

## MAILBOX

### Diagnosis of external ocular infections: microbiological processing and interpretation

EDITOR,—I read with interest the recently published article by Pinna *et al.*<sup>1</sup> and compliment the authors for bringing to light the important issue of external ocular infections associated with coagulase negative staphylococci (CoNS). Ocular microbiologists rarely pay attention to the speciation of this group of bacteria and various species involved in ocular infections are generally passed off as *Staphylococcus* species or CoNS. Apart from speciation, this group of staphylococci needs special attention with respect to their role in pathogenicity. Generally, *S epidermidis* and other CoNS along with corynebacteria and propionibacteria are normal commensals of the conjunctival sac and lids; therefore samples from the external ocular surface resulting in a light growth on primary solid culture medium like blood agar or from a thioglycolate broth, are more likely to be associated with contamination.<sup>2</sup> In our laboratory and many others across the world, a bacterial isolate (more so a known commensal organism) from corneal scrapings or conjunctival/lid swabs is considered significant if it is consistent with the clinical signs and fulfils any one of the following criteria: (1) results of direct smear of the sample are consistent with culture; (2) the same organism is grown in more than one medium; or (3) the same organism is grown from repeated specimens. However, Pinna *et al.*<sup>1</sup> in their article, have not indicated adherence to any such criteria while selecting isolates for their study, though they have labelled the 55 isolates tested by them as "clinically significant". Their methodology of including just two media (thioglycolate broth and Sabouraud's dextrose agar) as primary culture media also does not conform to the recommended methods of microbiological investigation of blepharitis, conjunctivitis, and keratitis.<sup>3</sup> Though the authors did not intend to determine the pathogenicity of CoNS in external ocular infections, the methodology details provided by them can be misleading. Another concern raised by their article is the interpretation of bacterial susceptibility testing by agar disc diffusion (Kirby-Bauer method). The disc diffusion technique requires labelling of bacteria as resistant, sensitive, or intermediate. The authors have not clarified the way the "intermediate" group was dealt with, or was no such group noticed in any of the 55 isolates tested by them? Similarly, the reason for testing susceptibility to penicillin is far from clear since CoNS are known to be resistant to penicillin and penicillin is not commonly used to treat external

ocular infections. Moreover, much valuable data could have been obtained by determining the minimum inhibitory concentration of the antibiotics against CoNS.

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- 1 Pinna A, Zanetti S, Sotgiu M, *et al.* Identification and antibiotic susceptibility of coagulase negative staphylococci isolated in corneal/external infections. *Br J Ophthalmol* 1999;83:771-3.
- 2 Andrew J, Grando D. Laboratory diagnosis of eye infection. In: Lee N, ed. *Clinical microbiology update programme* (No 33). UNSW, Australia: NSW branch of ASM and the School of Microbiology and Immunology, 1992.
- 3 Jones DM, Liesegang TJ, Robinson NM. Laboratory diagnosis of ocular infections. In: *Cumulative techniques and procedures in clinical microbiology* (Cumitech 13). Washington, DC: American Society of Microbiology, 1981.

### Reply

EDITOR,—We thank Dr Sharma for her interest in our article on the identification and antibiotic susceptibility of coagulase negative staphylococci (CoNS) isolated in corneal/external infections. Apart from being a common component of the normal ocular flora, CoNS may occasionally be important ocular pathogens and cause chronic blepharitis, acute conjunctivitis, and suppurative keratitis.

As stated by Dr Sharma, a bacterial isolate from corneal scrapings or conjunctival/lid swabs is generally considered significant whenever there is (1) growth in one medium with consistent direct microscopic findings, or (2) growth of the same organism on two or more media, or (3) the same organism is grown from repeated specimens. However, when a bacterial isolate is consistent with the clinical signs, isolation of the organism even from a single medium can be considered significant. In our study, corneal scrapings for Gram stain were performed only on the patients with suppurative keratitis. In all cases the Gram stain showed the presence of grape-like clusters of Gram positive cocci. Follow up cultures performed about 12 hours after the last dose of medication showed eradication of the infecting organism in all 45 patients. According to our and other authors' experience (Leventer DB, presented at the AAO Annual Meeting, San Francisco, 1997), thioglycolate broth is an adequate, cost effective, primary culture medium for the detection of aerobic and anaerobic bacteria in external ocular infections, especially when the patients show clear signs and symptoms of infection.

