



# Climate Change & Family Medicine

Temerty Medicine

Family Medicine Forum: November 9<sup>th</sup>, 2023
Samantha Green, MD CCFP
Assistant Professor, University of Toronto
Family Physician, St. Michael's Hospital
President-elect, Canadian Association of Physicians for the Environment

### **Disclosures**

Relevant relationships with commercial entities No financial disclosures

Potential for conflicts of interest within this presentation None

Steps taken to review and mitigate potential bias N/A

# Land acknowledgement

 We wish to acknowledge this land, which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations.

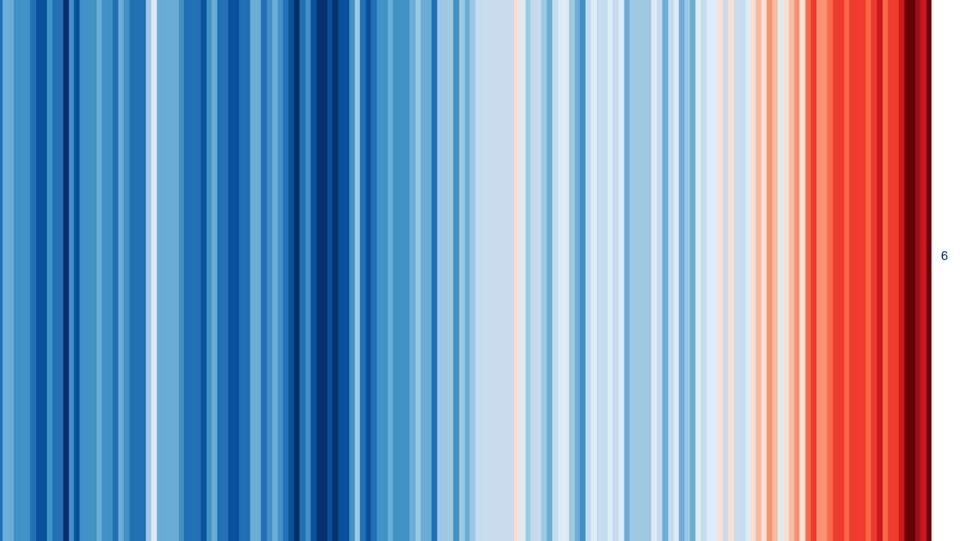
- Recognize the direct and indirect physical and mental health impacts of climate change in Canada
- 2. Demonstrate an appreciation for the inequitable impact of climate-related illness on marginalized and racialized populations.
- 3. Advocate for and participate in activities that promote environmental sustainability in the provision of healthcare and the practice of medicine.
- 4. Recognize opportunities to advocate at the micro, meso, and macro levels.

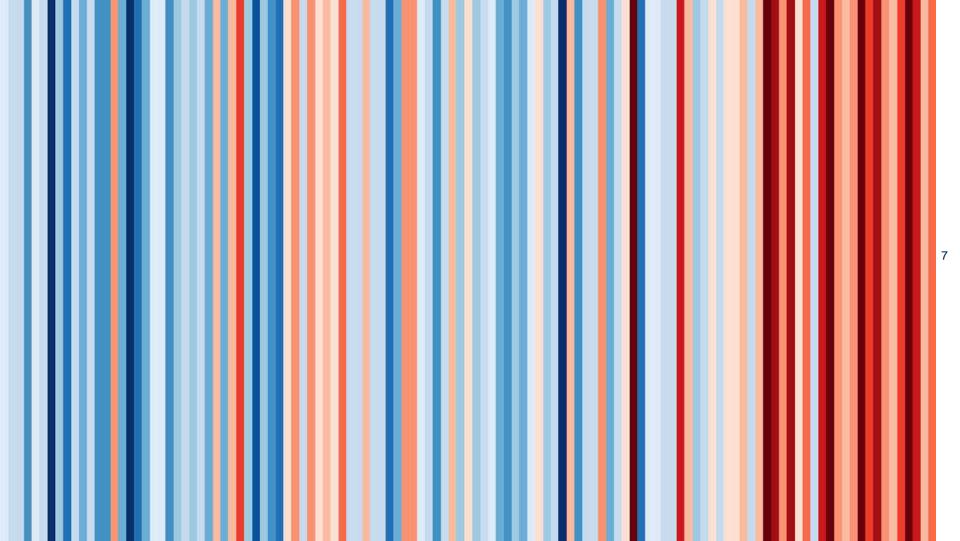
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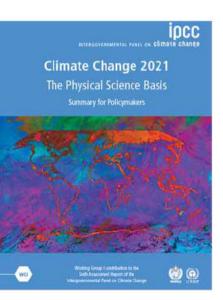
"The life of every child born today will be profoundly affected by climate change... without accelerated intervention, this new era will come to define the health of people at every stage of their lives."

