



CLIMATE CHANGE AND HEALTH IN DURHAM REGION: Assessing the Impacts of Extreme Heat

HEALTH AND SOCIAL SERVICES COMMITTEE

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Presentation overview

- Assessment mandate and report series
- Extreme heat vulnerability assessment
 - Assessment framework
 - Key findings
 - Knowledge gaps
 - Regional strengths
 - Next steps



2024

CLIMATE CHANGE *and* HEALTH *in* DURHAM REGION

Assessing the impact of extreme heat





Why assess climate and health vulnerability?



**Ontario Public Health
Standards mandate**



**Health impacts of
climate change are
on the rise**



**Many health impacts
and health inequities
are preventable**



Report Series: 2024 -2025

Primer



Understanding the local health impacts of climate change

Vulnerability Assessments



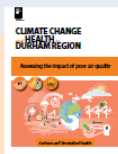
Assessing the impact of extreme heat



Assessing the impact of access and quality of food and water



Assessing the impact of extreme weather



Assessing the impact of poor air quality



Assessing the impact of vector borne disease



Assessing the impact of ultraviolet radiation





Report features



Current and future health impacts



Equity-focussed



Guidance from the Mississaugas of Scugog Island First Nation



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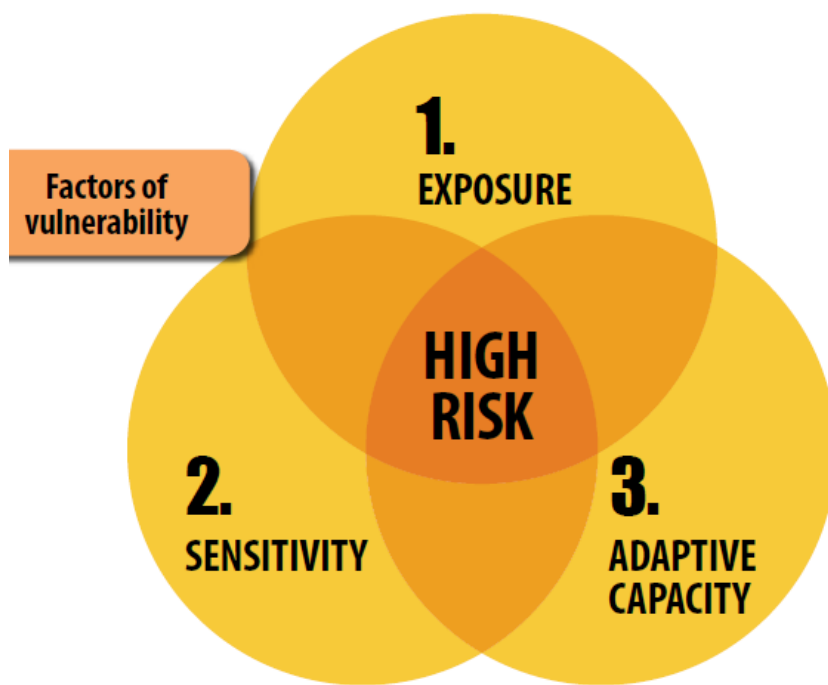


What is extreme heat vulnerability?

Priority Populations

- **Older adults**, 60 years+
- Infants and young **children**
- **Pregnant** individuals
- **Indigenous Peoples**
- **Chronic health challenges**
- Socially or materially **disadvantaged**
- **Newcomers**
- **Work** or are physically active **outdoors**

Factors of heat vulnerability





Overview of extreme heat in Durham Region



Extreme heat events in Durham Region are expected to more than double in the coming decades

	Baseline (1971 to 2000)	2050s	2080s
Extreme heat days (max >30°C)	16	27	47
Summer days (max >25°C)	42	78	100
Tropical nights (min >20°C)	101	132	148



Overview of extreme heat in Durham Region



Processes such as deforestation and land-use change have contributed to local extreme heat vulnerability



Strain on natural environment points to need for heat tolerant, nature-based solutions that can cool neighborhoods and increase heat resilience



What is known about local health impacts?