Antibiotic susceptibility tests were determined by agar disc diffusion (Kirby-Bauer method), a technique which labels bacteria as "resistant", "intermediate", or "sensitive". Although we found a handful of "intermediate" isolates (Table 1), our main concern was to draw attention exclusively to the large number of "resistant" strains. Indeed, in Table

2 of the published article we reported the ratio "resistant" isolates/total isolates. Dr Sharma's criticism on this point is difficult to understand, since in a recent paper she and her co-workers<sup>1</sup> included "resistant" and "intermediate" strains in a single group labelled as resistant, instead of maintaining the distinction between the two groups.

Susceptibility to penicillin was tested because our microbiologists are involved in a study on resistance to  $\beta$  lactams in CoNS isolated from different sites (blood, eye, etc). As part of this survey, penicillin resistant isolates were also tested for resistance to methicillin (data not shown).

The Kirby-Bauer method is generally recommended for routine antibiotic susceptibility testing of bacteria.<sup>2</sup> On the other hand, this method was also used extensively by Sharma and co-workers in their paper.<sup>1</sup> Determining the minimal inhibitory concentration may provide more useful information, especially while testing clinically relevant antibiotics such as vancomycin, teicoplanin, and methicillin.

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- 1 Garg P, Sharma S, Rao NG. Ciprofloxacin-resistant *Pseudomonas* keratitis. *Ophthalmology* 1999; 106:1319-23.
- 2 Jones DB, Liesegang TJ, Robinson NM. *Cumitech 13: laboratory diagnosis of ocular infections*. Washington, DC: American Society for Microbiology, 1981.

### Laser pointers can cause permanent retinal injury if used inappropriately

EDITOR,—The authors previously published a brief report in a widely circulated ophthalmic review periodical (*Eye News*) on the potential risk of permanent injury from the inappropriate use of laser pens.<sup>1</sup> The article had been prompted by two events—firstly, a flood of reported cases in the popular media of the "blinding" effects of laser pens pointed at drivers, soccer goalkeepers, and members of the general public, and, secondly, the referral to our department for clinical assessment of police and fire service personnel who had been exposed to laser pen light. Examination of the clinical cases demonstrated no permanent injury. We were also asked to review data determined for a number of laser pens that had been subjected to analysis by Edinburgh Environmental and Consumer Services Department. Many of these laser pens were mislabelled, either by exhibiting American standard classification (different from European), or simply by being inaccurately classified. Subsequently, a number of laser pens have been sent to us for examination, pending police investigations. Many of these lasers are class 3B devices according to the European laser classification, and are therefore considered potentially hazardous. None the less, we concluded that the normal blink and aversion response would prevent retinal damage from transient exposure. However, it had also been brought to our attention that the cost of these laser pens, and laser key rings, was such that they were being

Table 1 Antibiotic susceptibility testing of coagulase negative staphylococci

Species	Penicillin	Gentamicin	Tetracycline	Erythromycin	Ciprofloxacin	Teicoplanin
<i>S epidermidis</i>	0/42*	5/42	1/36†	0/42	1/42	0/42
<i>S warneri</i>	0/4	0/4	0/4	0/4	0/4	0/4
<i>S capitis</i>	0/3	0/3	0/3	0/3	0/3	0/3
<i>S hominis</i>	0/2	1/2	0/2	0/2	0/2	0/2
<i>S xylosum</i>	0/1	0/1	0/1	0/1	0/1	0/1
<i>S simulans</i>	0/1	0/1	0/1	0/1	0/1	0/1
<i>S equorum</i>	0/1	0/1	0/1	0/1	0/1	0/1
<i>S lugdunensis</i>	0/1	0/1	0/1	0/1	0/1	0/1
Total	0/55	6/55	1/49†	0/55	1/55	0/55

\*Numbers indicate intermediate isolates/total isolates.

†Susceptibility to tetracycline was not performed in six isolates.

purchased by children. A new version of the traditional, and dangerous children's "game" of "chicken" had developed in relation to these new "toys", the game of "chicken" being won by the child who could stare directly into the laser beam for the longest period. We concluded, "this makes lasers potentially very dangerous in the hands of children". Fortunately, trading standards agencies throughout the UK have moved to ban sale of these laser pens and a number of legal cases are pending with regard to their sale. There have also been successful prosecutions brought against individuals who have deliberately used these laser pen devices to cause temporary dazzle and visual disturbance, without permanent retinal damage.