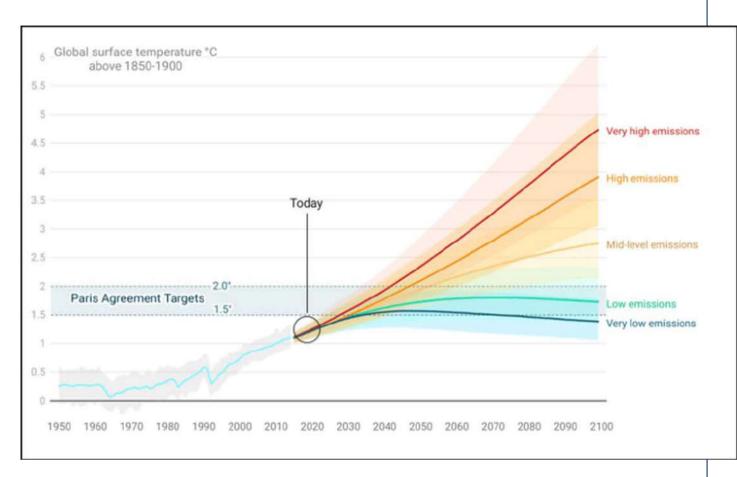
-Lancet Countdown on Health and Climate Change, 2019











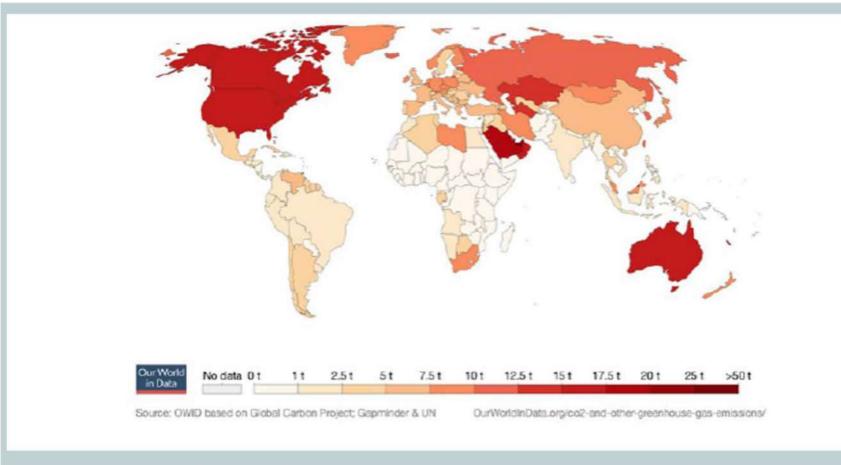
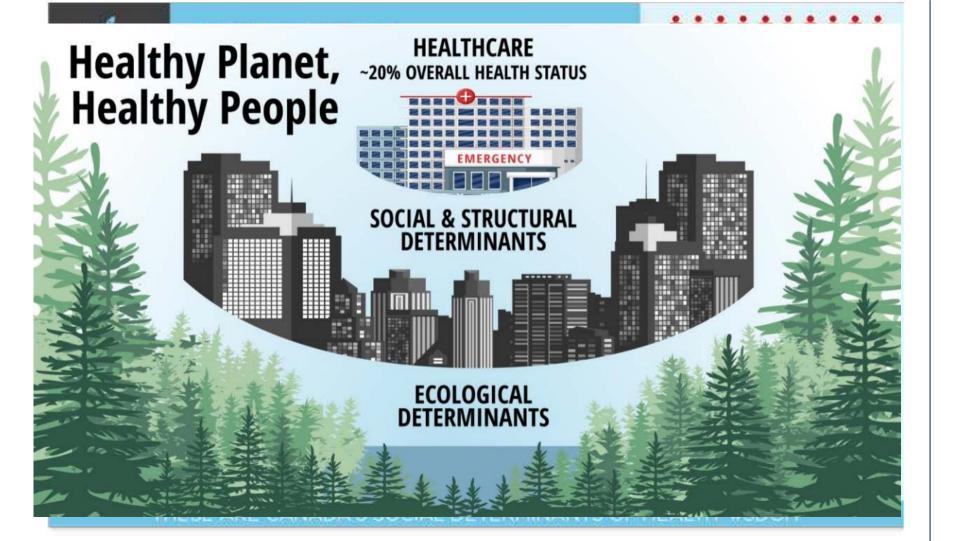


Figure 3: Average carbon dioxide (CO2) emissions per capita, 2016 (tonnes per year)
Data Source: (Ritchie and Roser, 2019)





· Healthcare facilities DROUGHTS18,19

Socioeconomic stress.2

closed due to flooding."

TICK-BORNE DISEASE

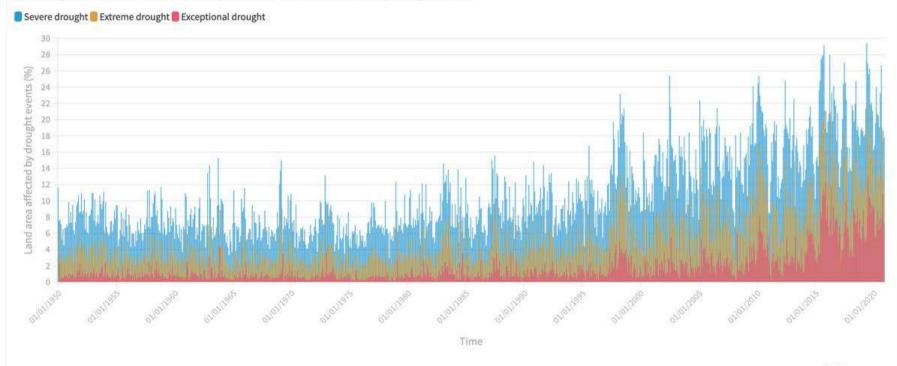
Lyme Disease in Ontario than 2012-2016 average.23

