CLIMATE CHANGE AND HEALTH IN DURHAM REGION

Assessing the Impacts of Solar UV Radiation and Vector-borne Disease

Council for the Township of Brock

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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

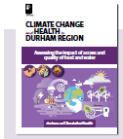
Report Series

Primer

Understanding the local health impacts of climate change

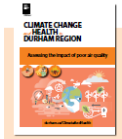
Vulnerability Assessments

Assessing the impact of extreme heat



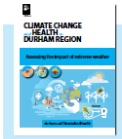
Assessing the impact of access and quality of food and water

Assessing the impact of ultraviolet radiation



Assessing the impact of poor air quality

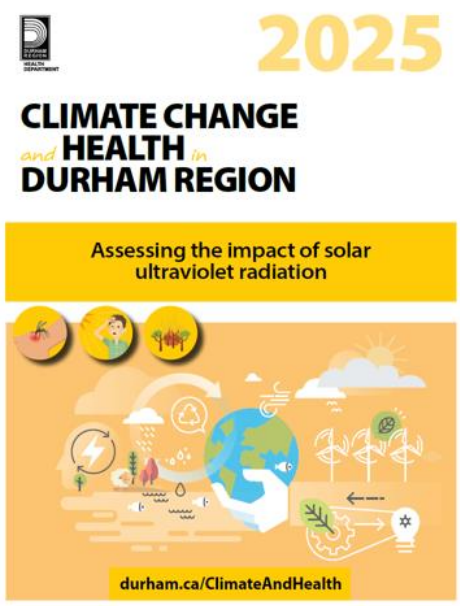
Assessing the impact of vector borne disease

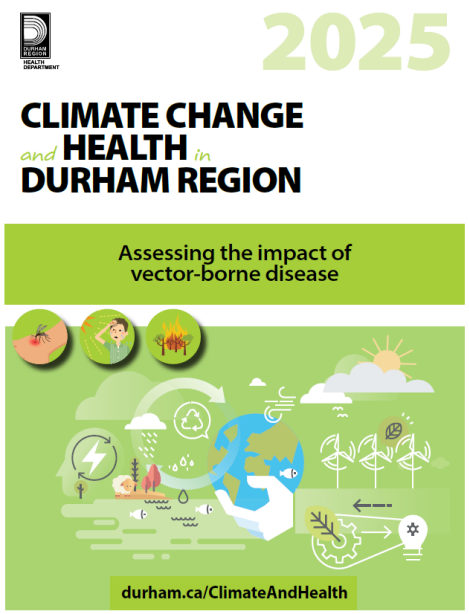


Assessing the impact of extreme weather

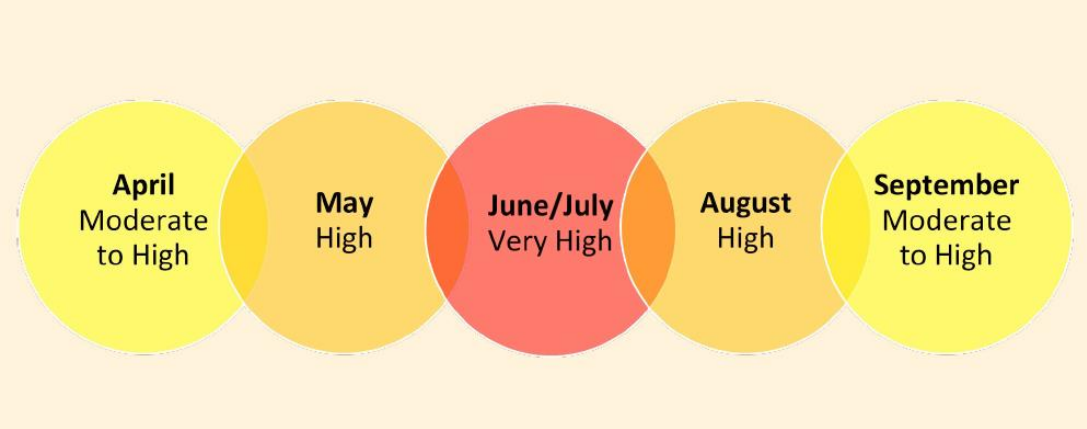
What are the report objectives?

- Clarify risks and health impacts
- Report on available data
- Prioritize equity
- Establish baseline





Overview of solar UVR exposure in Durham Region



- Solar UVR levels are highest in Durham Region from April to September between the hours of 11 am and 3 pm
- Approximately 60% of the day's total carcinogenic radiation is received before 2 pm

What are the health impacts of solar UVR?

