Climate Change and Kids: Health Effects & Communication Strategies for Pediatricians

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Co-Chair, ME AAP Environmental Health

& Climate Change Committee

Disclosures

None of the planners or speakers for this activity have relevant financial relationships to disclose.

Learning Objectives

- Describe how climate change is affecting children's health
- Explore practical strategies for discussing climate change with patients and families
- Identify ways pediatric clinicians can get involved in education and advocacy around climate change

Roadmap

- **Motivation – Why talk about climate change?**
- Clinical situation – What *are* the health effects of CC on kids*?
- Communication – why don't we talk about CC with our patients, why should we, and how can we?
- Education – where can we learn more?

*We'll focus on kids in Maine for this talk

Disclaimers

I’m not a climate scientist – I’m a pediatrician

I’m assuming a general agreement that climate change is real, it is happening now, and it is largely human-caused.

This is a huge topic – we’re just starting the conversation today.

This talk is not meant to be doom and gloom!

Approaching from a place of hope and agency: We have a choice

Art: Adam Simpson on https://www.newscientist.com/article/mg22329760-500-we-can-build-a-sustainable-world-if-you-want-it/
Idea: Lisa Patel

Why are we talking about this?

Climate change is a *health issue* – and presents a huge opportunity!

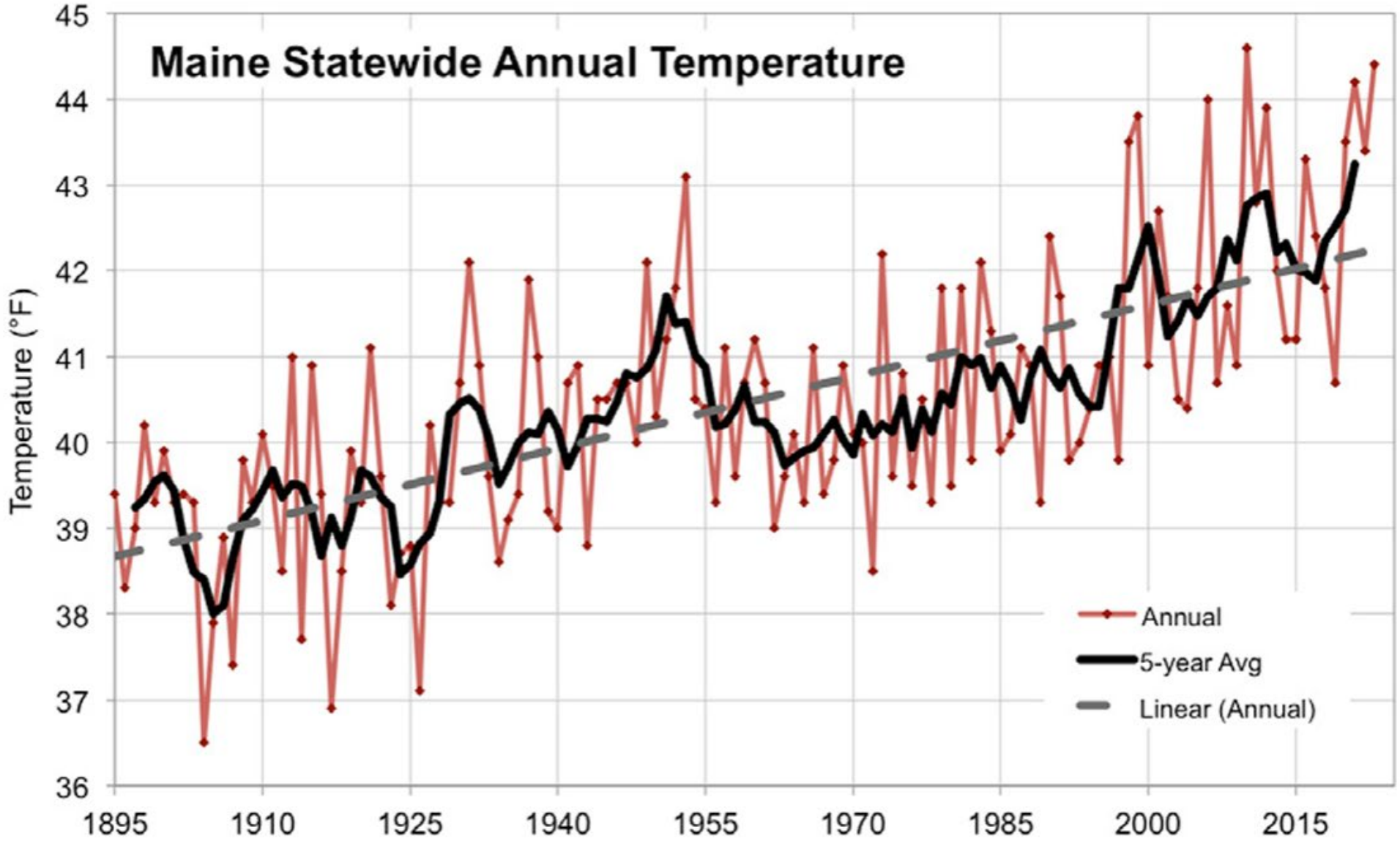
Pediatricians are uniquely poised to care and advocate – because we think about kids' futures

People listen to us (no really, they do!)

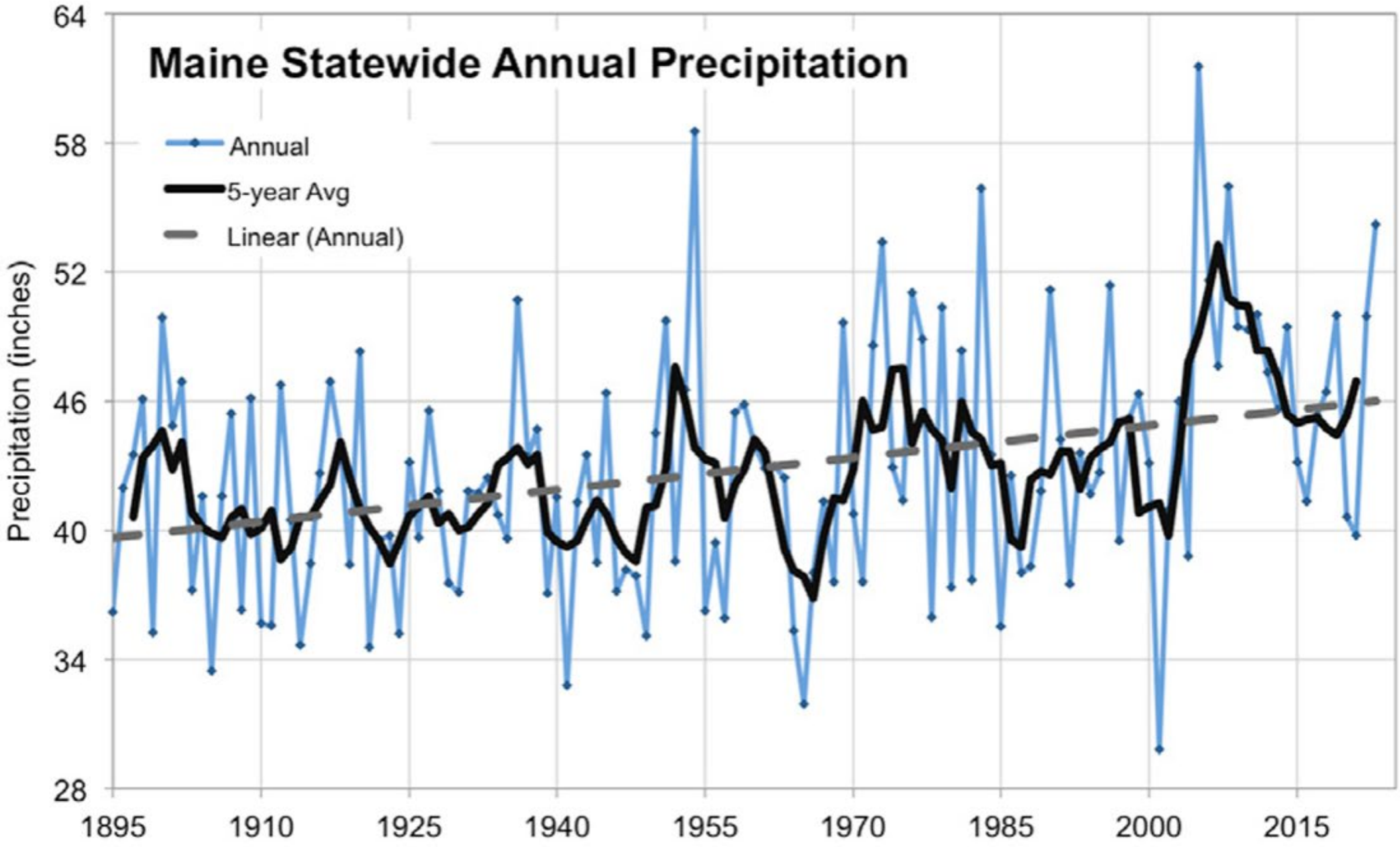
Setting the Stage: Climate Change in Maine