#### HEAT-RELATED ILLNESS24

66 people died in Montreal during 2018 heat wave.25

### **Land Affected by Droughts**

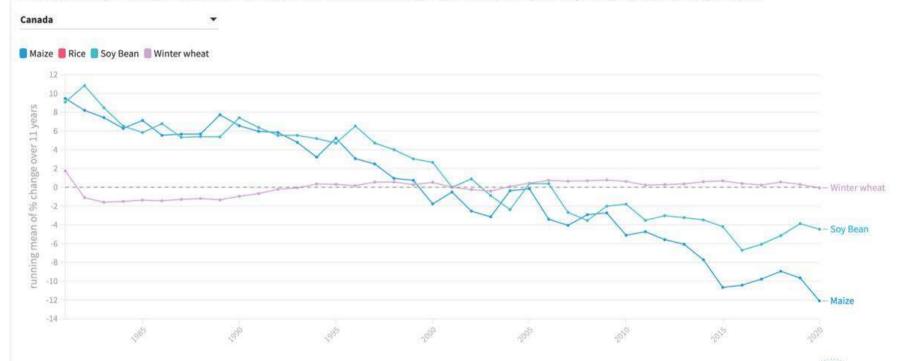
Percentage of land area affected by drought events per month, classified by drought severity





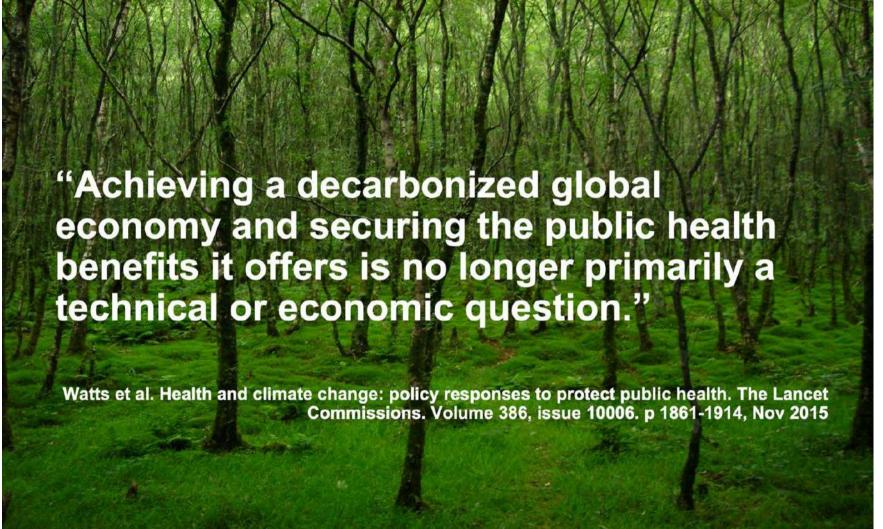
### **Change in Crop Yield Potential**

Percentage change in crop growth duration from a 1981-2010 baseline by country, 11-year rolling average (average for 5 years before and 5 years after)





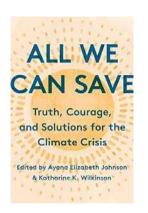


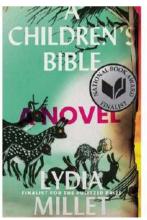


## Interested in learning more about the problem?

- annual Lancet Countdown report on climate change & health
- The Uninhabitable Earth, by David Wallace-Wells (grim)
- All We Can Save, edited by Ayana Elizabeth Johnson and Katharine Wilkinson
- A Good War by Seth Klein
- Generation Dread by Britt Wray
- Climate Change as Class War by Matthew T. Huber
- Podcasts What on Earth (CBC, Laura Lynch) & How to Save A Planet (American, Alex Blumberg & Dr. Ayana Elizabeth Johnson)
- online Canadian climate news: The Energy Mix, the National Observer
- Fiction: The Overstory, Greenwood, A Children's Bible, Migrations, American War, the Ministry for the Future









# An Exxon-funded scientist speak out

"There are definitely ways that [fossil fuel funding] can influe research," she tells **HEATED**, as the fight for university divesti heats up.

ARIELLE SAMUELSON

OCT 31 · PAID

**Catch of the Day:** Thanks to reader **Samantha**, we have a diverse catch for you today: **Stu, Arnold**, and **Leonard**, who are waiting not-so-patiently for stronger climate action.

Also treats.



# 1. Adaptation

# Fort McMurray hospital evacuation was 'calm' while flames raged close













CBC Radio · Posted: May 12, 2016 10:21 AM ET | Last Updated: May 12, 2016



The Northern Lights Health Facility in Fort McMurray can be seen in this photo as flames shoot into the sky. (Trevor Wilson/CBC)

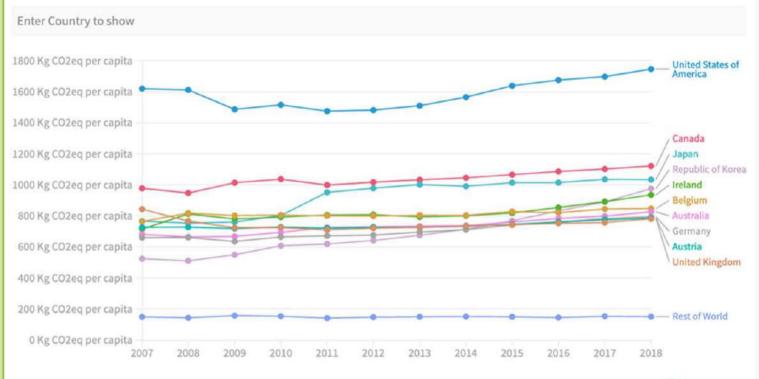
# 2. Mitigation

Canadian healthcare emissions of CO<sub>2</sub> and its equivalents contribute 4.6% of Canada's total emissions.