We therefore were particularly interested in the recent *BJO* perspective by Professor John Marshall.<sup>2</sup> In an otherwise erudite and comprehensive review we were very surprised to read his conclusions, "laser pointers, pens, or key rings if used appropriately are not an eye hazard, and even if used inappropriately will not cause permanent eye damage." [Our italics] It has long been a physician's maxim that *always* and *never* can rarely be applied to human biology, even if perceived risks are low. Indeed, although the majority of laser pens examined by us at the time had an output of less than 5 mW, it seemed reasonable to conclude in our article that there was the *potential* for laser damage if these items were used inappropriately.

A recent article by Luttrull and Hallisey<sup>3</sup> is therefore of significant importance to any ophthalmologist dealing with clinical cases relating to laser pen exposure. In this reported case, a 34 year old Hispanic male was reviewed 2 days after deliberately staring into the beam of a class 3A (USA) laser pointer, held 8–10 inches from the eye, for 30–60 seconds. The laser device in question had a maximum power rating of 5 mW at a wavelength of 670 nm. Although the subject maintained 20/20 vision with a normal Amsler chart, he exhibited a focal disturbance of the retinal pigment epithelium in the left nasal macula despite resolution of his central scotoma. The right eye of this 34 year old was entirely healthy on intravenous fluorescein angiography, but the left eye demonstrated a window-type defect and hyperfluorescence in the area of retinal pigment disturbance at the macula. The authors concluded, "laser-pointing devices can cause macular injury when used inappropriately. Conformance with consumer safety recommendations should minimise potential hazards".

Although we agree the risks of lasting injury from laser pointing devices are remote,<sup>1,2</sup> it cannot categorically be stated that there is no risk.<sup>2</sup> While transient exposure is unlikely to cause long term ocular damage, this case<sup>3</sup> demonstrates that the authors' initial warnings about the theoretical risk of injuries from staring into these devices were warranted.<sup>1</sup> The ophthalmic clinician should therefore be aware of the potential for retinal injury from gross misuse of laser pointers and these "toys" must be kept out of the hands of children and those who might use them inappropriately.

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- 1 McGhee CNJ, Craig JP, Moseley H, *et al.* Laser keychains; potential for serious eye injury. *Eye News* 1998;4:17–19.
- 2 Marshall J. The safety of laser pointers: myths and realities. *Br J Ophthalmol* 1998;82:1335–8.
- 3 Luttrull JK, Hallisey J. Laser pointer-induced macular injury. *Am J Ophthalmol* 1999;127:95–6.

### Reply

EDITOR,—In writing this article<sup>1</sup> I addressed five issues. Firstly, to counteract media "hype" on the "blinding potential" of laser pointers by explaining the biophysical principles involved in beam tissue interactions and, as a consequence, the ineffectual nature of such devices as retinal hazards. Secondly, I wished to address a degree of confusion generated by a misleadingly titled, well circulated, but non-peer reviewed article.<sup>2</sup> Thirdly, I wished to give guidance to casualty and medical personnel first confronted with individuals who had experienced exposure to laser pointers. Fourthly, I thought it helpful to explain the differences in classification between countries housing the world's major producers and major market<sup>3</sup> and the European Union.<sup>4</sup> Finally, I wanted to highlight the fact that, although the derived safety criteria and system classifications varied between codes of practice, all the classifications were dependent on a common database.

McGhee *et al* confused the issue of classification and potential risk in their periodical article and promulgate the confusion in their current letter. A laser pointer that goes from a 3A classification in the United States does not suddenly become more hazardous by traveling across the Atlantic. Although it moves into a 3B category within the European Union, it is still the same laser and still has the same risk profile as it had in the United States as a 3A system.

Almost all of the UK database for retinal damage that is incorporated in the various codes of practice was derived through collaborations between my laboratory and the then Institute of Aviation Medicine, Farnborough, Hampshire.<sup>5</sup> A fundamental problem implicit in all laser safety data is that empirical data only exist where laser wavelengths and time domains have importance to military applications. Throughout the world almost all of the data have been underwritten by military funding. There are two consequences which arise from such a database: the first is that we have no ED50 data for many common lasers, including helium neon and red diodes; the second is that safety authorities might err on the side of caution and, as a result, the codes of practice have huge safety margins in order to secure protection.

