and Johnson and Johnson over the next two years.

The IACLE is a voluntary, non-profit organization "dedicated to the worldwide improvement of contact lens education". Recently, Professor Brien Holden of Australia was elected as its president. Canada is also represented on the organization's new Board of Directors by Dr Desmond Fonn of the University of Waterloo School of Optometry, who was elected vice president; and Dr Luigina Sorbara, who was elected assistant secretary at the organization's recent meeting in Geneva.

Although based in Australia, the

IACLE views its mandate as global. To that end, IACLE has formed no fewer than five regional offshoots in Africa and the Middle East, Asia and the Pacific, Europe, Latin America, and North America, where it is affiliated with the Association of Optometric Contact Lens Educators (AOCLE).

In a recent news release, IACLE Secretary Debbie Sweeney says the industrial support will be mutually beneficial. "The sponsoring companies realize the benefits of investing in education and have encouraged us to develop education that will encourage the safe and effective use of their products."

For further information: Debbie Sweeney, IACLE Secretary, Cornea and Contact Lens Research Unit, IACLE Secretariat, PO Box 328, Randwick, NSW 2031, Australia. Tel (612) 399-0311; fax (612) 399-9221.

U of T health publication

Health News is a bi-monthly bulletin of health information published by

the University of Toronto's Faculty of Medicine. Their most recent issue (February 1992) includes items on aging and its effects, both physiological and psychological, asthma and "relieving caregiver stress".

One-, two- or three-year subscriptions (at \$16.95, \$29.95 and \$41.95 respectively) are available by sending cheque or VISA number to *Health News*, Faculty of Medicine, Medical Sciences Building, University of Toronto, Toronto, ON, M5S 1A8. Tel (416) 978-5411; fax (416) 978-7552.

New technology for eye topography

A California company has developed a method and apparatus for obtaining a computer mould of the front surface of the eye.

Vision Metrics uses a process that projects a calibrated light pattern onto an eye that has had a fluorescent substance instilled into the tear layer. The system then acquires an opto-electronic image of the fluorescent light pattern, which is then computer analyzed and used to

LIFE HAS ITS UPS AND DOWNS

All of us experience them at one time or another. How you deal with the highs and

lows determines your state of mental health. Striking a balance means

finding a happy medium between work, leisure,

responsibilities and personal

time. There will be imbalances

from time to time but your mental health will keep you on an even keel all the time.

Strike a balance in your life.

Celebrate Mental Health Week May 4 - 10, 1992

CANADIAN MENTAL HEALTH ASSOCIATION 

MON ÉQUILIBRE

MON MILIEU DE VIE



L'ASSOCIATION
CANADIENNE
POUR LA
SANTÉ MENTALE

generate "an accurate and high resolution surface elevation map."

The system (if it sounds like LandSat imaging, it's no accident) obtains its measurement information in x, y and z coordinates, the same process used in producing land survey maps from aerial photos and satellite images.

Further information: Vision Metrics, Inc., 330 Willow Road, Menlo Park, CA, 94025, USA. Tel (415) 326-2133; fax (415) 328-8144.

Names and faces at CAO

Chantal Wall has been Executive Secretary at CAO for the past six years.

Before joining the office staff, Chantal worked from 1983 to 1986 as Executive Secretary—in what was essentially a one-person office—for the Canadian International Construction Corporation (CICC), a company owned by seven leading engineering and construction companies that have worked in every continent of the world.

Born in Kenitra, Morocco, Chantal emigrated to Canada with her family in 1958. After staying in Toronto for two years, the family moved to Montreal, where Chantal lived for the next 17 years until she married and her husband was transferred to Ottawa. Chantal is fluent in French, Spanish, English and, occasionally, has been heard to mutter obscure phrases in Hakatia, a Moroccan street dialect.

Chantal graduated from Vanier College in St Laurent, Quebec, in 1973 with an Honours diploma in Social Sciences. She also studied psychology at McGill University and holds a word-processing diploma from Ottawa Computer Companies.