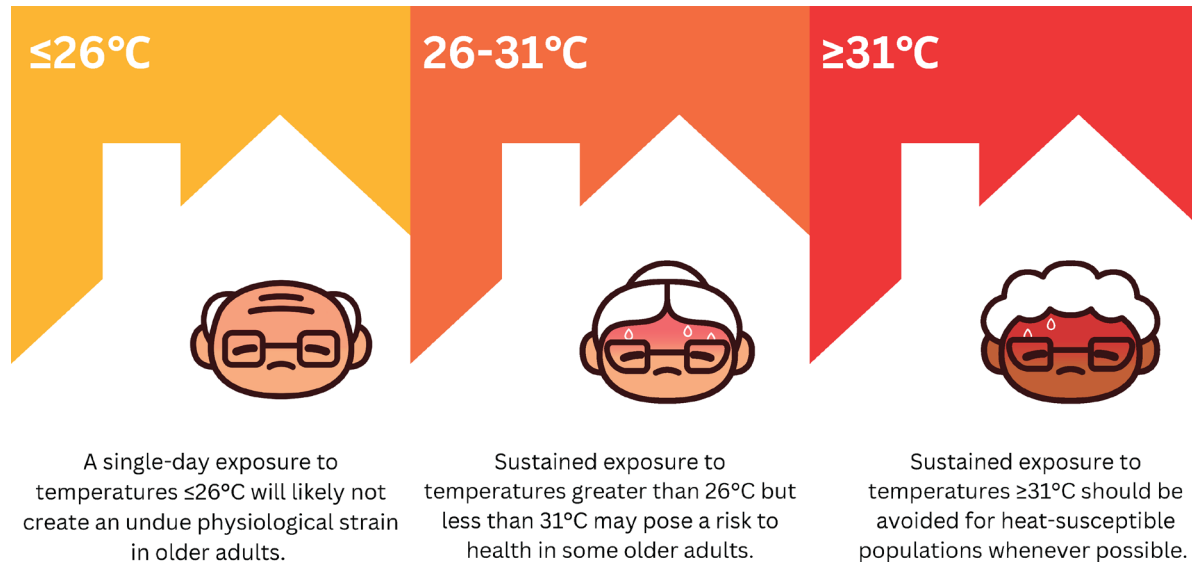


Figure used with permission from G.P. Kenny, University of Ottawa (2023)

- 30°C + associated with increased emergency room visits
- Increased health risks from overnight heat
- Increased risk of illness and death at beginning of heat season
- Health burden likely underreported among older adults



Where are more severe health impacts expected?

Building characteristics associated with high indoor temperatures



• Face south (with south facing windows that increase solar heat gain) [32]

• Lack mechanical cooling: a lack of mechanical cooling is associated with:
○ Living alone [41]
○ Living in a low-income or materially deprived neighbourhoods [40]
○ Living in a rented home [41]



• Located in an urban heat island [34, 35, 36, 23]

- The seven **priority Health Neighbourhoods**
- Urban **heat islands**
- Homes at risk of **hot indoor temperatures**

“
It's super-hot, there are trails with no trees, it's not walkable.
 ”
 - Ajax SNAP Resident



Who should be prioritized?

Durham Region has:

- A large and growing older adult population
- Higher prevalence of some chronic illnesses compared to the provincial average

High Risk: Priority populations that live alone, with a low/no income and/or dependent on caregiver(s)



Children, older adults and pregnant people



Socially or materially disadvantaged



Outdoor workers



People with health challenges or barriers



What are our strengths and resources?



Existing forests, wetlands, and grasslands; crucial to mitigating extreme heat



Tree planting incentive programs



Strong shade policies



What are our strengths and resources?



DRHD's Heat Warning and Information System (HWIS)



Region-wide Durham Greener Homes Program



The Region's energy efficiency and resilience strategy for the Durham Regional Local Housing Corporation (DRLHC)



What are our knowledge gaps?



Local health burden of heat-related illness



Improved understanding of Durham Region residents living with disabilities



Methods for identifying and reaching isolated individuals during heat wave



What are our knowledge gaps?



Information on residents without cooling systems and their heat coping barriers and needs



Distribution, accessibility, and use of cooling centres



Community spaces with high-need for shade, green space and/or water features



Next steps





Key messages



Durham Region should be prepared for increasing frequency and intensity of extreme heat events due to climate change



Health impacts can overwhelm local health systems



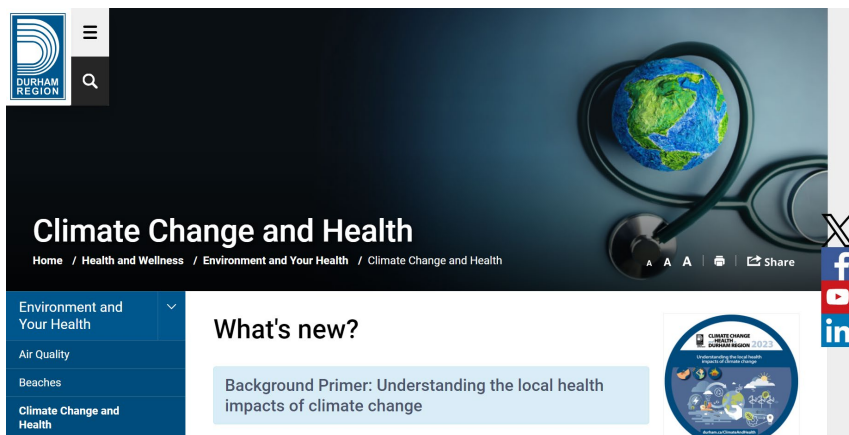
Need to engage with community to support prevention; especially those at risk of indoor overheating



Health impacts are severe but often preventable



Thank you



www.durham.ca/ClimateAndHealth

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