### **Healthcare Sector Greenhouse Gas Emissions**

Per capita carbon footprint of different health systems around the world

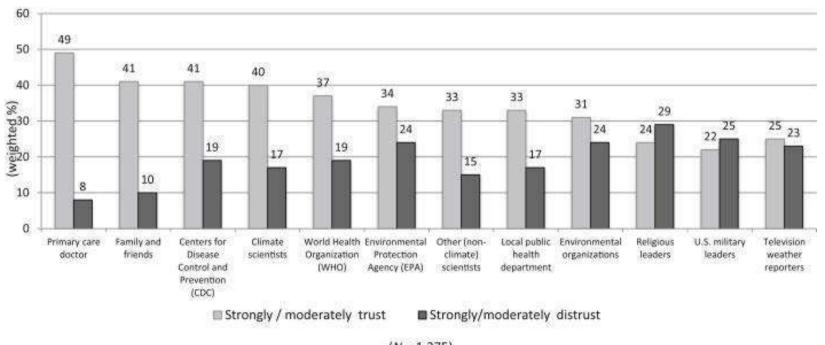


Please reference the 2021 Report of the Lancet Countdown if using this data •
For a full description of the indicator, see the 2021 report of the Lancet Countdown at lancetcountdown.org



# 3. Leadership

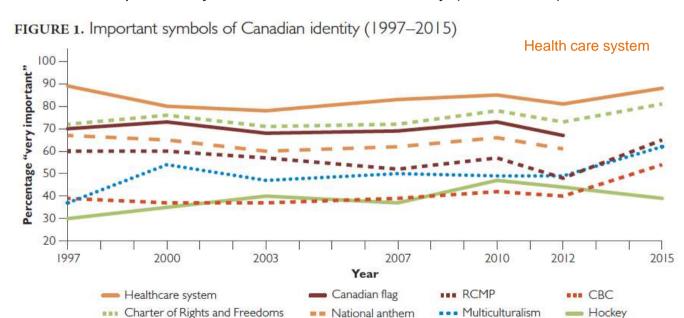
## WE ARE TRUSTED VOICES



(N = 1,275)

## 3. Leadership

### Important symbols of Canadian identity (1997-2015)



 $\mathsf{CBC} = \mathsf{Canadian} \; \mathsf{Broadcasting} \; \mathsf{Corporation}; \; \mathsf{RCMP} = \mathsf{Royal} \; \mathsf{Canadian} \; \mathsf{Mounted} \; \mathsf{Police}.$ 

Source: Data compiled from Environics Institute 2011, 2013, 2016, and Soroka and Robertson 2010.



# Climate Change is a Health Education Crisis

Students, Research, Education, Alumni, Faculty & Staff, Partnerships



The global leader in specialty medical education and care

Royal College Newsroom

# Professional practice

Home >

Sustainable health care: Simple efforts can reduce your practice's carbon footprint



January 11, 2022 | Author: Guest post



### Climate change is a health issue

Sarah Fraser

Canadian Family Physician October 2021, 67 (10) 719; DOI: https://doi.org/10.46747/cfp.6710719

Article

Figures & Data

eLetters

Info & Metrics

PDF

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There is something infinitely healing in the repeated refrains of nature—the assurance that dawn comes after night, and spring after winter.

"Rachel Carson, The Sense of Wonder1"

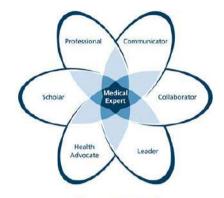
As awareness of the climate crisis escalates, our role in primary care is being reframed with urgency. Climate change is a fundamental determinant of health. As public health advocates, family physicians have a responsibility to engage seriously in environmental activism.



# Guide to Integrating Planetary Health in Family Medicine Training

**Developed by Residents for Residents** 

Every year, residents from family medicine residency programs representing every medical school in the country select a topic they believe warrants development and improvement in family medicine training. Typically, the **Guide for Improvement of Family Medicine Training** (GIFT) provides recommendations to family residency programs for enhancing current aspects of the curriculum. Exceptionally, GIFT 2020 addresses climate change and planetary health in family medicine education while also offering a conceptual framework for residents and practitioners alike.



# Canadian Medical Education Journal

**Emerging Concepts** 

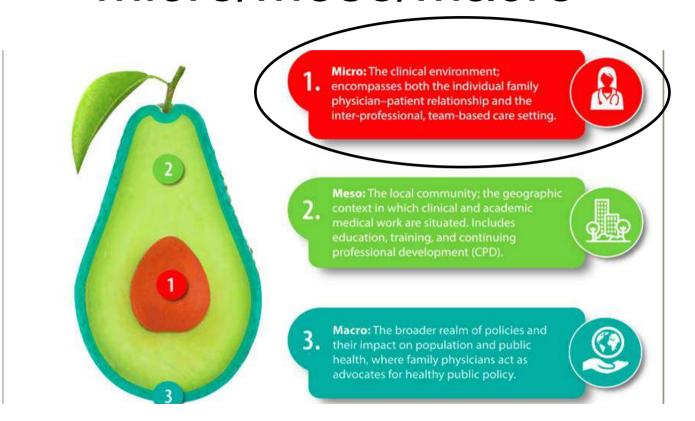
## Planetary Health in CanMEDS 2025

La santé planétaire dans CanMEDS 2025

Samantha Green,<sup>1</sup> Nicole Labine,<sup>2</sup> Owen Dan Luo,<sup>3</sup> Joe Vipond,<sup>4</sup> Husein Moloo,<sup>5</sup> Aimee Bouka, Brent Thoma<sup>2</sup>



# Micro/Meso/Macro



## Learn about local climate risks

### Staying Healthy in Hot Weather

Need to cool down? Find the cool space closest to you. Search by address, nearest intersection or view the interactive map.

Find a Cool Space

Hot weather can put your health at risk. Heat-related illness includes heat stroke, heat exhaustion, heat fainting, heat rash and muscle cramps. Finding and spending time in a cool space can help protect against the effects of hot weather.