Chantal's work experience is as multifaceted as her personal background. From 1971 to 1973, she was a part-time model for Holt-Renfrew. She then served a year with Air Canada as a model and flight attendant. From 1974 to 1975, she was Assistant to the Executive

Director of a Pointe Claire, Quebec, office employment agency, Staff Overflow Service. She joined another company as a secretary for six months, leaving when she was transferred with her husband's company to Ottawa. In 1976, she served as Secretary to the Ottawa YM/YWCA's Housing Department.

A year later, Chantal embarked on the toughest assignment of her employment career—spending four years as a full-time mother and homemaker to her two children. Then in 1981, she rejoined the salaried work force as a secretary to the branch manager of Ottawa's Mutual Life Assurance Company.

Chantal is a member of the Spanish Club of Ottawa and the Ottawa Judo Club. Her hobbies include dancing, international cooking, oil painting, ceramics, reading and fitness. She and her husband, Jacques (who was born in Tangiers), have two children, Bill (15) and Stephanie (13). Two years ago they added a terrier named Ian to the household.

The photo shows three generations on the maternal side of the family. Chantal is on the left; just visible behind her is her daughter, Stephanie; on the right is Chantal's



mother, Alegria (which Chantal advises is Spanish for "joyous person").

Call for papers—APOC 1993

APOC 1993, the 9th Asian Pacific Optometric Congress, is inviting papers in the following areas: contact lenses, myopia, paediatric eye care, glaucoma, the Asian eye, clinical measurement and clinical practice.

The Congress is slated for April 8 to 14, 1993, in Hong Kong, with a satellite meeting planned for Beijing in the People's Republic of China after the APOC Congress. For further information on submitting papers: Dr Brian Brown, Chairman, Papers Committee—APOC 1993, Optometry Section, Department of Diagnostic Sciences, Hong Kong Polytechnic, Hong Kong. Tel (852) 766-5548; fax (852) 362-5440.

For general information: Dr Damien P Smith, Congress Secretary, APOC 1993, 7 Cookson Street, Camberwell 3124, Victoria, Australia. Tel (613) 882-9122; fax (613) 882-6203. (Note: Australia's country code must also be dialled before the number. Check your telephone directory for overseas dialling instructions.)

W-J Canadian sales skyrocket in 1991

Wesley-Jessen's 1991 annual report showed an incredible 80% increase in its Canadian sales for the year ending December 31, 1991. In a recent news release, Mark Jolly, W-J's Director of Canadian Operations, was non-specific, but cited "a host of factors" contributing to the company's success in Canada.

For 1992, the company continues to forecast growth and also plans to introduce several new products. At present, having discontinued their distribution agreement with PCL, W-J's products are available in Canada only from the Mississauga national office: Wesley-Jessen (Canada) Inc, 6685 Millcreek Drive,

Unit 5, Mississauga, ON, L5N 5M5.
Tel 1-800-263-2630.

**1992 ODR datum erratum
or why your appointments are
now all showing up one day early**

Thank you. To all those optometrists who have pointed out that the 1992 edition of the *Optometrist's Desk Reference* includes a calendar for 1992 that, as of midnight February 28, became wrong for the balance of the year. Our printer, who was asked to put a 1992 calendar on that page (48), can't explain why the calendar chosen, unlike the year itself (a leap year), omits Saturday February 29, makes it instead Saturday March 1, and thus makes every subsequent date on the calendar fall one day earlier than it really does.

Our printer *is* unhappy about this.

To make a long story short, ignore the 1992 calendar in the ODR and please accept CAO's apologies for the error.