Maine is getting hotter and wetter, and experiencing more extremes

- Winter is warming fastest (5F compared to a century ago)
- Warm season for 2010-2023 is 2 weeks longer, and winter is 2 weeks shorter, compared to 1901-2000
- Interannual precipitation variability is increasing – dry periods are drier, wet periods are wetter
- More days of extreme heat
- Storms are more extreme



Maine Climate Council Scientific and Technical Subcommittee. *Scientific Assessment of Climate Change and Its Effects in Maine, 2024 Update*. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/STS_2024_digital.pdf



Maine Climate Council Scientific and Technical Subcommittee. *Scientific Assessment of Climate Change and Its Effects in Maine, 2024 Update*. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/STS_2024_digital.pdf

Roadmap

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- **Clinical situation – What *are* the health effects of CC on kids*?**
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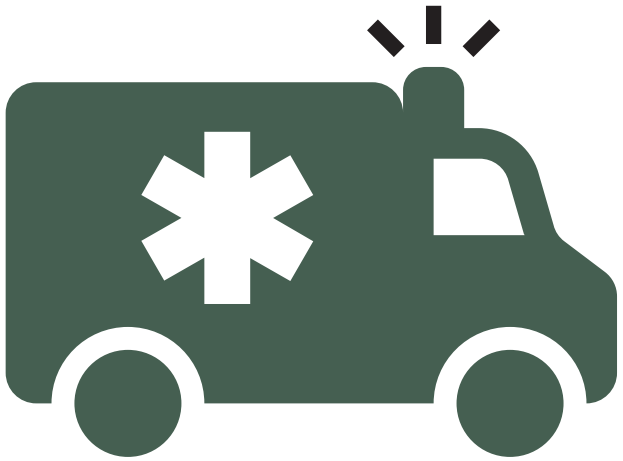
Health effects of climate change on Maine's kids

Kids are uniquely vulnerable to the effects of climate change.

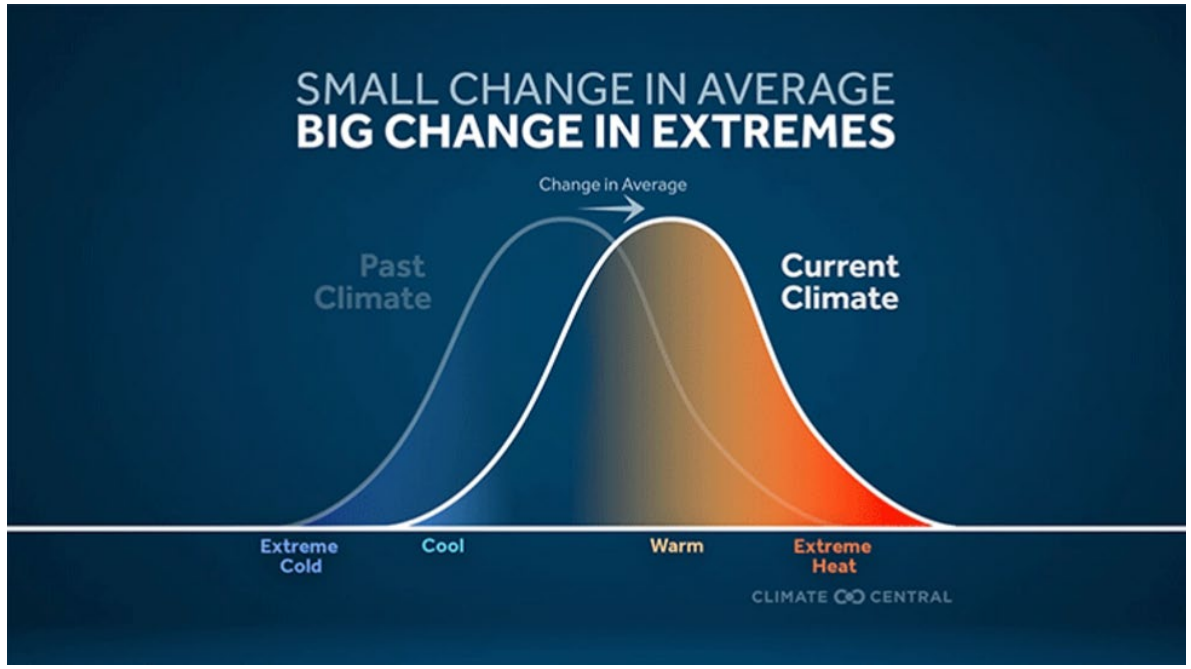
- Higher exposure to air/food/water per kg
- Unique behavior and developmental stages
- Changing physiology
- Dependence on caregivers



Case 1

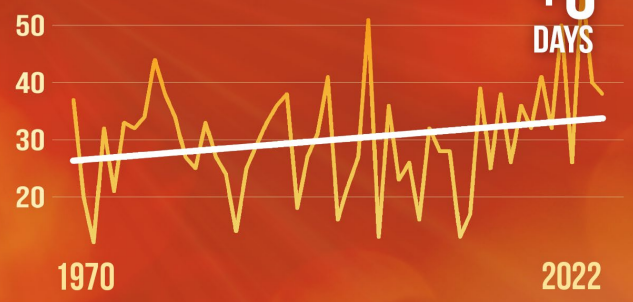
You are a pediatric hospitalist on shift in mid-August. You get a consult from the ED to see a 14-year-old male football player who was brought in by EMS after becoming dizzy and vomiting during a preseason practice.

Extreme Heat in Maine?



PRESQUE ISLE

DAYS ABOVE 80°



Change in annual days above 80° based on rate of change since 1970.
Source: RCC-ACIS.org

CLIMATE CENTRAL

PORTLAND, ME

DAYS ABOVE 80°

Change in annual days above 80° based on rate of change since 1970.
Source: RCC-ACIS.org

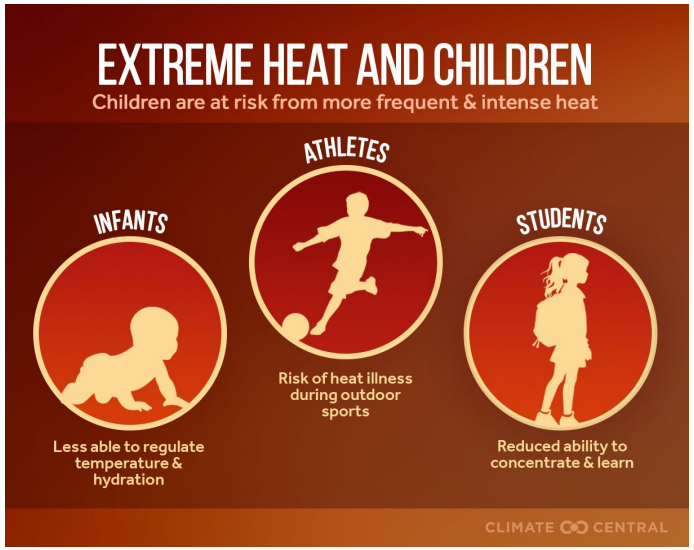
CLIMATE CENTRAL

BANGOR

DAYS ABOVE 80°

Change in annual days above 80° based on rate of change since 1970.
Source: RCC-ACIS.org

CLIMATE CENTRAL



Heat and Kids

- Heat-related illness
- Learning and school performance
  - ME, NH, VT are among the states with highest projected learning losses per child from high and low A/C coverage. (EPA 2023)
- Social-emotional: outdoor play, interaction with other kids
- Reduced efficacy of some medications

Times Record

Another heat wave means early release for some Midcoast students

SAD 75 closed three elementary schools early Thursday afternoon due to extreme heat.