### About Toronto's Heat Relief Strategy

Be informed about heat warnings and learn how Toronto responds to heat warnings.

### Hot Weather Plan for Landlords

Create a hot weather plan for your building to protect your tenants from extreme heat.

### Beat the Heat

Tips on how to stay cool and prevent heat-related illness, including tips for pets.

### **Additional Resources**

More information about heat and health. Protect yourself, your clients and your loved ones.

To assess whether someone is at risk, check all the personal factors that apply on the following list. The more boxes checked, the higher the potential risk.	
Older adult (60 years+)	The body's ability to cool itself is impaired as people age.
Mental illness or cognitive impairment	Conditions such as schizophrenia, depression, anxiety, and dementia can reduce awareness of heat-related risks.
Chronic disease	Chronic diseases such as diabetes, heart disease respiratory disease, and cancer can limit the body's ability to cool.
Living alone or socially isolated	People who live alone or do not have strong social connections are at higher risk because they have fewer people looking out for them.
Substance dependency or use	The ability to sense and respond to heat can be affected by use of drugs or alcohol, especially for those who are dependent.
Impaired or decreased mobility	People with impaired or reduced mobility might be less able to take protective measures during extreme heat events.
Medication use	Some prescription medications for common conditions can cause dehydration and affect the body's ability to cool itself.
Poor physical fitness	People who are not engaged in regular physical activity are less able to keep cool in the heat.



HOME

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WHAT'S NEW \*

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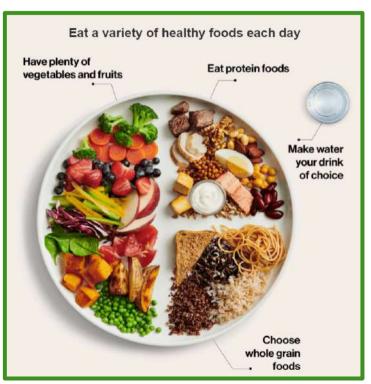


- Educate patients about AQHI
- portable HEPA air purifiers
- up-to-date Asthma & COPD Action plans
- inhaler refills





# Climate co-benefits = healthy habits









The Many Benefits of Being Active in Ontario's Green Space moodwalks.ca



Mood Walks supports the well-being of older adults who experience mental health issues through walking groups which visit Ontario's trails and conservation areas. For more information, or to get involved, please visit moodwalks ca









### **Data on Nature and Health**

Numerous studies have measured and analyzed the health impacts of accessible, abundent, and diverse nature. A few of the many finds are below:

The annual prevalence rate of 15 of 24 disease clusters was lower in living environments with more green space in a 1 km radius. The relation was strongest for anxiety disorder and depression. (3)



predicted a stronger sense of community and more social ties ith neighbors. (1

The average US employee spends 43 hrs/week at their workplace. Based on 2009 values, 90.3% of corporate offices are spent on safary, making employee well-being a valuable investment (4)

Symptoms of Attention Deficit Disorder (A.D.D.) in children were reported as significantly less after playing in natural areas outdoors (5)



Children on school grounds with a greater diversity of landscape and design are more physically active than those with asphalt or turf grass. (1)

of trees and landscape took on average 11 fewer hours at sick leave per year (4)

Trees and vegetation provide shade. reduce the heat island effect and trap airborne pollutants, benefiting air quality (respiratory health) and cooling costs. They also filter groundwater, control erosion, and absorb water, which minimize stormwater runoff, flooding and pollution to our water systems. (1) Native plants require less chemicals and watering

Measured using a mobile EEG headse moving from built urban green space showed real time excitement. engagement, drops increase in

When people have views of nature or spend time in nature, they perform better on tasks that require focused attention

Patients with views of nature recover from surgery more quickly and with fewer medications.

Psychological benefits of green spaces are enhanced with increased diversity of species, (2)



- American Public Hearth Association, Policy and Advocacy, (2013, November 05), Improving Hearth and Varience Strong Recess in Nature Paricy Statement, Rest New Advocacy, (2014).
   American Public Hearth Association and advocacy, (2013, November 05), Improving Hearth Strong Reacht and Natural Paricy Statement, Rest New Advocacy, (2014).
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Nature expoure

benefits extend

staff, whose

alertness and

well-being is crucial to

patient health

www.natureconnectionslax.org



### Cycling for health

### Improving health and mitigating the climate crisis

Samantha Green, Peter Sakuls and Sarah Levitt

Canadian Family Physician October 2021, 67 (10) 739-742; DOI: https://doi.org/10.46747/cfp.6710739

Article eLetters Info & Metrics

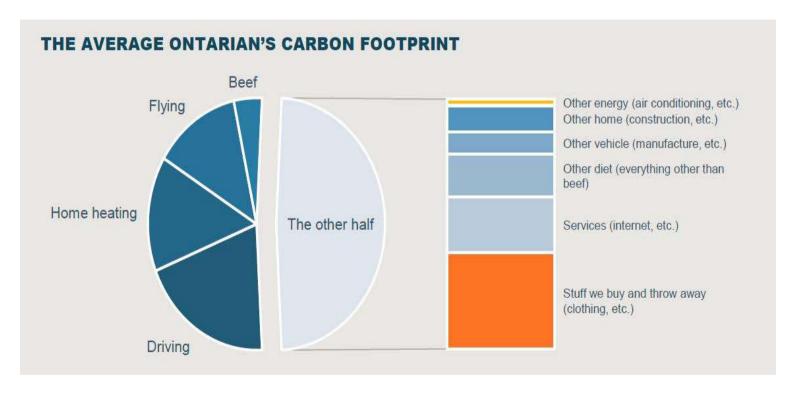
#### Abstract

**Objective** To review the literature about cycling and health, and to provide an overview and discussion of the available evidence.