McGhee *et al* cite a recent article<sup>6</sup> as an indication that my conclusion concerning the laser safety pointers was erroneous. Far from supporting their statement, careful reading of the cited paper merely highlights one of the problems addressed in my review—namely, guilt by association. Luttrull and Hallisey<sup>6</sup> were confronted by a patient whose visual acuity was 20/20. Would the fundus of the individual have been examined, and a fluorescein angiogram undertaken, unless the word "laser" had been stated? Furthermore, the individual claimed an exposure of 30–60 seconds to a device with a nominal maximum output power of 5 mW; an exposure period over this time would be associated with eye movement displacement of the retinal image and could not result in thermal damage. In a previous study we exposed stabilised animal eyes to a 5 mW HeNe laser for 5 minutes without observing retinal damage.<sup>7</sup> Remember also, that in order to observe retinal

damage from clinical diode laser systems 50 mW or more are required. In the cited paper, the patient claimed to have noted a red central scotoma but presumably should have seen a green afterimage. The headache reported is indicative of anxiety rather than being related to any retinal damage mechanism. The finding of a window defect on angiography is also inappropriate in that if a suprathreshold exposure had been sustained then a leak would have been apparent, not a window defect. Finally, the authors discuss the possibility that this individual may have been at high risk as a result of racial pigmentation. Again this is erroneous, because although a marginally higher risk would have been conferred by melanin for thermal insult, greater pigmentation would have lowered the risk in relation to a greater than 10 second photochemical mechanism. Given the inability of a 5 mW system to generate thermal transients of sufficient magnitude to induce retinal damage, and in the absence of an empirical biophysical study, their case does not support their conditions.

In their final paragraph, McGhee *et al* agree that the risks of permanent retinal injury are remote, but they state that "there can never be zero risk". In all safety criteria documents the aim is to reduce risk to an insignificant level. I reiterate that current US safety standards satisfy these criteria. I also reiterate that, notwithstanding the report of Luttrull and Hallisey, to date there is no evidence of irreversible retinal damage sustained from viewing laser pointers.

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- 1 Marshall J. The safety of laser pointers: myths and realities. *Br J Ophthalmol* 1998;82:1335–8.
- 2 McGhee CNJ, Craig JP, Moseley H, *et al.* Laser key chains: potential for serious eye injury. *Eye News* 1998;4:17–19.
- 3 American National Standards Institute. *American National Standard for the safe use of lasers, ANSI Z136.1*. New York: National Standards Institute, 1993.
- 4 British Standards Institution. *Radiation safety of laser products, equipment, classification, requirements and users' guide*. BSEN 60825: 992. London: BSI, 1992.
- 5 Borland RC, Brennan DH, Marshall J, *et al.* The role of fluorescein angiography in the detection of laser-induced damage to the retina: a threshold study for Q-switched, neodymium and ruby lasers. *Exp Eye Res* 1978;27:471–93.
- 6 Luttrull JK, Hallisey J. Laser pointer-induced macular injury. *Am J Ophthalmol* 1999;127:95–6.
- 7 Smart D, Manson N, Marshall J, *et al.* New ocular hazard of mode locking in CW lasers. *Nature* 1970;227:1149–50.

## NOTICES

### External eye infections

The latest issue of *Community Eye Health* (no 30) discusses external infections of the eye. Included are papers on conjunctivitis, corneal ulcer, and transmission and control of infection. For further information please contact *Community Eye Health*, International Centre for Eye Health, Institute of Ophthalmology, 11–43 Bath Street, London EC1V 9EL. (Tel: (+44) 171 608 6909/6910/6923; fax: (+44) 171 250 3207; email: [eyesource@ucl.ac.uk](mailto:eyesource@ucl.ac.uk)) Annual subscription £25. Free to workers in developing countries.

### Residents' Foreign Exchange Programme

Any resident interested in spending a period of up to one month in departments of ophthalmology in the Netherlands, Finland, Ireland, Germany, Denmark, France, Austria, or Portugal should apply to: Mr Robert Acheson, Secretary of the Foreign Exchange Committee, European Board of Ophthalmology, Institute of Ophthalmology, University College Dublin, 60 Eccles Street, Dublin 7, Ireland.