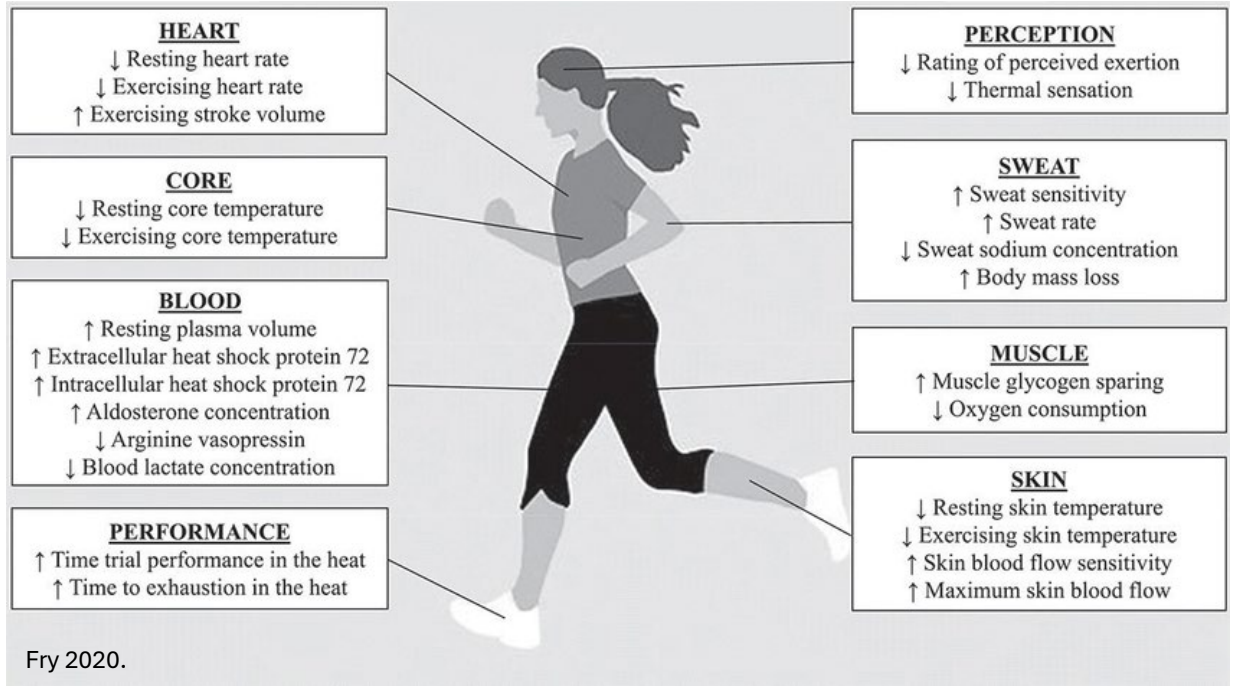
Posted September 7, 2023 Updated September 7, 2023

Maria Skillings
Times Record

Physiologic Acclimatization

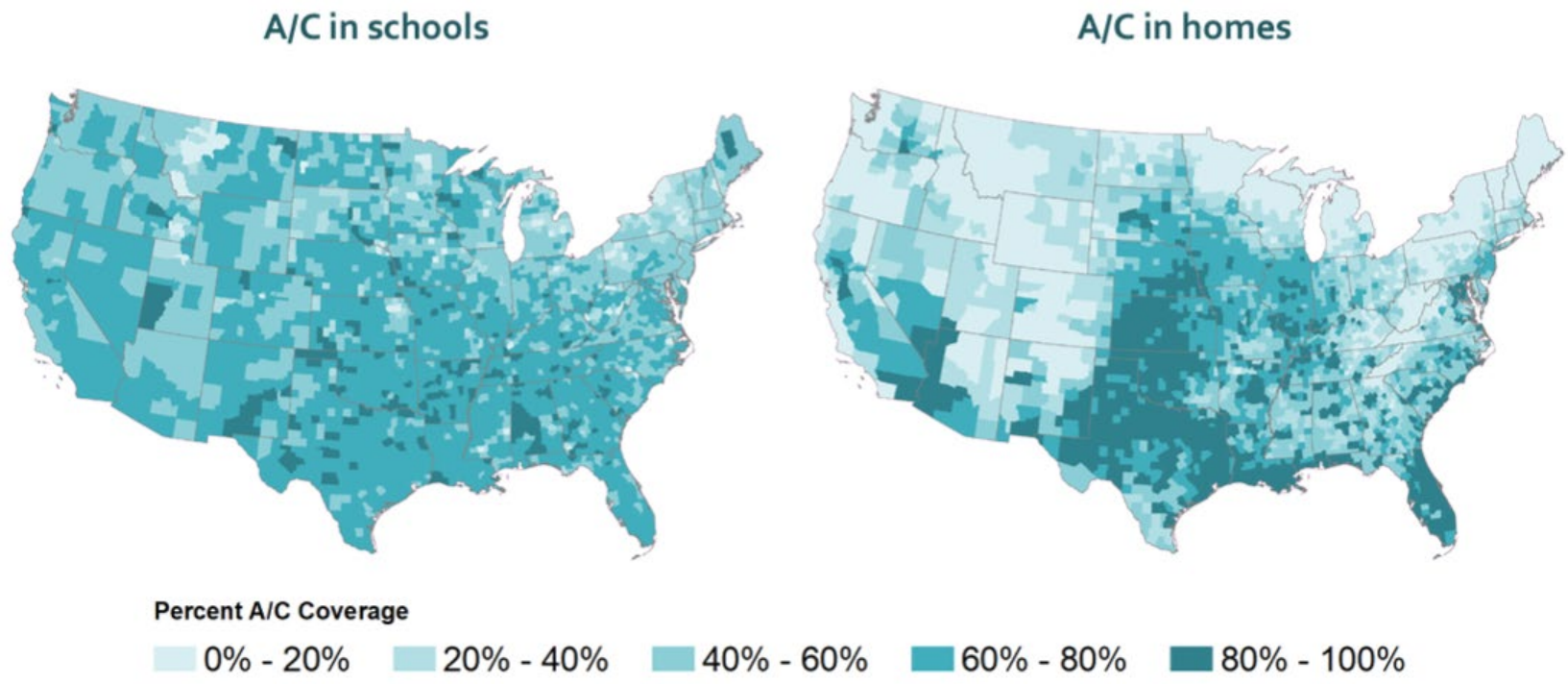
Cat. 1	Cat. 2	Cat. 3	Activity guidelines
<76.1°F	<79.8°F	<82.1°F	Normal activities – Provide at least three separate rest breaks each hour with a minimum duration of 3 minutes each during workout.
76.2-81°F	79.9-84.6°F	82.2-87°F	Use discretion for intense or prolonged exercise; provide at least three separate rest periods each hour with a minimum duration of 4 minutes each.
81.1-84.1°F	84.7-87.7°F	87.1-90°F	Maximum practice time: 2 hours. For football, restrict players to helmet, shoulder pads and shorts during practice. For all sports, provide at least four separate rest breaks each hour with a minimum duration of 4 minutes each.
84.2-86.1°F	87.8-89.7°F	90.1-91.9°F	Maxmum practice time: 1 hour. For football, no protective equipment during practice, and no conditioning activities. For all sports, provide at least 20 minutes of rest breaks distributed through the practice.
>86.2°F	>89.8°F	>92°F	No outdoor workouts. Delay practice until a cooler wet bulb globe temperature is reached.