**Sources of information** The MeSH terms *bicycle* and *transportation* were searched in PubMed. Clinical trials, practice reviews, and systematic reviews were included. All reference lists were reviewed for additional articles.

Main message Climate change is a threat to health. In Canada alone, transportation is the second largest source of greenhouse gas emissions. Active transportation, which is any form of human-powered transportation, can mitigate the health effects of the climate crisis while simultaneously improving the health of people. Physical activity improves overall well-being, as well as physical and mental health. Active transportation, particularly cycling, is a convenient way to meet physical activity targets, reduce risk of disease and all-cause mortality, and derive mental health and social benefits. Family physician advocacy for active transportation has been shown to increase cycling

# Areas for personal action



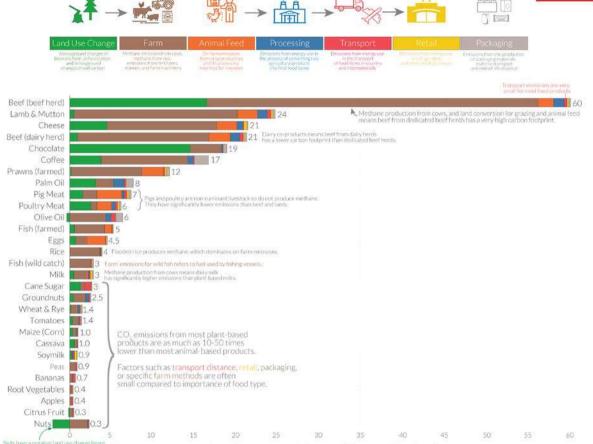


TAKE ACTION

LEARN MORE

#### Food: greenhouse gas emissions across the supply chain



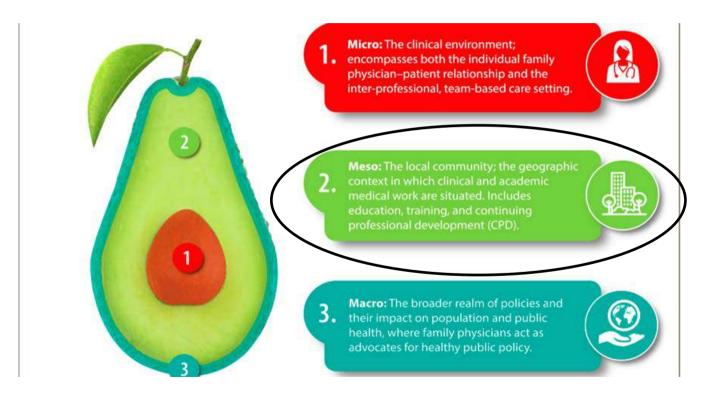


Greenhouse gas emissions per kilogram of food product (kg CO<sub>a</sub>-equivalents per kg product)

# Perfection is the enemy of the good.



## Micro/Meso/Macro



"Healthcare facilities are the operational heart of service delivery – protecting health, treating patients and saving lives. Yet health sector facilities are also a source of carbon emissions, contributing to climate change. This is perhaps ironic – as medical professionals our commitment is to 'first, do no harm'. Places of healing should be leading the way, not contributing to the burden of disease."



## Health systems change



**Environmental Sustainability Advisory Committee** 

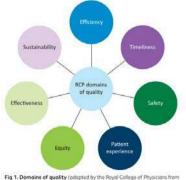
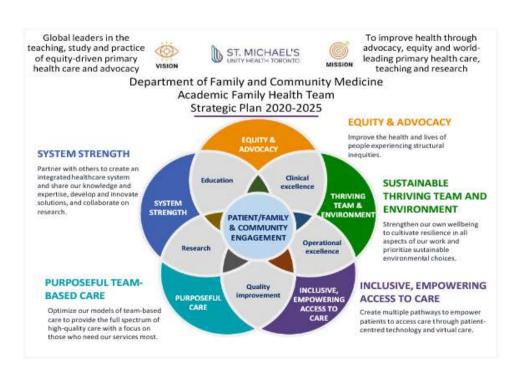


Fig 1. Domains of quality (adapted by the Royal College of Physicians from the Institute of Medicine).<sup>1</sup>

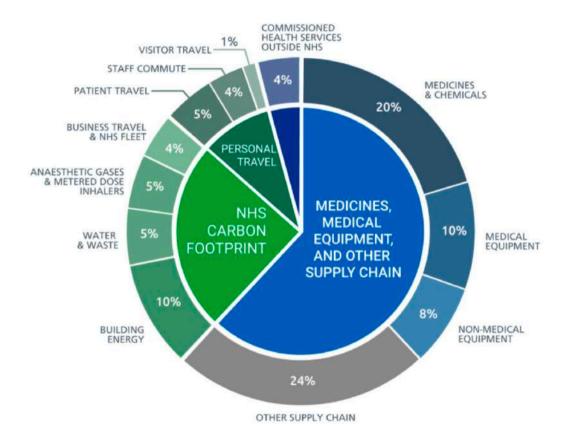




Canada has signed onto the @WHO #COP26 initiative on resilient, low-carbon health systems.

#climatechange poses significant public health risks & decarbonizing our healthcare systems is an important step on the path to net-zero.