UVR exposure is the main cause of sunburns and childhood sunburns and may increase risk of melanoma skin cancer later in life

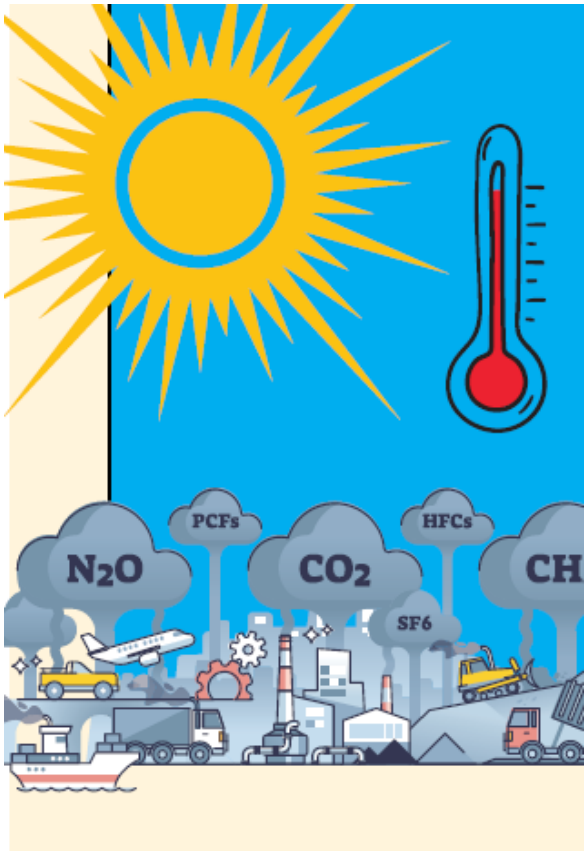
UVR exposure can cause premature aging of the eye which can lead to the development of cataracts

UVR exposure is the leading cause of skin cancer and the leading cause of environmentally acquired cancer in Ontario

Climate change is expected to increase the incidence of skin cancer in Durham Region in the coming decades

Climate change and local solar UVR exposure

- Climate change is expected to increase solar UVR in Durham Region
- Increased concentrations of greenhouse gases are expected to reduce overall protective cloud cover
- Warmer temperatures are expected to increase outdoor time and UVR exposures

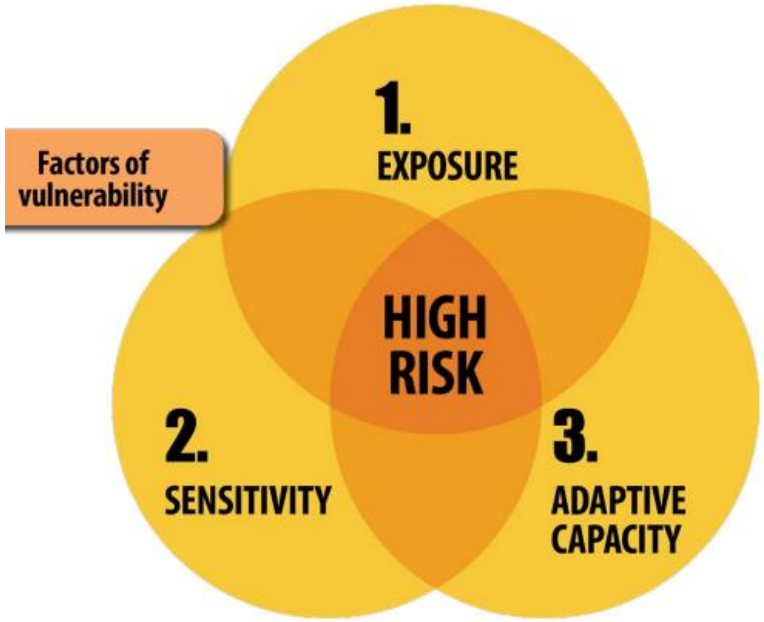


Who should be prioritized?

Priority Populations

- **Infants** and young **children**
- Individuals who:
  - sunburn easily, or have a **history of sunburn**
  - have a family **history of skin cancer**
  - use certain **medications**
  - **work** or are physically active **outdoors**

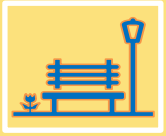
Factors of Solar UVR Vulnerability



What actions can support sun-protection?

