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The Regional Municipality of Durham Information Report

From: Commissioner & Medical Officer of Health
Report: #2025-INFO-13
Date: February 14, 2025

Subject:

Climate Change and Health Vulnerability Assessments; Solar Ultraviolet Radiation Report

Recommendation:

Receive for information

Report:

1. Purpose

1.1 To provide an update on Durham Region Health Department's (DRHD's) Climate Change and Health Vulnerability Assessments (CCHVAs).

2. Background

2.1 DRHD is mandated to conduct health vulnerability assessments under the [Ontario Public Health Standards: Requirements for Programs, Services and Accountability](#) (OPHS).

2.2 The [Healthy Environments and Climate Change Guideline](#) of the OPHS requires DRHD to assess health impacts related to climate change.

2.3 DRHD is completing the following seven reports in a special CCHVA series called Understanding the Local Health Impacts of Climate Change:

- a. A [background primer on climate change and health](#) in Durham Region, which was released on August 12, 2024, followed by six CCHVAs on:
 - [Extreme heat](#) (released September 23, 2024)
 - Solar UV radiation (UVR)
 - Vector-borne disease
 - Air quality
 - Extreme weather

- Food and water impacts

2.4 The report series aims to:

- a. Improve understanding of the links between climate change and health.
- b. Assess the risks of local climate hazards and associated health impacts.
- c. Prioritize health equity and priority populations.
- d. Establish a baseline for future analysis.

2.5 The solar UVR CCHVA entitled [Climate Change and Health in Durham Region: Assessing the Impact of Solar Ultraviolet Radiation](#) was released on February 6, 2025.

2.6 Reviews and feedback on the report were provided by the Regional Sustainability staff of the Office of the CAO.

2.7 The report, along with an executive summary are available at durham.ca/ClimateAndHealth.

3. Report Highlights

3.1 The report explores current and future health impacts of solar UVR in Durham Region.

3.2 It establishes an equity-focused framework for assessing and addressing factors of solar UVR vulnerability based on exposure, sensitivity, and adaptive capacity.

3.3 It provides a knowledge base to support strategies to prepare and protect residents, particularly those most exposed and sensitive to harmful solar UVR.

3.4 Key findings of the report:

- a. Climate change is expected to increase solar UVR exposure in Durham Region due to three main factors:
 1. Potential reduced cloud cover from increased greenhouse gas concentrations;
 2. Increased outdoor time associated with projected warmer weather; and,
 3. Overall low uptake of sun-protective behavior by Durham Region residents.
- b. Health impacts can be very serious but are also preventable:
 - Frequent and prolonged UVR exposure can cause sunburn, severe eye damage, skin cancers, and suppression of the immune system.
 - Incidence of skin cancer is expected to increase in Durham Region due to increased UVR exposure associated with warmer temperatures. It is

- estimated that a two-degree Celsius increase in air temperature is associated with a 10 per cent annual increase in skin cancer.
- Exposure risks are greatest from April to September between 11 am and 3 pm, with the highest proportion of solar UVR-related emergency department visit rates in Durham Region occurring during June and July.
 - Exposure risks can be greatly reduced through individual and neighbourhood-level sun-protection.
 - Although harmful UVR exposure is preventable, most Durham Region residents report they do not take protective measures.
- c. Although everyone can be harmed by solar UVR, some people are more sensitive than others and are at higher risk of negative health outcomes.
- Sensitive populations include infants and children, individuals with skin that sunburns easily, those with a history of sunburn or family history of skin cancer, people using certain medications, and people who work outdoors.
 - Sunburns are also more common among residents of Durham Region's northern, more rural municipalities of Brock, Uxbridge and Scugog.
 - With expected increases in solar UVR, protections are essential for Durham Region residents who must work outdoors.
- d. Special attention to sun-protection for infants and children is essential for reducing lifelong risks of skin cancer and other negative health outcomes from UVR in Durham Region.
- There is no legislation limiting UVR exposure in child and youth settings.
 - Approximately 80 per cent of a person's lifetime exposure to solar UVR is received before the age of 18, when skin is most sensitive to sunburns.
 - A single severe sunburn in childhood can double a person's risk of developing melanoma.
 - Disparities in tree canopy cover indicate unequal access to shade for many children in the region's urban municipalities, particularly among children living with low income.
- e. Building local capacity to limit solar UVR requires but is not limited to:
- Improved understanding of factors, behaviours and settings that lead to harmful sun exposure among youth.
 - Prioritization of sun protection in child and youth outdoor settings.
 - Assessment of shade distribution and access, especially in high-exposure areas such as outdoor playing fields and play areas, active transportation routes and transit waiting areas.
 - Establishment of local tree canopy cover baselines and targets with a focus on equitable access.

- Targeted communications on sun exposure risks and prevention, with an emphasis on early spring messaging.
- f. Local strengths to protect Durham Region residents from solar UVR include:
- DRHD's health promotion on sun safety at work, school and childcare facilities including a sun safety policy package for childcare facilities.
 - Strategic green infrastructure and tree planting programs such as Regional collaboration with local municipalities to promote and subsidize the LEAF (Local Enhancement and Appreciation of Forests) backyard tree planting program.
 - Strong shade policies in some municipalities.

4. Relationship to Strategic Plan

4.1 This report aligns with the following strategic directions and pathways in Durham Region's 2025-2035 Strategic Plan:

a. Strategic direction: Environmental Sustainability and Climate Action

- Pathway E3. Prepare for and respond to severe weather impacts.

b. Strategic direction: Healthy People, Caring Communities

- Pathway H4. Support the development of healthy children and youth, including access to affordable and quality child care.
- Pathway H7. Prepare for and respond to local health emergencies in partnership with the community.

5. Next Steps

5.1 The solar UVR report will be disseminated and promoted to municipal and community partners. The communication plan includes a news release and social media messages to build public awareness of solar UVR as one of the six climate hazards of concern for communities as well as the link between solar UVR exposure and health.

5.2 The remaining reports of the CCHVA series will be completed, published and promoted in sequence.

5.3 The next report entitled, Climate Change and Health in Durham Region: Assessing the Impact Vector-borne Disease, is expected in the spring of 2025.

5.4 Where possible, the report development process will continue to integrate the review and feedback of the Mississaugas of Scugog Island First Nation and Regional Sustainability staff.

6. Conclusion

- 6.1 The CCHVA report series is intended to help decision-makers better understand the health risks that Durham Region residents will face in the coming years.
- 6.2 It will help guide equity-focused adaptation plans to protect residents, especially those who are most affected and least protected.
- 6.3 The CCHVA report series will help support municipalities, community organizations and residents respond to the growing impacts of climate change.

Respectfully submitted,

Original signed by

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