The Conversation (CC BY-ND); Source: "Regional Heat Safety Thresholds for Athletics in the Contiguous United States," by Andrew Grundstein et al., in Applied Geography, Vol. 56; January 2015



Fry 2020.

Infrastructure



Notes: The top map shows average daily maximum temperatures (°F) at the county level during state-specific school calendar years in the baseline considered across this analysis (1986-2005). The middle and bottom maps show the current coverage of A/C at the county level, assembled from various sources described in Appendix B.

EPA. 2023. Climate Change and Children's Health and Well-Being in the United States. U.S. Environmental Protection Agency, EPA 430-R-23-001.

Readiness

HeatReady Schools

Action Area	Recommendation	Score	Goal (timeline)	
1. School Policy	1a. Our school has formal guidelines for heat-related actions taken within the school.[1]			
	1b. Our school has a plan for communicating effectively with parents about heat in a way that's accessible to many parental needs.			
2. Environment	2a. Our school plants vegetative barriers on the school grounds (bushes, trees, dense planting) to protect students from heat.[7]			
	2b. Our students have access to a reusable water bottle for			
3. Training	3a. To prepare for the heat season, our school requires all active members at the school to take a free annual heat training (example: teachers, students, and parents).[10]			
	3b. Our school collaborates with the public health department			
4. Prevention	4. Prevention (continued)	4g. Our school explains heat preparedness plans in school board and PTA meetings before and during warm season.		
		4h. Our school changes the time and intensity of gym classes and sports practice when it's dangerously hot.[12, 13]		
		4i. Our school gets outside resources for providing cooling supplies (ice packs, ice vests, water bottles, electric fans, cool towels, etc.) to their nurse(s) to help students in need.[14]		
		4j. Our school includes monitoring heat illness instances in their current health tracking system(s) through classroom teachers, recess and sports coaches, librarians, etc.[15]		
	5. Community	5a. Our school encourages parents to include the child's susceptibility to heat illness as a factor in the student's health information.[16]		
		5b. Our school ensures that students/staff have access to heat relief area(s)/protective gear (example: trees, shade sails, or personal umbrellas) during long wait times outdoors in the walking and car/bus loading areas.		
		5c. Our school is connected to a network of other schools that shares best practices and guidance on heat readiness.[14, 17]		
		5d. Our school is involved in community cooling efforts for		

Shortridge et al. 2022

Are There Any State-Level Temperature Standards In The Works For Schools?

Several examples of potential legislation exist at the state level in Mississippi (classrooms must be air-conditioned for schools to be accredited), Connecticut (schools with air conditioners must maintain temperatures below 78°F), Washington (schools must be "reasonably free of... excessive heat"), and Hawaii (classrooms must be a "temperature acceptable for student learning") and a bill is being considered in New York (cooling action must be taken at 82°F; classrooms can't be occupied above 88°F).

https://fas.org/publication/extreme-heat-schools/

Maine High School Sport Safety Policies

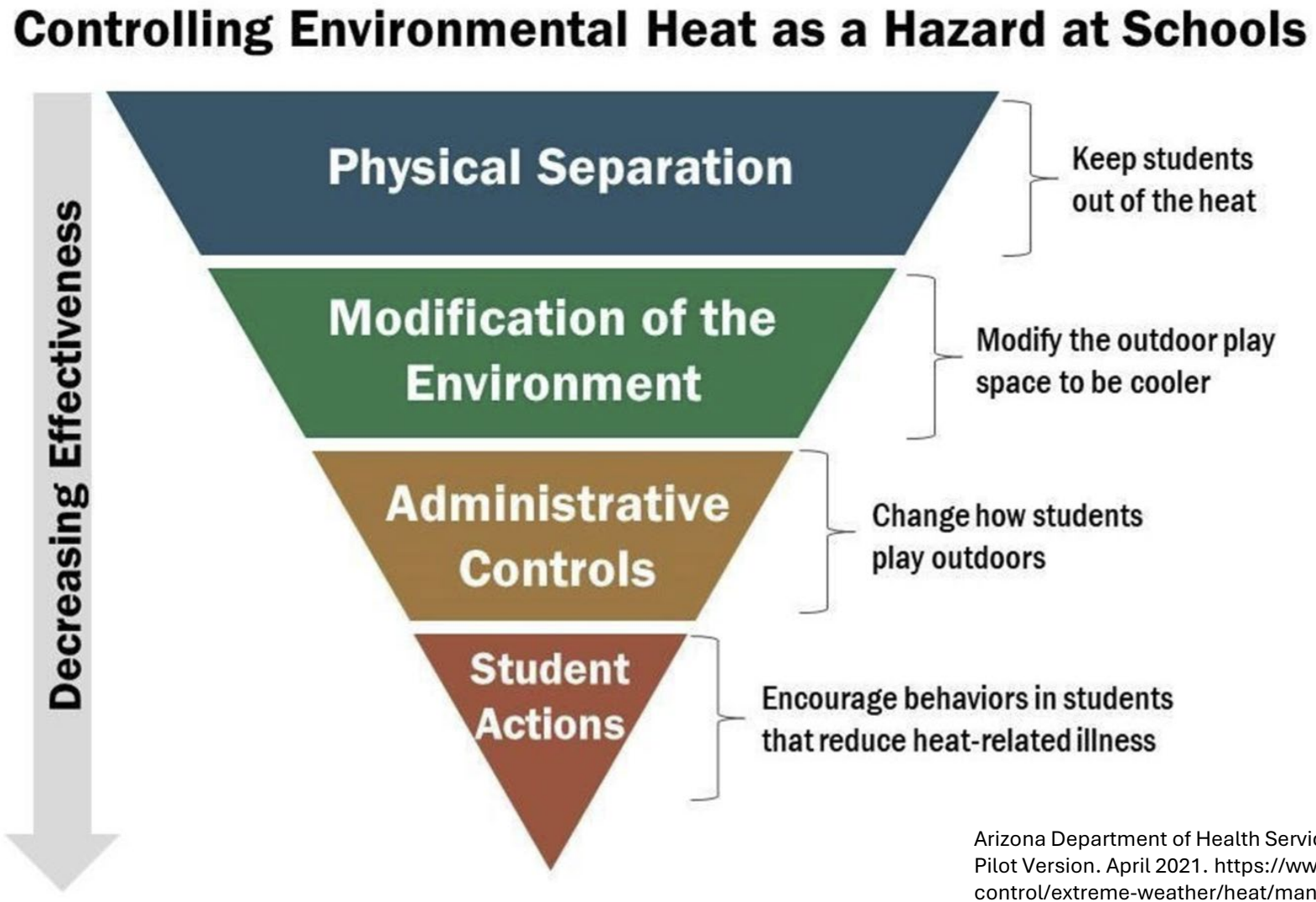
The scoring of the rubric is based out of 100 points. Each category is worth 20 points and most are broken down into subcategories (see summary table below). Points are only awarded to policies that are in alignment with current best practices for that specific topic. A decision to award points to policies that are more conservative than current best practices may also be considered if the associated policy further enhances athlete health.

