# UV and Eye Protection

## Background

Ultraviolet (UV) radiation comprises invisible high energy rays just beyond the blue end of the visible spectrum. The majority of UV radiation comes from sunlight. Most UV radiation is absorbed by the anterior structures of the eye, although some of it reaches the light-sensitive retina. UV absorption by or around the eye may contribute to age-related changes in the eye, serious eye diseases, periocular skin cancer, and vision loss. Protecting eyes from UV radiation is important and public awareness is critical.

## Policy Issue

Canadians cannot tell how much UV protection a pair of sunglasses will provide by their price, colour, or by the darkness of the lenses. Consumers should look for labels that list the type and amount of protection. General purpose sunglasses block from 60 to 92 percent of visible light and UVA rays, and between 95 and 99 percent of UVB rays. These sunglasses are good for driving, and are recommended whenever sunlight is harsh enough to cause squinting. Other types of sunglasses, including cosmetic tint and special purpose, are not recommended for driving.

Health Canada's Consumer and Clinical Radiation Protection Bureau recommends consumers ensure their sunglass lenses are dark enough to keep eyes comfortable, but not so dark that they reduce vision. The Bureau also recommends scratch-resistant coating on plastic lenses, as well as checking lenses for distortion.

## Policy Position

The Canadian Association of Optometrists recommends that sunglasses should limit UV-A and UV-B rays. The degree of UV protection should not be related to price. Sunglasses should be stable when worn and large enough to provide adequate eye coverage.

Infants and children should also wear sunglasses year round to protect their eyes against UV radiation. Children's sunglass lenses should be made of plastic or polycarbonate rather than glass for added impact protection. All distance prescription spectacles for children should incorporate UV protection within the lens material or as a UV-protective coating. Brimmed hats can also help protect the eyes from UV rays.

## References

Health Canada. Sun Safety. Accessed online December 21, 2016 at: http://www.hc-sc.gc.ca/hl-vs/sun-sol/index-eng.php

Health Canada. Sunglasses. Accessed online December 21, 2016 at: http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/glasses-lunettes-eng.php#st

Health Canada. Ultraviolet Radiation. Accessed online December 21, 2016 at: http://www.hc-sc.gc.ca/ewh-semt/radiation/ultraviolet/index-eng.php

Marrett, L., Chu, M., Atkinson, J., Nuttall, R., Bromfield, G., Hershfield, L., Rosen, C. 2016. An update to the recommended core content for sun safety messages for public education in Canada: A consensus report. Canadian Journal of Public Health 107(4-5) e473-e479.

Skin Cancer Foundation. Choosing sunglasses for your kids. Accessed online August 10, 2016 at: http://www.skincancer.org/prevention/sun-protection/children/choosing-sunglasses-for-your-kids

Your Sight Matters. Periocular Skin Cancer. Accessed online December 21, 2016 at: http://yoursightmatters.com/conditions/periocular-skin-cancer/

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