Improve understanding of UVR exposure patterns among youth

Prioritize shade in settings frequented by children and youth

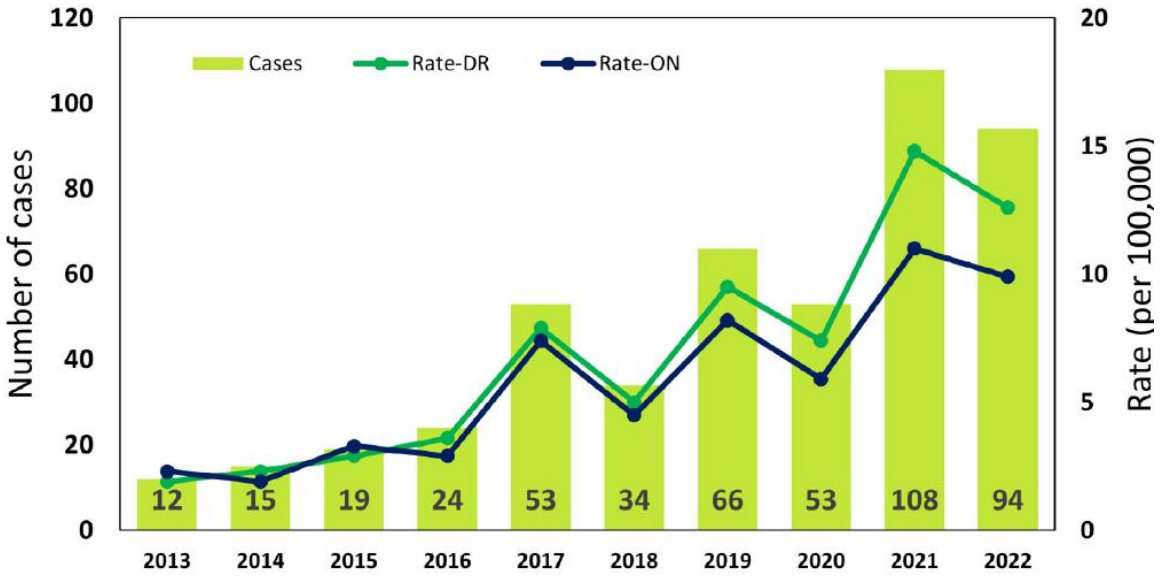


Assess shade access and distribution in high-exposure areas

Establish local tree canopy cover baselines and targets with a focus on equitable access

The growing risk of VBD in Durham Region

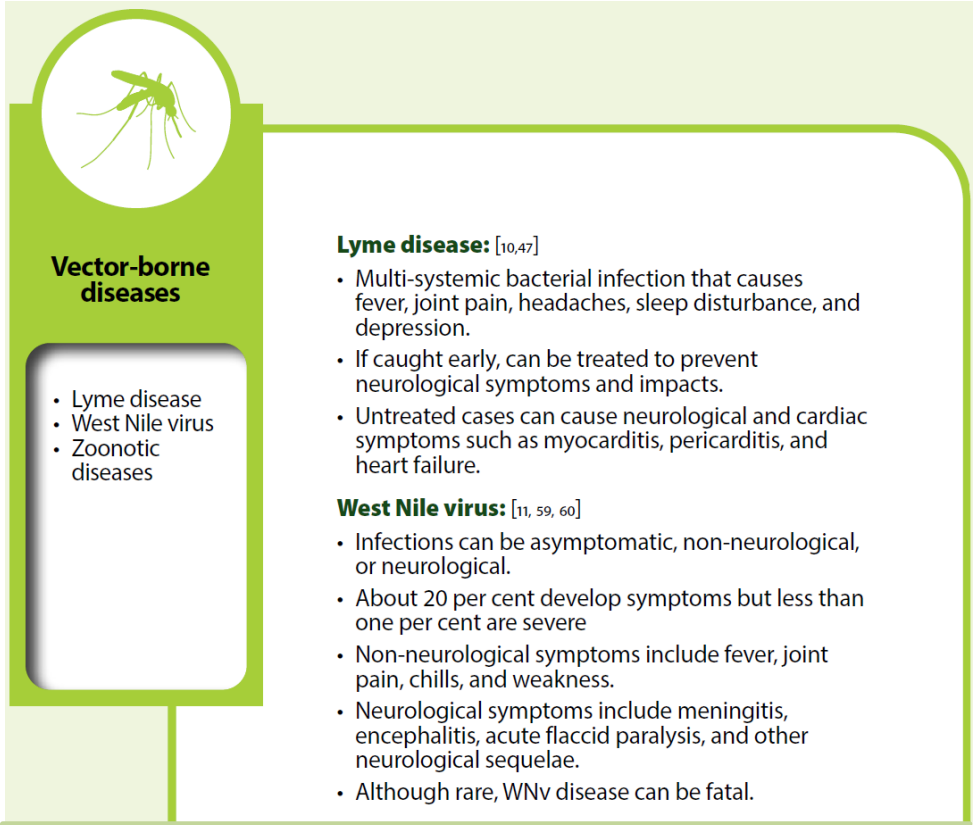
- Climate change is a key driver of the spread of disease carrying vectors
- Local health burden of Lyme disease (LD) and West Nile virus (WNv) disease is increasing
- Rise in vector populations is expected to continue
- New emerging VBDs



LD incidence in Durham Region and Ontario from 2013 to 2022

What are the health impacts of VBDs?