Summary of State Policies

Category*	Subcategory	Points Earned	Points Possible
Exertional Heat Stroke	*Heat Acclimatization*	0	7
	WBGT Monitoring (Environmental/Regional Modifications)	0	5
	Other Heat Policies	0	8

https://koreystringer.institute.uconn.edu/hsssp-maine/

Keeping students safe

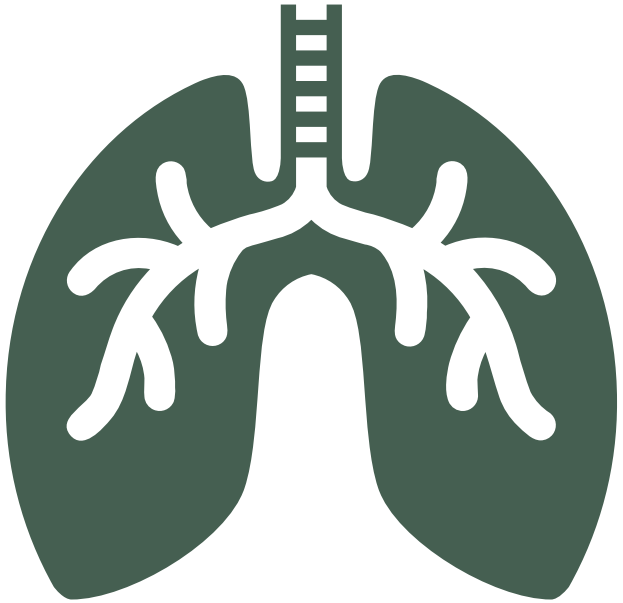


Arizona Department of Health Services. Managing Extreme Heat Recommendations for Schools: Pilot Version. April 2021. https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/extreme-weather/heat/managing-extreme-heat-recommendations-for-schools.pdf

Keeping athletes safe

- Highest risk heat illness in first 2 weeks of team practices
- Graded workout intensity
- Morning/evening workouts
- Water/rest breaks, loose light clothing
- Teach coaches and kids the signs of heat illness