Atlantic action

Spring fever arrived early on Canada's east coast. Three of our member associations in the Atlantic provinces have moved, and the fourth has a new fax number. Please note the following changes:

New Brunswick Association of Optometrists: Fax (506) 450-1271

Nova Scotia Association of Optometrists: Comp 83, Cariboo Wilds, RR 4, Lower Sackville, NS, B4E 1S2 Tel (902) 865-0361 / Fax (902) 425-6265

PEI Association of Optometrists: 111 Pownal Street, PO Box 2487, Charlottetown, PEI, C1A 3W4 Tel (902) 566-4418 / Fax (902) 566-4694

Newfoundland Association of Optometrists: PO Box 2284, Station C, St John's, NF, A1C 6E6 Tel (709) 368-0380 / Fax (709) 368-4139

Heaven on earth

It's hard to imagine that looking at something as breathtakingly beautiful as Lake Louise, Alberta, can be harmful to our eyes. Harmful because of the invisible presence of UV radiation.

Laboratory studies have shown that UV radiation may be a contributing factor in the development of various vision problems.¹ But you can help ensure that your patients' eyes are protected from this unseen enemy.

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**Give your patients the UV
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And now, ULTRABLOC™ is a standard feature on CIBASOFT®, the most popular daily wear spherical lens, when you order CIBASOFT ULTRA.™

1. Studies available on file.

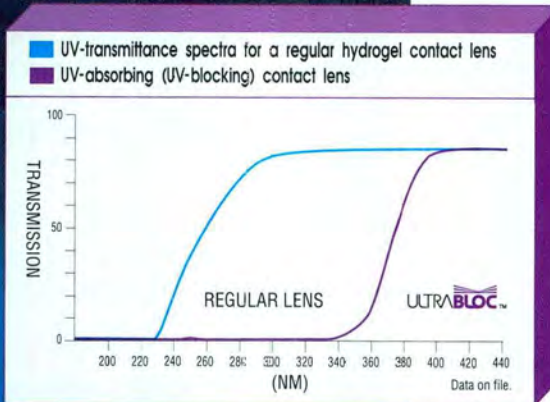


can be hard on our eyes.

ULTRABLOC™ - for effective, convenient UV protection.

ULTRABLOC™ protects without affecting normal visual acuity, colour distinction, or lens comfort.

- Covering the same lens area as our current tint, ULTRABLOC™ provides consistent protection over the coated area of the lens, regardless of power and lens thickness.
- Protects the cornea and retinal tissue by effectively blocking UV-B radiation in the 290-320nm range.
- Permanent bonding to the lens matrix eliminates leaching.
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Calendar



Calendrier

For further information about events sponsored by the Canadian Association of Optometrists, unless otherwise indicated, contact the CAO office in Ottawa. For events sponsored by a provincial association or society of optometrists, or for international events, contact the hosting organization identified in the item.

1992

May 17-19: American Academy of Optometry, Continuing Education Program, Moat House International Hotel, Stratford-upon-Avon, Warwickshire, England. Information: American Academy of Optometry 4330 East-West Highway Suite 1117 Bethesda, Maryland, 20814-4408 USA Tel (301) 718-6500

May 21-23: British Contact Lens Association (BCLA), Harrogate 1992, Annual Clinical Conference and Trade Exhibition, Harrogate International Centre, Harrogate, North Yorkshire, England. Information: Vivien Freeman, BCLA PO Box 1719, London, NW3 4PW, England

June 14-19: 6th International Congress of the South African Optometric Association, Sun City, Bophuthatswana. Information: Congress Secretary SA Optometric Association PO Box 3966 Pretoria, 0001, South Africa Tel (012)-322-1310 Fax (012)-322-1313

September 27 - Oct 3: 6th International Congress of the Australian Optometrical Association, Hyatt Regency Resort, Coolumb, Queensland (a beach resort on the Great Barrier Reef), Australia. Information:

Australian Optometrical Association
204 Drummond Street
PO Box 185
Carlton South, Victoria 3053
Australia
Tel (03) 663-6833
Fax (03) 663-7478

1993

April 8-14: 9th Asian Pacific Optometric Congress (APOC), Hong Kong, satellite meeting following the the congress in Beijing, People's Republic of China. Information: Dr Damien P Smith APOC 1993 Congress Secretary 7 Cookson Street Camberwell 3124 Victoria, Australia

Canada Calendar 1992

Contact the sponsoring association for confirmation or further information.