- Health impacts range from mild to severe
- Awareness of bites and associated symptoms are key to disease prevention
- Proactive health promotion is crucial



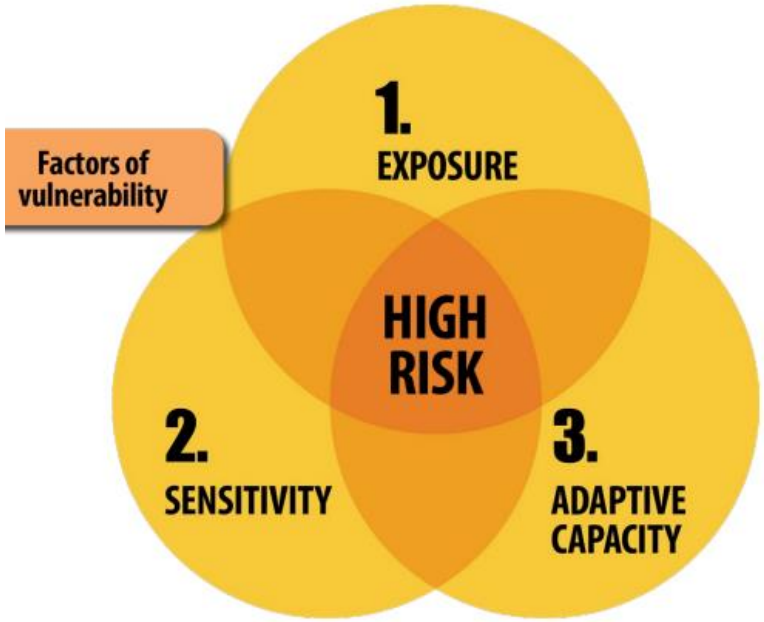
Direct negative health outcomes associated with VBDs in Ontario

Who is most susceptible?

Priority Populations

- **Older adults,** 60 years of age and older
- **Infants** and young **children**
- **Pregnant** individuals
- **Indigenous** Peoples
- People with a **weakened immune system**
- People who **work or spend time outdoors**

Factors of VBD Vulnerability



When is exposure highest?

LD – Nymph Ticks

LD - Adult Ticks

June – September

May – July

September – November

WNv – June to September (peak in August)

Climate change expands exposure season and vector populations

The challenge of low awareness and prevention

LD cases in Durham Region, 2019-2023

Risk Factors

80%	67%	62%	61%	58%
of cases reported	of cases reported	of cases reported	of cases reported	of cases reported
Activities in wooded or tall grass areas	Not checking for ticks after outdoor activities	Inadequate clothing protection during outdoor activities	Not using insect repellant during outdoor activities	Known tick bite or exposure to ticks

WNv disease cases in Durham Region, 2014-2023

Risk Factors

73%	73%	70%	63%
of cases reported	of cases reported	of cases reported	of cases reported
a mosquito bite or exposure to mosquitoes	not always wearing long sleeves, long pants and covered shoes when exposed to mosquitoes	not always using insect repellent	camping, hiking, working or other outdoor activities

WNV infected mosquitoes are most active from dusk to dawn and breed in standing water

Local strengths and opportunities

Durham Region's VBD Prevention and Response Plan

- Mosquito Surveillance & Control
- Site Inspections & Public Health Response
- Active Tick Surveillance
- Health Promotion & Public Awareness

Indigenous Knowledge and Collaboration

- Collaborative approaches
- Learning from Indigenous practices

Increasing capacity to prevent infections

- Enhanced protections for outdoor workers
- Targeted health promotion
- Engagement with priority populations
- Greater recognition of climate change's role

Learn more!

Visit:

- ✓ Durham.ca/ClimateAndHealth
- ✓ Durham.ca/SunSafety
- ✓ Durham.ca/Ticks
- ✓ Durham.ca/WestNileVirus

Subscribe:

- ✓ Email climate.health@durham.ca with "subscribe' in subject line

Thank you

www.durham.ca/ClimateAndHealth

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