https://www.dvusd.org/Page/71330

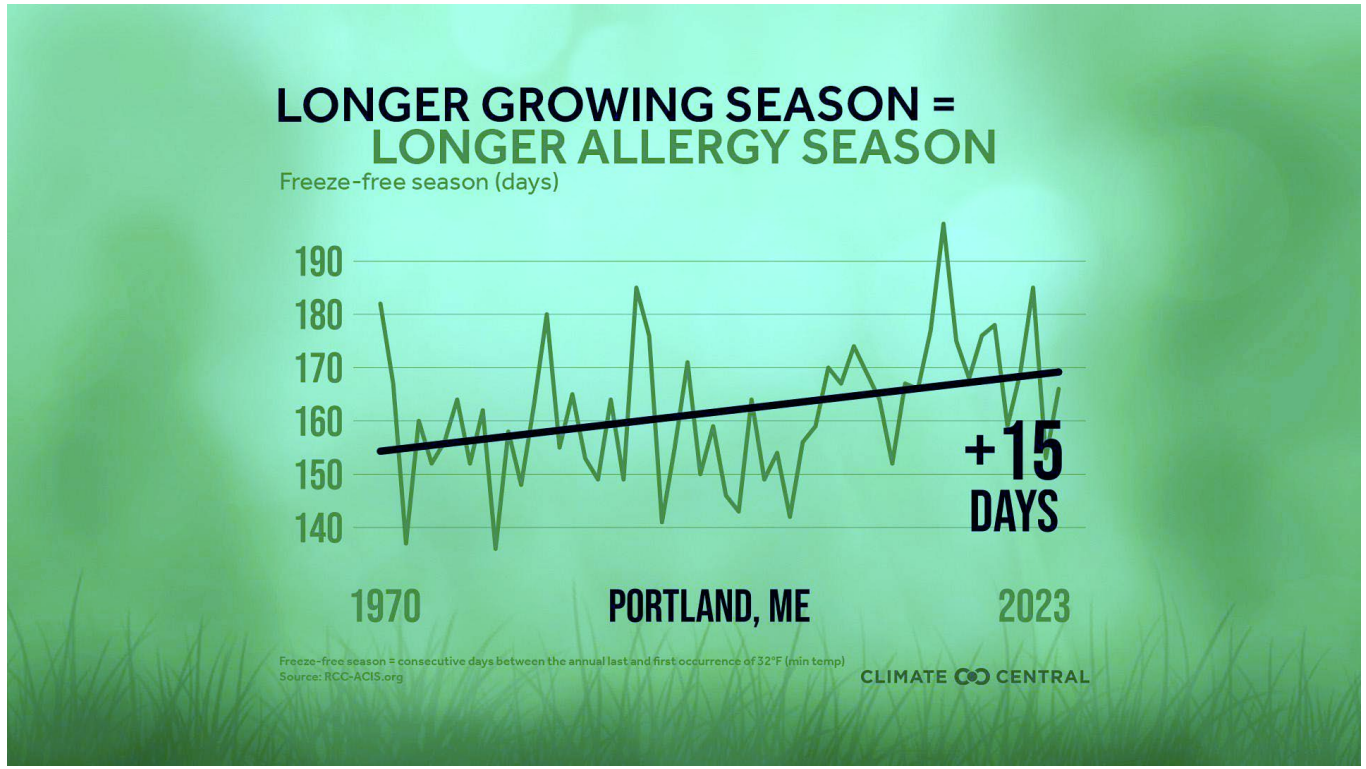


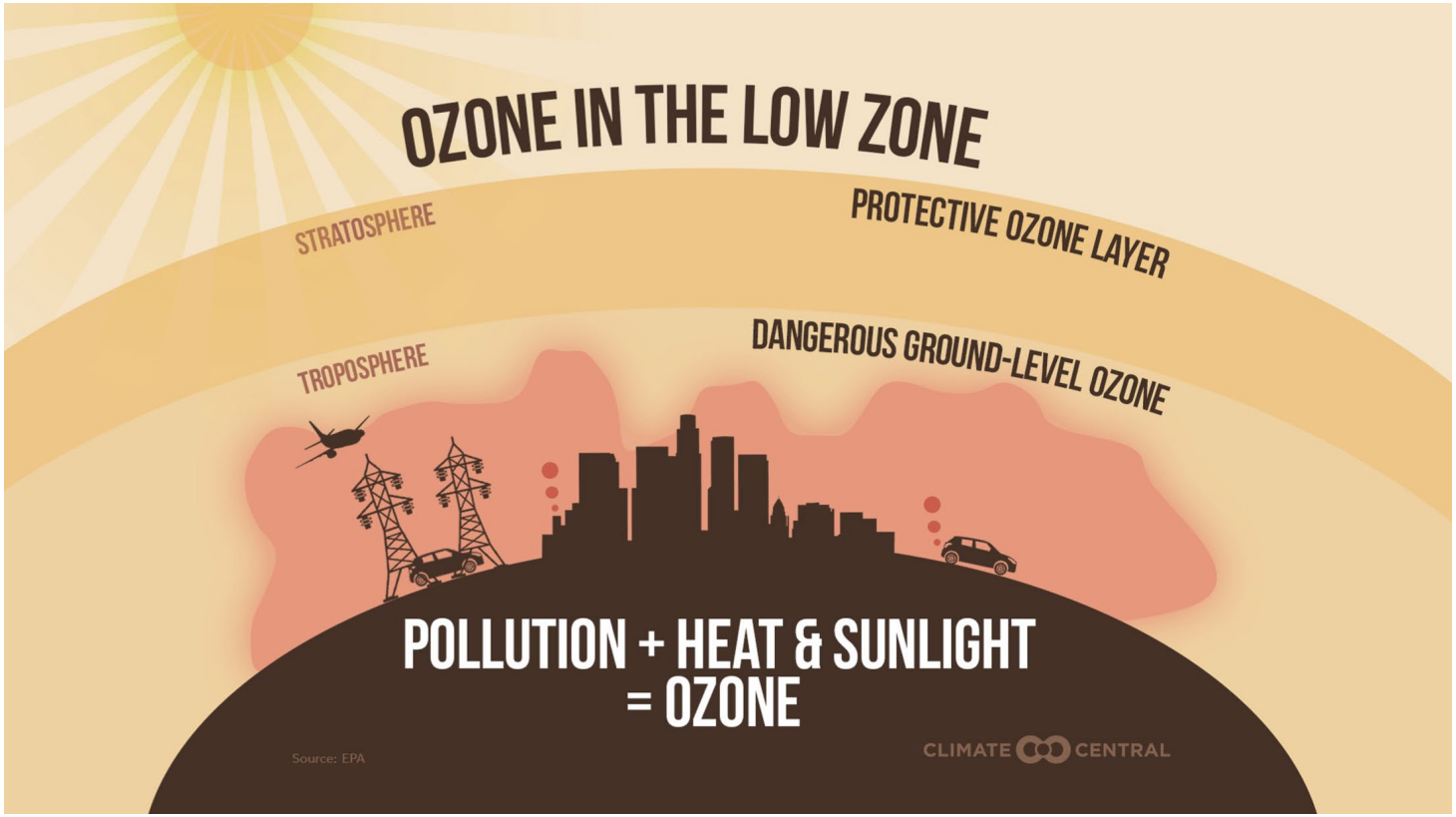
Case 2

You are a primary care pediatrician seeing a 9-year-old girl as a follow-up after her 3rd ED visit this year for status asthmaticus. She has had increasing need for ED care, more rounds of systemic steroids, and increasing dose of controller medication to control her asthma. Her primary triggers seem to be seasonal allergies and URIs.

Aeroallergens & Asthma

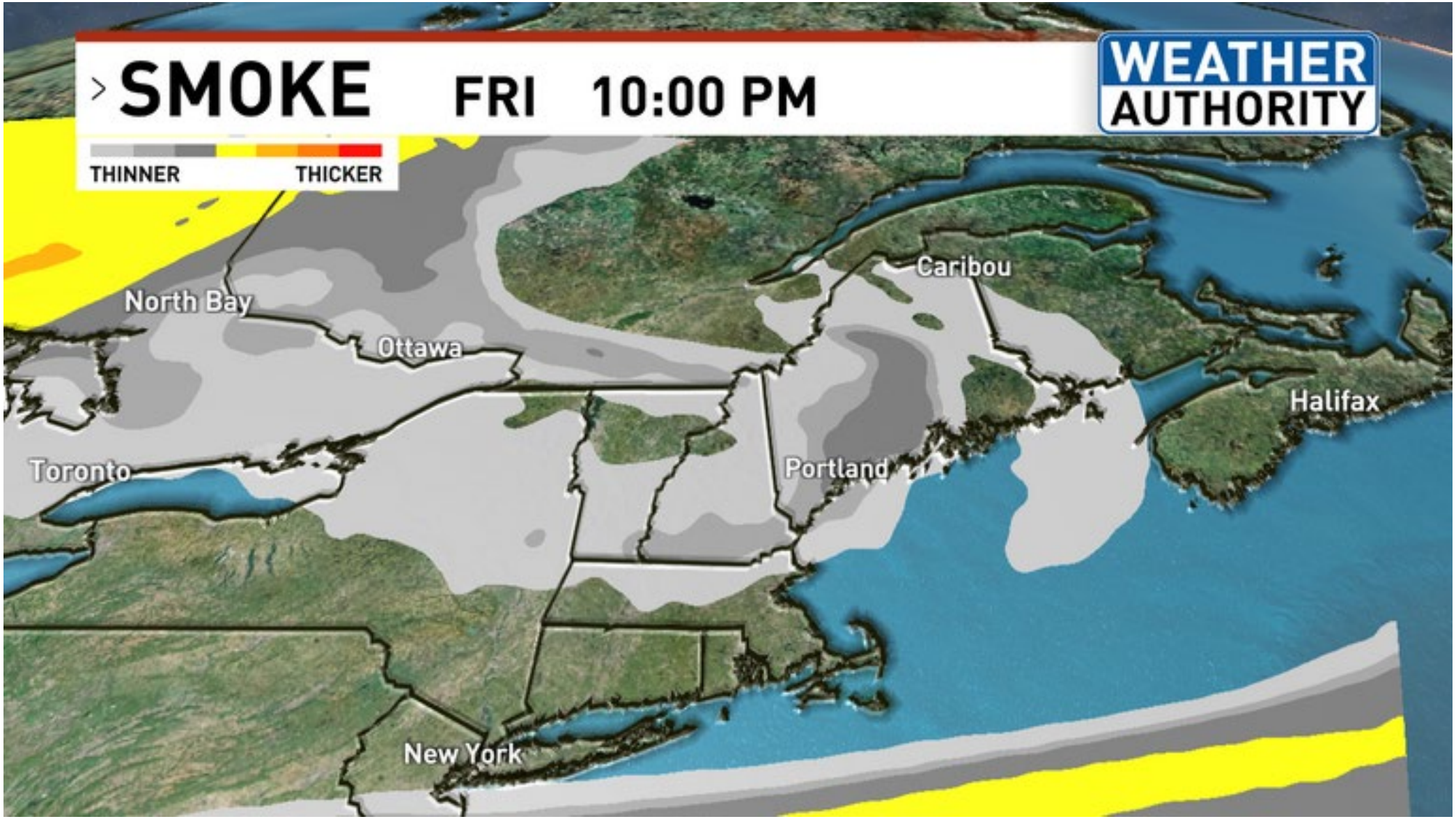
- Allergens are more numerous and more allergenic
- Allergy season is longer
- Pollen can heighten the risk of viral infection





Climate change itself worsens air quality → worsens asthma

Ozone exposure associated with increased asthma exacerbations, increased ED visits, increased risk of developing asthma


SMOKE
FRI 10:00 PM
WEATHER AUTHORITY
THINNER
THICKER
North Bay
Ottawa
Caribou
Halifax
Toronto
Portland
New York