BC Association of Optometrists
125 — 10451 Shellbridge Way
Richmond, BC, V6X 2W8
Tel (604) 270-9909
Fax (604) 270-4950

May 31: Council Meeting (Ferne)

June 1-2: 1992 Annual General Meeting (Ferne)

September 26-27: Okanagan/Kootenays Continuing Education Seminar

Alberta Association of Optometrists

11830 Kingsway Avenue
Edmonton, AB, T5G 0X5
Tel (403) 451-6824
Fax (403) 452-9918

May 14-17: Continuing Education Program, Skyline Hotel (Calgary)

June 18-20: AAO Registration Exams (Edmonton)

September 26-27: Annual General Meeting, Capri Centre (Red Deer)

Saskatchewan Association of Optometrists

117 — 3rd Avenue South, Ste 4
Saskatoon, SK, S7K 1L7
Tel (306) 652-2069
Fax (306) 244-7743

May 6: Council Meeting (Saskatoon)

May 6-8: 59th Annual Continuing Education Program, University of Saskatchewan (Saskatoon)

May 7: Special General Meeting, Sheraton Cavalier Hotel (Saskatoon)

August (TBA): Sandpail Challenge Golf Tournament (Melfort)

September 12: Council Meeting (Saskatoon)

November 12: Council Meeting (Regina)

November 13-14: 83rd Annual General Meeting (Regina)

Manitoba Optometric Society

878 — 167 Lombard Avenue
Winnipeg, MB, R3B 0V3
Tel (204) 943-9811
Fax (204) 943-1208

October 17-18: Semi-Annual Convention, Victoria Inn (Brandon)

Ontario Association of Optometrists

290 Lawrence Avenue West
Toronto, ON, M5M 1B3
Tel (416) 256-4411
Fax (416) 256-9881

September 18-20: Semi-Annual Meeting, Queen's Landing (Niagara-on-the-Lake)

Association des optométristes du Québec

133, ouest de la Commune, 4e étage, Vieux Montréal, Montréal (Québec), H2Y 2C7
Tél (514) 849-8051
Fax (514) 849-7201

October 3-4: 14th International Contact Lens Symposium, Québec City Convention Centre, Québec Hilton (Québec City)

New Brunswick Association of Optometrists

20 Woodstock Road
Chamber of Commerce Building
Fredericton, NB, E3B 2H3
Tel (506) 458-8759,
Fax (506) 450-1271 (phone first)

June 5-6: Council Meeting (Fredericton)

September 16-17: Council Meeting (Moncton)

September 17-19: 1992 Annual General Meeting (Moncton)

Nova Scotia Association of Optometrists

Comp 83, Cariboo Wilds
RR4, Lower Sackville, NS, B4E 1S2
Tel (902) 865-0361
Fax (902) 425-6265

October 31-November 1: 1992 Annual General Meeting (Location TBA)

PEI Association of Optometrists

111 Pownal Street,
PO Box 2487,
Charlottetown, PEI, C1A 3W4
Tel (902) 566-4418
Fax (902) 566-4694

November 7: 1992 Annual General Meeting (Location TBA)

Newfoundland Association of Optometrists

PO Box 2284, Station C,
St John's, NF, A1C 6E6
Tel (709) 368-0380
Fax (709) 368-4139

July 3-4: Atlantic Optometric Continuing Education Symposium, Radisson Hotel (St John's)

September 25-26: 1992 Annual General Meeting (St John's)

Canadian Association of Optometrists

Suite 301 — 1785 Alta Vista Drive
Ottawa, ON, K1G 3Y6
Tel (613) 738-4412
Fax (613) 738-7161

June 19-23: American Optometric Association 1992 Congress, Hôtel la Reine Elizabeth (Montréal)

June (TBA): Interaction 1992, Hôtel la Reine Elizabeth (Montréal)

June 21-22: COETF and CAO Council Meetings, Hôtel la Reine Elizabeth (Montréal)

October (TBA): COETF and CAO Council Meetings, CAO Boardroom (Ottawa)

Wanted: Optometrist

to practice half days, 3-4 days per week
in St Vincent, West Indies.

