TORONTO

STAFF REPORT
INFORMATION ONLY

Shade Guidelines for the City of Toronto

Date:	July 29, 2010
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

Solar radiation and more particularly, the ultraviolet portion of solar radiation is a human carcinogen for skin cancer. The provision of shade in City-owned and operated outdoor venues, in particular where children are in attendance, is an important measure for the primary prevention of skin cancer and its associated health and economic burden.

The *Shade Guidelines* have been created by the Shade Policy Committee of the Toronto Cancer Prevention Coalition in collaboration with Parks, Forestry and Recreation and with the support of Toronto Public Health, as directed by the Board of Health and City Council. The *Shade Guidelines* are intended to complement the *Shade Policy for the City of Toronto* and to assist all City agencies, boards, commissions and divisions (ABCDs) to provide UVR protection and sun safety measures for their outdoor environments. The *Shade Guidelines* are posted at http://www.toronto.ca/health/resources/tcpc/shade_guidelines.htm.

The guidelines contain recommendations and principles for increasing shade at facilities operated by the City of Toronto such as waterplay and swimming pools, playgrounds, beaches, and public squares. These facilities are used primarily during the summer when direct UVR levels are at their highest, when high levels of indirect UVR reflect from surfaces and when users typically wear minimal clothing.

A preliminary assessment of Toronto Parks, Forestry and Recreation playgrounds and waterplay facilities in 2008 revealed that most of the facilities required significant improvements in the level of shade provided. A shade audit of eight Toronto playground and waterplay sites in 2008-2009 was funded by a grant from the Cancer Care Ontario GTA Cancer Prevention and Screening Network which was awarded to Ryerson University in partnership with Toronto Public Health and Parks, Forestry and Recreation.

The project's objective was to provide City of Toronto staff with information on the cost-effectiveness of conducting shade audits. In addition, the project offered the opportunity to develop a consistent shade audit process, a set of standards for shade and the knowledge to implement and maintain additional plantings and development of shade structures on Toronto sites. The knowledge gained from the *City of Toronto Public Playgrounds and Waterplay Facilities Shade Audit Pilot* has been instrumental in the development of the *Shade Guidelines*. Toronto Public Health, Parks, Forestry and Recreation and the Shade Policy Committee will continue to collaborate to refine the *Shade Guidelines* as appropriate.

Financial Impact

There are no financial impacts resulting from this report.

DECISION HISTORY

On September 4, 2007, the Board of Health endorsed the *Shade Policy for the City of Toronto* and forwarded a copy of the statement to the City Manager for implementation. The Board of Health also requested the Medical Officer of Health to forward the shade policy to all City agencies, boards, commissions and divisions (ABCDs) and to direct the Shade Policy Committee to develop specific design guidelines to assist the ABCDs to operationalize the *Shade Policy for the City of Toronto*.
(www.toronto.ca/health/resources/tcpc/pdf/shade_policy_decision.pdf)

In addition, City Council on July 15, 16 and 17, 2008, adopted a series of motions based on the report from Parks, Forestry and Recreation entitled *Undertaking Shade Audits at Parks, Forestry and Recreation Playgrounds and Waterplay Facilities,* submitted to Parks and Environment Committee on July 8, 2008. The motions directed Parks, Forestry and Recreation and the Shade Policy Committee (led by Toronto Public Health) to jointly develop shade policy guidelines for the Parks, Forestry and Recreation Division for existing playgrounds and waterplay facilities to assist staff to make recommendations on possible shade enhancement.
(www.toronto.ca/legdocs/mmis/2008/pe/decisions/2008-07-04-pe18-dd.pdf)

The *Shade Guidelines* have been prepared to address the above directives.

ISSUE BACKGROUND

The International Agency for Research on Cancer (IARC), a World Health Organization body, has determined that solar radiation, and more particularly the ultraviolet portion of solar radiation, is a human carcinogen for skin cancer.[1] Overexposure to UVR also increases the risk of lip cancer, some types of eye melanoma and cataracts.[2] It can cause sunburn and premature skin aging and wrinkling. It can trigger skin reactions in those using "photosensitizing" substances, including a number of common medications such as

tetracycline. It can also impair the body's immune system. Despite the fact that many Canadians are at risk of vitamin D deficiency because of our northern latitude and reduced sun exposure, current Health Canada guidelines recommend the addition of oral vitamin D supplements for “at risk” people, but do not encourage more UVR exposure.

According to the Canadian Cancer Society, the incidence of malignant melanoma is increasing[3]. In Ontario, an estimated 30,000 people will be diagnosed with skin cancer each year, about 2,000 of them with melanoma[4]. From 2002 to 2004, 238 Toronto residents died from skin cancers. Of this, 186 deaths were attributed to malignant melanoma[5]. Skin cancer also causes suffering among individuals who have experienced disfigurement and mutilation as a result of treatment.

