

Letter to the editor

To the Editor:

A workshop on ocular safety and eye care was held in October 1978 under the auspices of the National Research Council Committee on Vision. The members of the workshop have explored the possibility of potential ocular hazards from the ultraviolet, visible, and near-infrared radiation emitted from ophthalmic instruments currently in use. In particular, there is some evidence that certain types of ocular disorders may be aggravated by excessive exposure to light. On this basis, it is recommended that, in general, instruments be designed to minimize the amount of ultraviolet and infrared radiation. Especially, chronic exposures to emission in the blue end of the spectrum should be reduced as far as possible to avoid photochemical damage to the retina. This "blue light" retinal hazard of any instrumentation may be evaluated by using such guidelines as the proposed Threshold Limit Values of the American Conference of Governmental Industrial Hygienists. On the basis of these guidelines, Table I indicates the retinal hazard of chronic exposure to different wavelengths relative to 435 nm, the most dangerous.

Any users of experimental instrumentation for eye care are urged to make actual measurements of the light levels present to supplement their calculations. Forthcoming publications resulting from this workshop or other succeeding ones on the same subject will furnish reports on current research programs in order to develop and update these guidelines and promote additional investigations.

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Table I

| Wavelength (nm) | Blue-light hazard (relative) |
|-----------------|------------------------------|
| 400 | 0.10 |
| 405 | 0.20 |
| 410 | 0.40 |
| 415 | 0.80 |
| 420 | 0.90 |
| 425 | 0.95 |
| 430 | 0.98 |
| 435 | 1.0 |
| 440 | 1.0 |
| 445 | 0.97 |
| 450 | 0.94 |
| 455 | 0.90 |
| 460 | 0.80 |
| 465 | 0.70 |
| 470 | 0.62 |
| 475 | 0.55 |
| 480 | 0.45 |
| 490 | 0.22 |
| 495 | 0.16 |
| 500-600 | $10^{[(450-\lambda)/50]}$ |
| 600-700 | 0.001 |
| 700-1049 | 0.001 |
| 1050-1400 | 0.001 |