The Aeroexposome

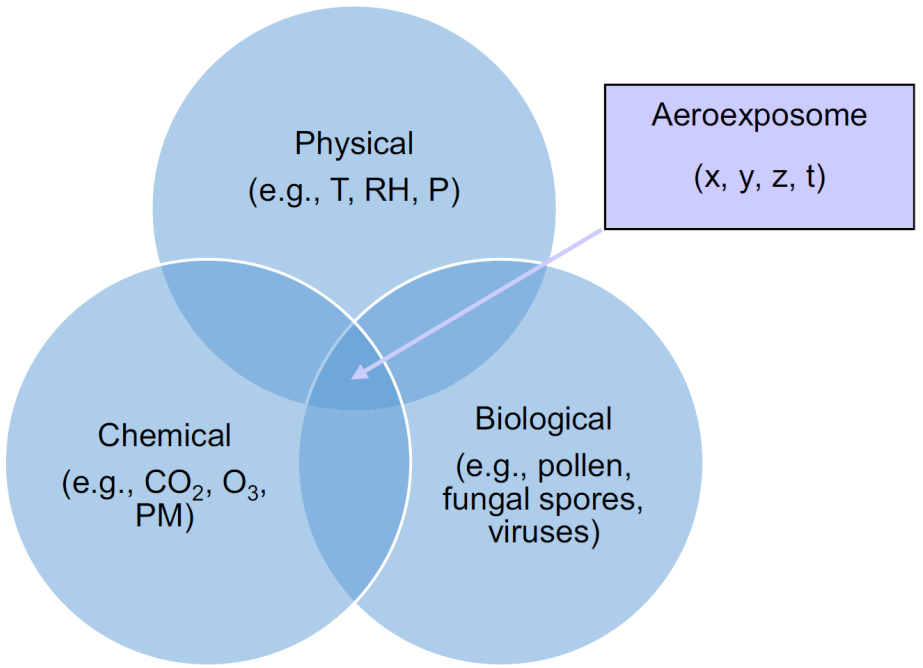
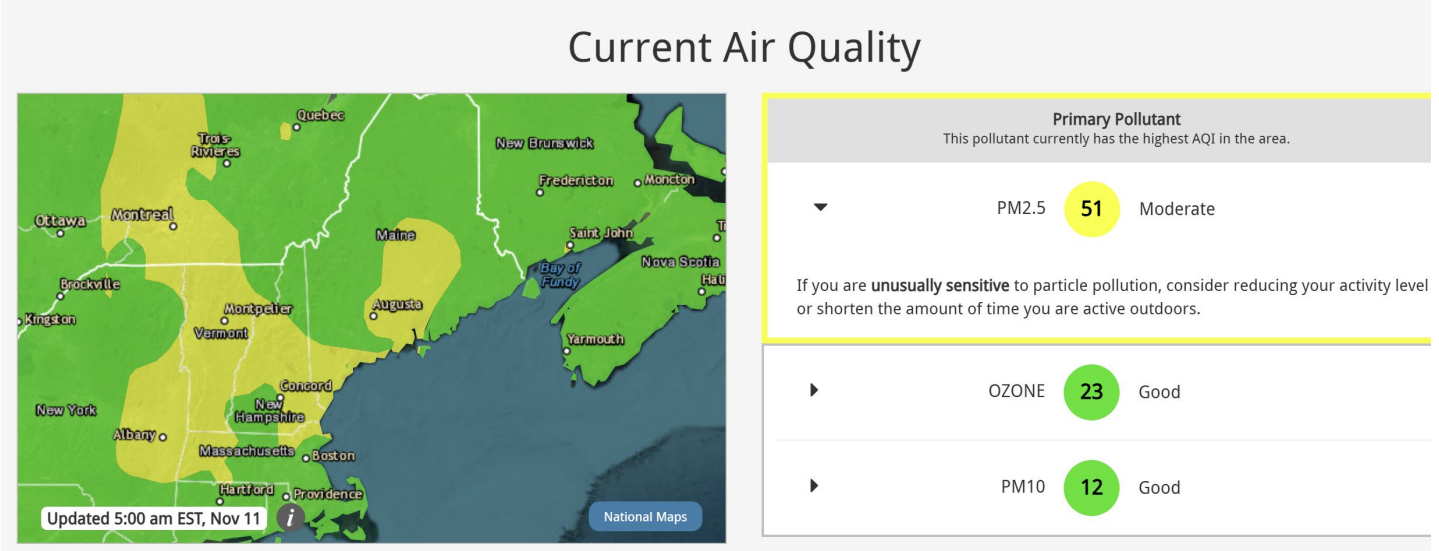


Figure 3. The three components of the atmospheric environment (physical, chemical, and biological) with the intersection between all three representing the aeroexposome that individuals are exposed to over space and time. T = temperature, RH = relative humidity, P = precipitation, CO_2 = carbon dioxide, O_3 = ozone, PM = particulate matter, *x*, *y*, *z* = coordinates of three-dimensional space, *t* = time.

Beggs 2021

Helping pts with asthma & allergies

- Address the Sx, not the season
- Educate patients about exposure
- Make indoor air cleaner
- Cut carbon pollution

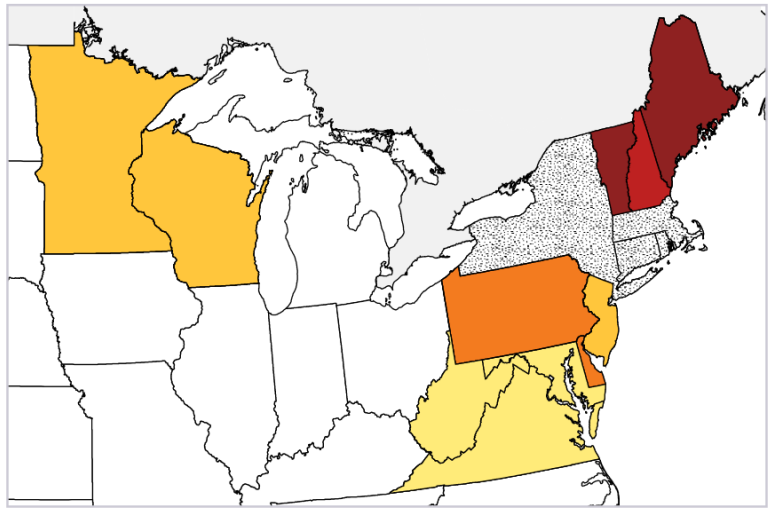


Case 3

12-year-old boy tells his camp counselor he found a rash on his arm this morning. The counselor sends him to you, the camp doctor, for further evaluation.

Climate Change & Lyme Disease

Change in Reported Lyme Disease Incidence in the Northeast and Upper Midwest, 1991–2018



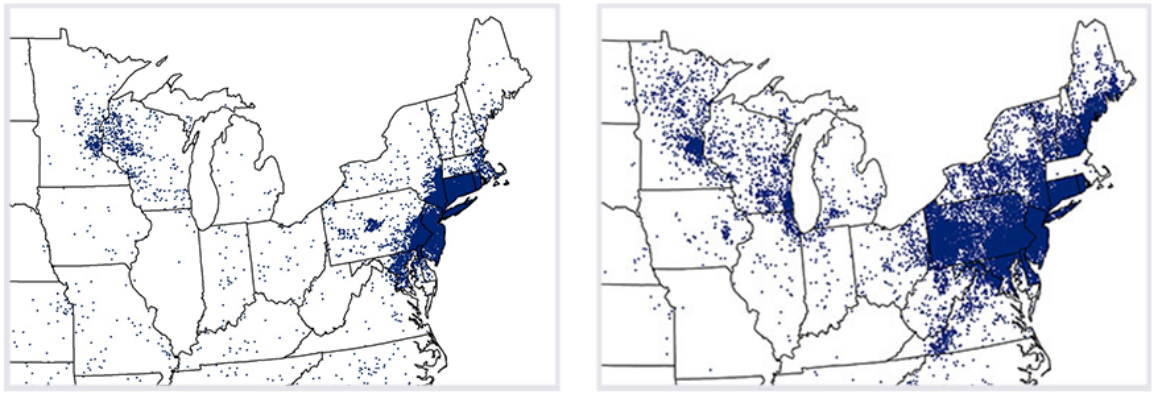
Total increase in cases per 100,000 people:

0 20 40 60 80 100 120 Trend not able to be calculated

Data source: CDC (Centers for Disease Control and Prevention). 2019. Lyme disease data tables: Historical data. Updated November 22, 2019. Accessed January 2021. www.cdc.gov/lyme/stats/tables.html.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Reported Lyme Disease Cases in 1996 and 2018



1996 2018

Data source: CDC (Centers for Disease Control and Prevention). 2019. Lyme disease maps: Historical data. Updated November 22, 2019. Accessed January 2021. www.cdc.gov/lyme/stats/maps.html.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

https://www.epa.gov/climate-indicators/climate-change-indicators-lyme-disease

Climate Change & Lyme Disease

Climate change can influence distribution of Lyme, tick abundance, onset of Lyme season, timing and height of peak Lyme incidence, duration of Lyme season

- Higher humidity, increased precipitation increase larval success
- Northern limit of distribution is determined by low temp (as low temp increases, distribution increases Northward)
- ME, NH, VT may experience the greatest increase in Lyme disease rates in the US (EPA 2023)