Sunlight is the major natural source of UVR. Therefore shading outdoor environments should be a priority for primary prevention of skin cancer and its associated economic burden. According to a newly released report, the total estimated economic burden of skin cancer in Canada for 2004 was $532 million. The majority of this cost is attributable to melanoma (83.4%), with the balance distributed between basal cell carcinoma (9.1%) and squamous cell carcinoma (7.5%).[6] The report projects that by 2031, the total estimated economic burden of skin cancer in Canada will rise to $922 million annually. The distribution across the three cancer types is predicted to shift as follows: melanoma (75.5%); basal cell carcinoma (13.3%); and squamous cell carcinoma (11.2%).

As the ozone layer has become thinner, the population is less protected from the effects of sun exposure. Southern Ontario has the strongest UVR in Canada. Sun protection is required from spring through fall, especially during the Critical Protection Time (CPT) which is from 11:00 a.m. to 4:00 p.m. Eastern Standard Time (EST) and when the UV index reading is 3 or higher.

Health and environmental issues are inextricably linked, and the arguments for shade as integral to sustaining a healthy urban environment are persuasive. The provision of natural and constructed shade at publicly owned and municipally operated facilities and sites, particularly those where children may be at risk (such as childcare centres, wading pools, splash pads, playgrounds and beaches) is therefore essential. Children require special protection from overexposure to UVR as they tend to be in the sun more than adults and their skin is thinner and more sensitive and therefore more susceptible to serious burns. Exposure to the harmful effects of UVR during the early years of life is a major determinant of lifetime risk of skin cancer. Easy access to well-designed and safe outdoor environments, which are important contributors to healthy behaviours, has been associated with increased physical activity in children.[7] Furthermore, where children have the opportunity for free play in the outdoor environment; they will be better able to get along with others, healthier and happier.[8]

The preliminary assessment by Toronto Parks, Forestry and Recreation of its playgrounds and waterplay facilities in 2008, revealed that most of the facilities required significant improvements in the level of shade provided. As a result of a shade audit pilot project of eight Toronto waterplay facilities and playgrounds in 2008-2010, City site managers and

designers will be able to implement the shade audit process in future projects. This will assist them to plan more site specific design solutions to offset the risks associated with overexposure to UVR (both direct and indirect).

COMMENTS

Children require special protection from UVR. According to the National Sun Survey highlights report[9], sun exposure on a typical summer day is greater for children than for adults, with over 50% of children spending at least two hours in the sun. Older children (ages 6-12) are more likely to spend at least two hours more in the sun and be less protected on a typical summer day than younger children (ages 1-5). Over 50% of children also get their worst sunburn while watching or participating in outdoor recreational activities. The National Sun Survey was carried out across Canada with the intention to provide health professionals and policy makers with information to assist with the development of effective programs to minimize over exposure to UVR.

In addition to sites where children are predominantly in attendance, shade is also important along pedestrian and bicycle paths, public squares and many other public spaces as outlined in the *Shade Guidelines*. One of the principal means of providing shade in public places is through strategic planting and nurturing of trees. Trees can provide significant and long term benefits to the health of a community. More trees mean more protection from UVR. Trees with dense, wide canopies and low foliage create the most shade and shield humans from overexposure to direct and indirect UVR for maximum protection.

Trees and other vegetation when planted strategically, provide other benefits such as climate change and urban heat island mitigation and reduction of air pollution. Trees also help to reduce smog and poor urban air quality, which result in 1700 premature deaths and 6,000 hospitalizations per year in Toronto.[10]

A green and cool environment can also encourage physical activity by adults at a time when obesity has become a growing public health concern. In addition, free play in the outdoor environment will enable children to be more cooperative, less aggressive and healthier overall. These factors, all of which are addressed in key City policy frameworks such as the Official Plan and the Toronto Green Standard, provide added incentive to make shade a priority in City-owned and operated venues.

Extensive research, planning and experience have gone into preparing the material in the *Shade Guidelines*. Part I includes sections on UVR and its Health Effects, Policy Frameworks and Co-Benefits of Shade. Part II includes shade guidelines for specific sites. This material has been informed by the pilot shade audits of eight Toronto waterplay facilities and playgrounds during 2008-2010.

The *Shade Guidelines* may also be of value to other individuals and groups involved in planning and design of optimal shade provision for outdoor environments to protect against the damaging effects of overexposure to the sun.

The *Shade Guidelines* include a user feedback form to facilitate future improvements to the Guidelines.

Next Steps

In light of the evidence that melanoma and other forms of skin cancer are on the rise throughout Canada, Toronto Public Health will continue to collaborate with Parks, Forestry and Recreation and the Shade Policy Committee, to take a comprehensive approach to protecting Torontonians from the health risks of overexposure to UVR. This will include promoting the use of the *Shade Guidelines* and achieving a consistent shade audit process.

The *Shade Guidelines* are posted on the Toronto Cancer Prevention Coalition website http://www.toronto.ca/health/resources/tcpc/shade_guidelines.htm. The *Shade Guidelines* will assist City agencies, boards, commissions and divisions and other users to implement the planning and design principles and recommendations outlined for each type of site. These measures, combined with skin and eye protection measures and appropriate planning and scheduling of events, can reduce the risk of developing skin cancer and other negative health effects.

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