Applicants should have Canadian qualifications which are in force and up to date. Full equipment and office are available. Contact lens experience is preferred.

Salary and benefits negotiable but work visa is included.

Please note that this is a full-time position to be reviewed annually, with leave of one month to be arranged at a mutually agreeable time.

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Box 1-92

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K1G 3Y6

The School of Optometry, University of Waterloo

is celebrating its 25th anniversary in the Fall of 1992.

The celebration will take place on November 13-14. Delegates will be able to participate in a variety of activities organized by the University during this homecoming weekend. A wine and cheese reception will be held on Friday evening, November 13. The formal ceremony will begin next morning. Afterwards, the option of attending several Continuing Education courses offered by eminent speakers will be provided. This year, the 4th Clair Bobier Lecture will also be presented at the same time.

Watch for more details in the near future and come and help us celebrate the many events of this most special weekend!

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Pour chaque optométriste • Flexible • Une semaine entière d'un seul coup d'oeil • Couleur prédéfinie pour chaque type d'intervention • Listes d'attente.

✓ **Examen optométrique**

Souple et adaptable • Facile de créer des formulaires d'examen personnalisés • Enregistre directement les données provenant d'instruments optométriques.

✓ **Traitement de texte**

Fonctions d'édition • Dictionnaire orthographique • Fonction d'aide intégrée • Création de documents type.

✓ **Notes de service**

Conserve une liste de tous les services à faire par rapport à un patient donné • Imprime la liste de tâches quotidienne.

✓ **Rappels**

Génère des listes de rappel, des étiquettes et des lettres de rappel • Permet de régler la fréquence des rappels.

✓ **Facturation aux patients**

Rapport complet de toutes les transactions • Traite, classe et met à jour les relevés de compte, les quittances et les soldes • Relié au module Inventaire.

✓ **Tarification automatique**

Calcule automatiquement le prix des lentilles optométriques et cornéennes en fonction de la prescription • Relié aux modules Dossiers Patient et Inventaire.

✓ **Inventaire**

Établit des dossiers pour tous les fournisseurs • Gestion des stocks • Mise à jour automatique des achats, réceptions et retours • Catalogue des produits de chaque fournisseur.

✓ **Comptes fournisseurs**

Maintient un relevé précis des comptes fournisseurs • Relié au module Inventaire.

✓ **MEDSYS^{MD} (Facturation à la Régie)**

Permet d'établir une liaison électronique directe entre votre clinique et la Régie de votre province • Traite toutes les réclamations, y compris celles de nature personnelle ou auprès de tierce parties • Vérifie les versements • Liste pré-établie de codes de diagnostic.

✓ **Rapports et sélections**

Permet de définir les rapports qui serviront à maintenir à jour toutes les données de votre clinique • Très souple.

✓ **Patient Records/Files**

Patient files • Demographics • Records for each optometrist, referral doctors and general practitioners.

✓ **Appointment Scheduling**

Provides a schedule for each optometrist • User-definable • A week at a glance • Color-coded procedures • Books families & groups easily • Cancellation lists.

✓ **Examinations**

User-definable • Easy to create personalized exam forms • Data from electronic ophthalmic equipment can be entered directly to the exam form.

✓ **Word Processing**

Includes most standard editing features • Spell checking • On-line help • Master documents for repeated use.

✓ **Tagging/Memos**

Keeps a task list for each patient • Daily task lists can be printed to ensure that no service or action is overlooked.

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Generates recall lists, labels and letters from the patient database • Makes it possible to set the frequency of recalls.