### 16th Congress of the International Society for Geographical and Epidemiological Ophthalmology (ISGEO)

The 16th Congress of the ISGEO will be held at the Institut D'Ophthalmologie Tropicale De L'Afrique (IOTA) in Bamako, Mali on 21–22 February 2000. Further details: Dr Paul Courtright, ISGEO Secretary, BC Centre for Epidemiologic & International Ophthalmology, University of British Columbia, St Paul's Hospital, 1081 Burrard Street, Vancouver, BC V6Z 1Y6, Canada (email: [pcourtright@stpaulshosp.bc.ca](mailto:pcourtright@stpaulshosp.bc.ca); website: [www.interchange.ubc.ca/bceio/isgeo/](http://www.interchange.ubc.ca/bceio/isgeo/)).

### Office of Continuing Medical Education

The Baylor College of Medicine, Cullen Eye Institute, Department of Ophthalmology is presenting a course entitled "The Cullen course 2000—clinical advances in ophthalmology for the practising ophthalmologist" at the Houstonian Hotel and Conference Center, 111 North Post Oak Road, Houston, Texas from 3–5 March 2000. Further details: Carol J Soroka, Conference Coordinator, Office of Continuing Medical Education, Baylor College of Medicine, One Baylor Plaza-S104, Houston, TX 77030, USA. (Tel: 713 798-5600.)

### Leonhard Klein Foundation

The Leonhard Klein Foundation in the Donors' Association for the Promotion of Sciences and Humanities in Germany is to bestow the Leonhard Klein Award 2000 of DM 30 000 for innovative work in the development and application of microsurgical instruments and microsurgical operating techniques. Deadline for applications is 31 March 2000. Further details: Stifterverband für die Deutsche Wissenschaft e V, Herrn Peter Beck, Postfach 16 44 60, D-45224 Essen, Germany.

### American Institute of Ultrasound in Medicine

The American Institute of Ultrasound in Medicine will hold the 44th annual convention in San Francisco, California on 2–5 April 2000. Further details: AIUM Professional Development Department, 14750 Sweitzer Lane, Suite 100, Laurel, MD 20707-5906 (tel: 800-638-5353; fax: 301-498-4100; email: [conv\\_edu@aium.org](mailto:conv_edu@aium.org); website: [www.aium.org](http://www.aium.org)).

### XXII Tuebingen Detachment Course

The XXII Tuebingen Detachment Course, retinal and vitreous surgery, will be held in the congress centre Incheba, Bratislava, Slovak Republic 6–7 April 2000 preceding the congress on retinal detachment of the Slovak

Ophthalmological Society 8–9 April 2000. Further details: Professor Peter Strmen 81369 Bratislava, Míczkiewiczova 13 (tel/fax: 00421-7-52964641; email: [strmen@faneba.sk](mailto:strmen@faneba.sk)).

### Vith Mediterranean Ophthalmological Society

The combined meeting of the Vith Mediterranean Ophthalmological Society and the Vith Michaelson Symposium on Ocular Circulation and Neovascularisation will be held in Jerusalem on 21–26 May 2000. Further details: Secretariat, c/o Unitours Israel Ltd, PO Box 3190, 61031 Tel Aviv, Israel (tel: +972-3-5209999; fax: +972-3-5230999; email: [meetings@unitours.co.il](mailto:meetings@unitours.co.il)).

The Vith Michaelson medal and award will be delivered on 24 May 2000 in Jerusalem. The medal and award (\$15 000 monetary prize) are sponsored by the Israel Academy of Sciences and Humanities and by the Hadassah Hebrew University Hospital and Medical School of Jerusalem, Israel. Nominations are sought from the ophthalmic community at large. Suggestions and reasons for choice and CV highlights should be sent to Professor David BenEzra, Secretary for the International Nominating Committee, Pediatric Ophthalmology Unit, Hadassah Hebrew University Hospital, PO Box 12000, Jerusalem 91120, Israel.

### 5th International Vitreoretinal Meeting—IIV 2000

The 5th International Vitreoretinal Meeting—IIV 2000 will be held in Parma, Italy, on 26–27 May 2000. The main topics will include "Hypotony and glaucoma in vitreoretinal surgery", "Internal limiting membrane surgery", "Macula oedema", "Open globe injuries", and "News in retinal pigment epithelium". Further details: C Cantu, MA De Giovanni, or S Tedesco, Scientific Secretariat, Institute of Ophthalmology, University of Parma, Via Gramsci 14, 43100 Parma, Italy (tel: ++39 0521 259106; fax: ++39 0521 292358; email: [nuzzi@ipruniv.cce.unipr.it](mailto:nuzzi@ipruniv.cce.unipr.it)).

