

## Eye Swelling

Swelling eyes appears to be the reptile equivalent of "snow-blindness" (photokeratoconjunctivitis) and certainly the descriptions we've seen, from several cases now, under several different types of UV lamp, do sound like this condition... it appears rapidly, usually with a new bulb or tube (ie not burned in, so higher output) and maybe, when they are rather (too?) close to the lamp as well.

The lizard's eyelids swell up and close, and he may huddle and appear miserable and depressed.

Then it clears up rapidly when the lamp is removed or exchanged for an older one or different type..

In HUMANS this "snow-blindness" is caused by the glare of reflected UVB from snow, in nature, so it definitely isn't just UVC that causes this (although both UVC and UVB cause it when arc welders get it)

Here's some info I just leaned:

(1) from:

[http://www.gov.on.ca/LAB/english/hs/guidelines/uvradiation/gl\\_uvrad\\_2.html](http://www.gov.on.ca/LAB/english/hs/guidelines/uvradiation/gl_uvrad_2.html)

"Welders' flash, also known as arc-eye and snow-blindness (medical name: *photokeratoconjunctivitis*)

This is a painful irritation of the cornea and the conjunctiva (the membrane connecting the eyeball with the inner eyelid). There is a feeling of "sand in the eye" and sensitivity to light. UV-B is most effective in causing this "sunburn of the eye". The eye is more sensitive than the skin to UV radiation because it lacks the skin's horny outer layer and protective pigment.

Symptoms appear from six to 24 hours after exposure and usually disappear within the following 48 hours. No permanent damage to the eye results unless a severe exposure has occurred."

(2) from:

<http://sedac.ciesin.org/ozone/UNEP/chap2.html>

### EFFECTS OF INCREASED SOLAR ULTRAVIOLET RADIATION ON HUMAN HEALTH

"Perhaps the best documented short-term ocular effect of exposure to UV radiation (especially UV-B and UV-C) is *photokeratoconjunctivitis* ('snow blindness' and 'welder eyes'), i.e., an inflammatory reaction

(a reddening) of the surface of the eyeball. Extraordinarily painful, one episode should be sufficient to induce behavior modification to prevent recurrences.....

The exposure of the unprotected eyes to solar UV radiation is significantly influenced by the shielding from the eyebrows and eyelids (through squinting) and is strongly dependent on the direction of the line of sight. Highly reflecting surfaces increase the exposure dramatically; for example, the risk of photokeratoconjunctivitis is strongly increased over snow surfaces [Sloney, 1987]."

Interestingly, the Canadian Health Authority (in advising tanning salons etc) don't say that UVC causes it, but say that UVB and UVA do:

<http://www.hc-sc.gc.ca/hecs->

[sesc/ccrpb/publication/guidelines\\_tanning\\_salon\\_owners\\_operators\\_users/appendix\\_b.htm](http://sesc/ccrpb/publication/guidelines_tanning_salon_owners_operators_users/appendix_b.htm)

And even more interestingly, the Spectrometer manufacturers Gigahertz-Optic (whose machine is used by Dr Gehrman and others) actually say on their website that BLUE LIGHT can cause photokeratoconjunctivitis:

[http://www.gigahertz-optik.com/database\\_en/html/applications-tutorials/tutorials/vi.-applications-for-light-measurement-in-medicine-technology-industry-and-environmental-science/vi.1.-phototherapy-and-radiation-protection.html](http://www.gigahertz-optik.com/database_en/html/applications-tutorials/tutorials/vi.-applications-for-light-measurement-in-medicine-technology-industry-and-environmental-science/vi.1.-phototherapy-and-radiation-protection.html)

"The photobiological effects of optical radiation, especially in the ultraviolet and blue (400 to 500nm) spectral regions, can be therapeutic.

...However, optical radiation also poses a potential health hazard for both human skin and eyes. For example, overexposure to ultraviolet and blue `light' can cause common sunburn, photokeratitis (welder`s eye) and burning of the retina or cornea."

There is obviously (oh, what a great pun!) more to this than meets the eye!

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