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Records all direct patient billings • Processes patient receipts & statements • Handles aged accounts receivable • Linked to Inventory module.

✓ **Auto-Lens Pricing**

Automatically calculates ophthalmic lens and contact lens prices according to specifications • Linked to Patient Records and Inventory modules.

✓ **Inventory Control**

Creates records for all suppliers • Maintains accurate inventory statistics • Automatic update when purchasing, receiving and returning items • Includes supplier catalogs.

✓ **Accounts Payable**

Keeps accurate records of supplier accounts • Linked to Inventory module.

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Atlantic Optometric Continuing Education Symposium 1992

**July 3, 4
Radisson Hotel
St. John's, NF**

LECTURES — Friday, July 3

**9:00 am: "Retina / Vitreous Rounds"
(3 credit hours)**

Dr Michael Bense, MB, ChB, FRCSC
Retina and Vitreous Specialist
Acting Chief of Ophthalmology
General Hospital, St. John's, NF

**1:30 pm: "There's more money to be made in
Optometry than ever before"
(Special emphasis on contact lens
practice)**

Ms Harriet Stein
Management / Communications Consultant
Baltimore, MD
(Sponsored by Bausch & Lomb)

LECTURES — Saturday, July 4

**9:00 am: (1) "Want to increase your practice
gross? Ten steps for success"
(2) "How to increase your optical
sales"**

Ms Harriet Stein
Management / Communications Consultant
Baltimore, MD

1:30 pm: "Ocular Surface Disease"

Dr Bruce Grene, MD
Private Practice Ophthalmology
Fellowship, Harvard Medical School
Corneal and External Disease
Clinical Assistant Professor
University of Kansas, School of Medicine
(Sponsored by Allergan Humphrey)

SOCIAL PROGRAM

Wine and Cheese Reception: Friday, July 3
4:30 - 9:00 pm / Radisson Hotel
Co-sponsored by Commercial Suppliers
Display of Instruments

NOTE: There are only 125 seats. The first registrations returned will receive seating.

Total symposium cost: (Before May 15) \$150.00 / (After May 15) \$190.00

Send cheque and registration (Name, address, telephone number) to:

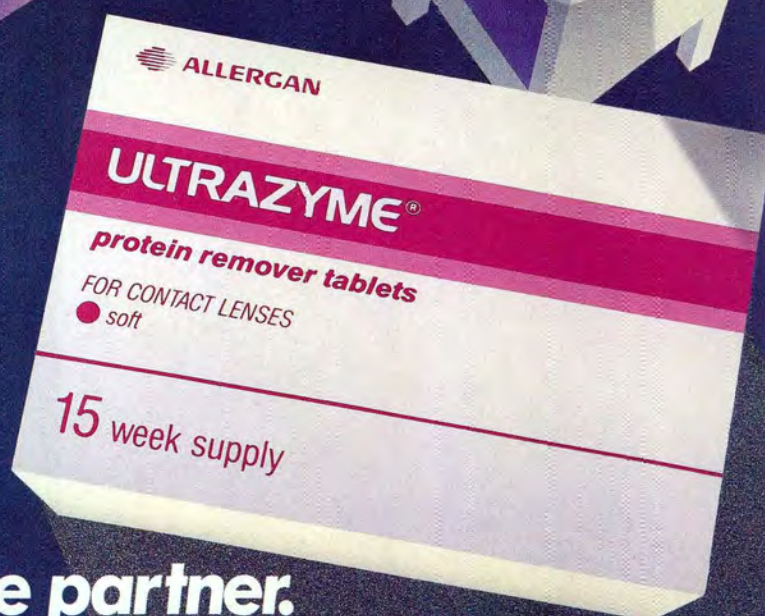
Nap Dupuis, Executive Director
Newfoundland Association of Optometrists
PO Box 2284, Station C
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(Make cheques payable to: Atlantic Optometric Continuing Education Symposium)

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