### International Strabismological Association

The International Strabismological Association (ISA) has established fellowships for training in strabismus and paediatric ophthalmology, supported by \$US 10 000 each. Further details: Secretary/Treasurer ISA, Derek T Sprunger, MD, Indiana University School of Medicine, 702 Rotary Circle, Indianapolis, Indiana 46202-5175, USA. The last day of application is 15 June 2000 (tel: (317) 274-1214; fax: (317) 274-1111).

### XXXIV Nordic Congress of Ophthalmology

The XXXIV Nordic Congress of Ophthalmology will be held in Reykjavik, Iceland, 18–21 June 2000. This meeting celebrates the 100 year anniversary of the Nordic Ophthalmology Conference. Further details: Iceland Incentives Inc, Hamraborg 1–3, Is-Kopavogur, Iceland (tel: +354 554 1400; fax: +354 554 1472; email: [incentiv@itn.is](mailto:incentiv@itn.is)).

### 13th Annual Meeting of German Ophthalmic Surgeons

The 13th annual meeting of German Ophthalmic Surgeons will be held on 15–18 June

2000 at the Meistersingerhalle, Nuremberg, Germany. Further details: MCN Medizinische Congress-organisation Nuremberg AG, Zerzabelshofstrasse 29, D-90478 Nuremberg, Germany (tel: +49-911-3931621; fax +49-911-3931620; email: [doerflinger@mcn-nuermberg.de](mailto:doerflinger@mcn-nuermberg.de)).

### Joachim Kuhlmann Fellowship for Ophthalmologists 2000

The Joachim Kuhlmann AIDS Foundation, Essen, Germany, is sponsoring two fellowships per year for ophthalmologists at a well known institute, who want to train in CMV retinitis and other HIV related ophthalmological diseases. The fellowships are valued at \$US5000 each. Deadline for application is 31 July. Detailed applications, including CV and publication list, should be sent to the Joachim Kuhlmann AIDS Foundation, Bismarckstrasse 55, 45128 Essen, Germany (tel: 0201 87910-87; fax: 0201 87910-99; email: [jkstiftung@t-online.de](mailto:jkstiftung@t-online.de)).

### DR-2000, International Forum on Diabetic Retinopathy

The International Forum on Diabetic Retinopathy will take place on 7–9 September 2000 at the Palazzo Reale, Naples, Italy. Further details: Francesco Bandello, Congress Secretariat, MGR Congressi, Via Servio Tullio, 4, 20123 Milano, Italy (tel: 39 02 430071; fax: 39 02 48008471; email: [dr2000@mgr.it](mailto:dr2000@mgr.it)).

### 12th Afro-Asian Congress of Ophthalmology

The 12th Afro-Asian Congress of Ophthalmology (Official Congress for the Afro-Asian Council of Ophthalmology) will be held on 11–15 November 2000 in Guangzhou (Canton), China. The theme is "Advances of ophthalmology and the 21st century". Further details: Professor Lezheng Wu, Zhongshan Eye Center, SUMS, New Building, Room 919, 54 Xianlie Nan Road, Guangzhou 510060, PR China (tel: +86-20-8760 2402; fax: +86-20-8777 3370; email: [lwuicv@gzsums.edu.cn](mailto:lwuicv@gzsums.edu.cn)).

### Singapore National Eye Centre 10th Anniversary International Congress

The Singapore National Eye Centre 10th Anniversary International Congress will be held in conjunction with 3rd World Eye Surgeons Society International Meeting on 2–4 December 2000 at the Shangri-La Hotel, Singapore. Further details: The Organising Secretariat, 11 Third Hospital Avenue, Singapore 168751 (tel: (65) 2277255; fax: (65) 2277290; internet: [www.snecc.com.sg](http://www.snecc.com.sg)).

### The Hong Kong Ophthalmological Symposium 00

The Hong Kong Ophthalmological Symposium 00 will be held 4–5 December 2000, in Hong Kong, China. Further information: Miss Vicki Wong, Room 802, 8/F Hong Kong Academy of Medicine, 99 Wong Chuk Hang Road, Aberdeen, Hong Kong (tel: (852) 2761 9128; fax: (852) 2715 0089; email: [cchk@netvigator.com](mailto:cchk@netvigator.com)).



## Laser pointers can cause permanent retinal injury if used inappropriately

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