@jyduclos @courtghoward



NHS. Sustainable Development Unit. 2019



#### Reduce Demand for Health Services



Social Determinants of Health



Health Promotion





Chronic Disease Management



#### Match Supply of Health Services to Demand



Primary and Community Care Services



Ensure Appropriateness of Care



Stewardship Programs



#### **Reduce Emissions from Supply of Health Services**



Green Infrastructure



Coordinated Care Delivery



Decarbonised Transport



Integrated Technology Systems



Circular Economy in Supply Chains



Virtual Care



## Screen for Life

## Cancer screening sees what you can't



Breast



Cervical



Colorectal

Preventative Care	Treatment
Cost of a precancerous colonic polyp:	Cost of Colon Cancer:
\$600	\$44 000



#### **Reduce Demand for Health Services**



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Disease Prevention



Chronic Disease Management



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Circular Economy in Supply Chains



Virtual Care



The report found that up to 30% of the tests, treatments and procedures associated with the 8 selected CWC recommendations are potentially unnecessary.







Social Determinants of Health



Health Promotion



Disease Prevention

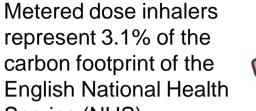


Chronic Disease



Service (NHS)







km car journey4



#### Match Supply of Health Services to Demand



Primary and Community Care Services







#### **Reduce Emissions from Supply of Health Services**









Coordinated Care Delivery



Integrated Technology Systems



Virtual Care

MacNeill A, McGain F and Sherman J. Planetary Health Care: A Framework for Sustainable Health Systems, Lancet Planetary Health 2021



#### **Reduce Demand for Health Services**



Social Determinants of Health



Health Promotion



Disease Prevention



Chronic Disease Management



#### Match Supply of Health Services to Demand



Primary and Community Care Services



Ensure Appropriateness of Care



Stewardship Programs



#### **Reduce Emissions from Supply of Health Services**





Coordinated Care Delivery



Decarbonised Transport



Integrated Technology Systems



Circular Economy in Supply Chains



Virtual Care



The official journal of the College of Family Physicians of Canada

## End of the roll for examination table paper?

Eugenie Waters MD CCFP





Did you Know...

Using exam bed paper does **not** reduce the spread of infections.

This examination table has been safely disinfected.





#### **Reduce Demand for Health Services**



Social Determinants of Health



Health Promotion



Disease Prevention



Chronic Disease Management



#### Match Supply of Health Services to Demand



Primary and Community Care Services



Ensure Appropriateness of Care



Stewardship Programs



#### **Reduce Emissions from Supply of Health Services**





Coordinated Care Delivery





Systems



















## Support for Sustainable Health Care is Growing



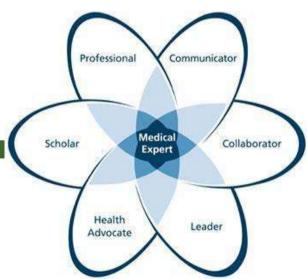
ASSOCIATION MÉDICALE CANADIENNE



CANADIAN
MEDICAL
ASSOCIATION

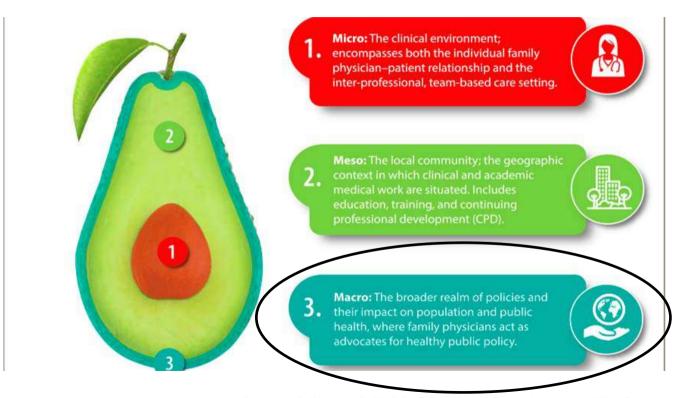
THE ASSOCIATION
OF FACULTIES
OF MEDICINE
OF CANADA

CASCADES in a Climate Crisis
CASCADES Créer un système de santé canadien durable face à la crise climatique



CANMEDS

## Micro/Meso/Macro



Buchman S, Woollard R, Meili R, Goel R. Practising social accountability. From theory to action. Can Fam Physician 2016;62:15-8. (Eng), 24–7 (Fr).



Doctors for XR @DoctorsXr · Oct 24 \*BREAKING\*

The editor of @TheLancet, one of the most prestigious medical journals in the world, has come out officially asking all health professionals to engage in non-violent social protest to protect people from the climate & ecological breakdown.

Yes you heard that right.



348

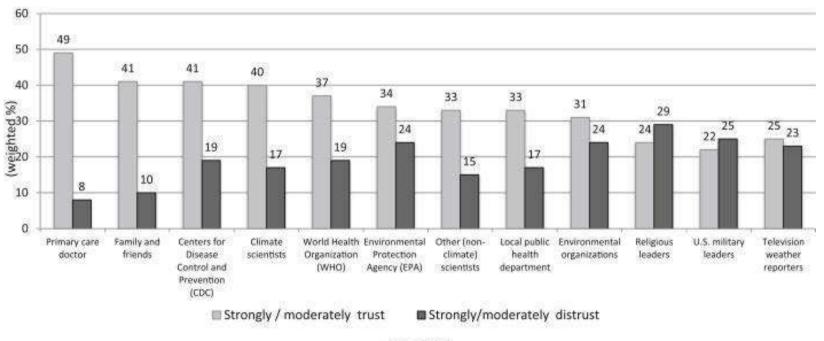
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13.3K

Show this thread

52

## WE ARE TRUSTED VOICES



(N = 1,275)

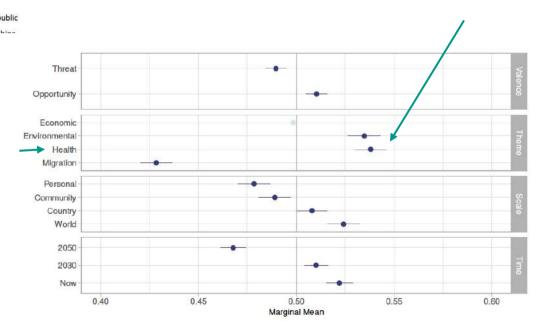
#### [DRAFT NOTE - 26 JANUARY 2021]

## How Do Different Frames Affect Public Support for Climate Change Policy: Evidence from a Multi-Country Conjoint Study

Niheer Dasandi<sup>i</sup>, Hilary Graham<sup>ii</sup>, David Hudson<sup>i</sup>, Slava Jankin Mikhaylov<sup>iii</sup>, Jennifer vanHeerde-Hudson<sup>iv</sup> & Nick Watts<sup>v</sup>

Abstract: This study tests the effects of different framings of climate change messages on public support for mitigation policy using conjoint survey experiments conducted in five countrie—China Germany, India, the UK, and the USA. We consider four different types of climate change valence (positive vs. negative), theme (economic, environmental, health, and migratio (individual, community, country, and global), and timeframe (2050, 2030, now). The analysis: the effects of these different frames on individuals who are not concerned by the effects o change. Our results show a positive framing, in terms of the opportunities they provide, i support for mitigation policies. We also find that an environmental and health framing o change increases public support for mitigation, while a migration framing reduces public suppart environmental and health framing of change increases public support for mitigation than at an individual level, and discussing the impacts of climate change leads to greater support than future impacts. Our analysis also fin positive framing and a health framing of climate change also increase support for mitigation among those not concerned by the effects of climate change.

### How to talk about climate change

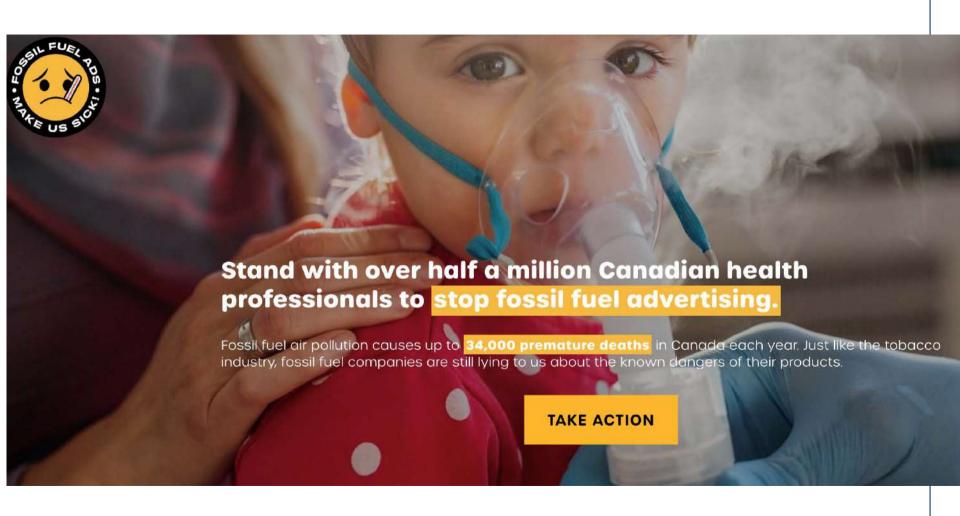




"Meeting the targets of the Paris climate agreement would be expected to save over one million lives a year from air pollution alone by 2050, according to the most recent assessment. The same analysis shows that the value of the health gains would be approximately twice the cost of the policies."

- World Health Organization, 2018







HANDS OFF THE GREENBELT!

#### TAKE ACTION

First Name

Last Name

@ Email

Province

■ Postal Code

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LETTER Show/ Hide

Additional Comments





## 400 doctors stand up against fossil fuel expansion

We must act quickly to reduce climate pollution and minimize climate-related health threats such as extreme heat, wildfire smoke, and extreme weather events, writes Samantha Green

By Samantha Green

Sunday, June 4, 2023 § 1 min to read









## THE LANCET Planetary Health



Supplementary Material

References

Article Info

Medical conferences aim to improve health outcomes worldwide yet contribute substantially to global warming and climate breakdown. This is a paradox which cannot continue.

Climate change is the "biggest global health threat of the 21st century" and is causing an increase in heatwaves, wildfires, floods, oles étudiants en médecine pour droughts and crop failures, vector-borne diseases, mass migration, and is associated with an increase in air pollution. The evidence cet événement! #LesVivats2019 is unequivocal and the vast public health effects of the climate crisis mandate that the medical community reconsider its role in contributing to this global catastrophe.

With thousands of carbon-intensive flights, hotel stays, single-use merchandise, and food and plastic waste, the environmental profile of medical conferences is disastrous. Surprisingly, this profile has hardly changed despite the alarming evidence of growing environmental threats to health.<sup>2</sup> and multiple calls to action for and from health professionals to tackle this impending health

2019 @LotoQuebec pour les événements et de plus de 500000\$ est attribué à @IFMSA mblée 2018 à Montréal. Un très grand bravo à ls, ples étudiants en médecine pour ncde cet événement! #LesVivats2019



03-6

6:32 PM - 28 oct. 2019 - Twitter Web App

https://www.thelancet.com/action/showPdf?pii=S2542-5196% 2820% 2930003-6