Preventing Vector-Borne Diseases

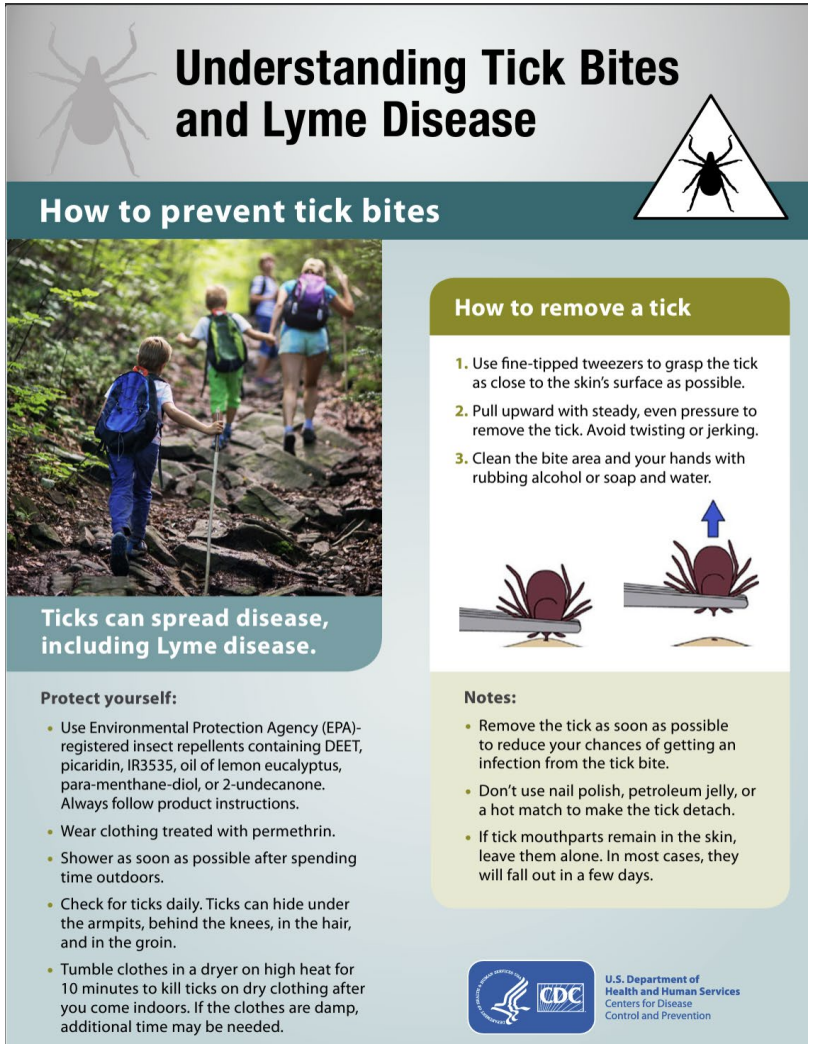
Department of Health and Human Services
Maine Center for Disease Control and Prevention
286 Water Street
11 State House Station
Augusta, Maine 04333-0011
Tel: (207) 287-8016; Fax (207) 287-9058
TTY Users: Dial 711 (Maine Relay)

Maine Health Alert Network (HAN) System

PUBLIC HEALTH ADVISORY

To: Health Care Providers
From: Dr. Isaac Benowitz, State Epidemiologist
Subject: **2024 Record Number of Tickborne Illnesses Reported**
Date / Time: Friday, October 25, 2024, at 1:30PM
Pages: 3
Priority: Normal
Message ID: 2024PHADV036

Tickborne Illnesses in Maine Continue to Rise; Maine CDC Encourages Clinicians to Consider Testing



https://www.cdc.gov/lyme/communication-resources/index.html

Case 4

During a well-child visit, the mother of your 6-year-old patient reports that her daughter has been having nightmares, has had trouble concentrating in school, and seems more prone to emotional outbursts since their home and family business were flooded catastrophically during the “Grinch Storm” in Hallowell last December.

Associated Press

Mental Health

- Climate-related disasters
  - Trauma of event itself
  - Displacement from home, community
  - School disruption
  - Economic insecurity
- Air pollution
- Elevated temperatures
- Fears about the future
  - Climate anxiety/eco-anxiety
  - Solastalgia

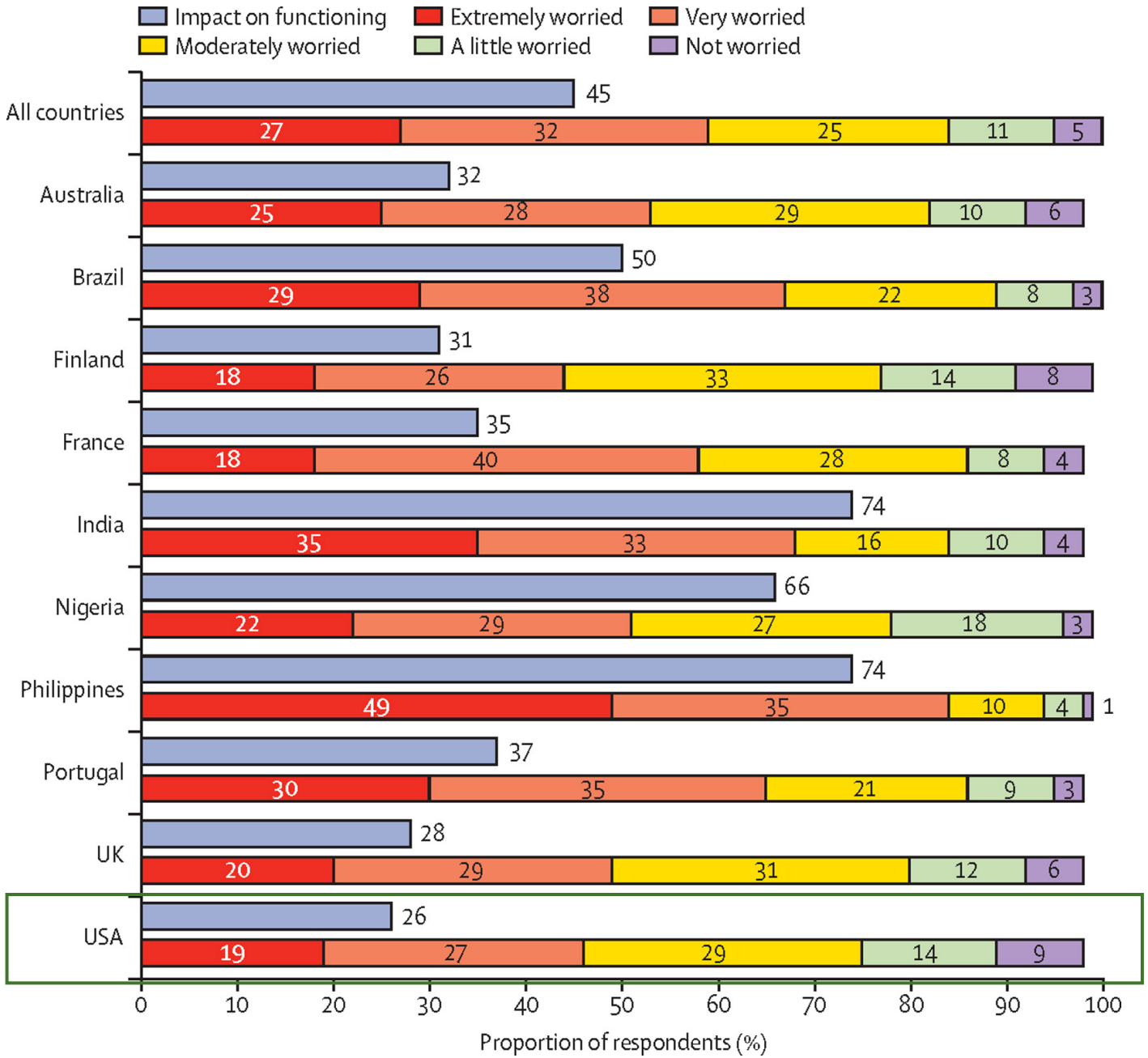


Figure 1. **Worry about climate change and impact on functioning**

The graph shows the proportion of the sample reporting a negative impact on functioning from their feelings about climate change and various levels of worry about climate change. Data are shown for the whole sample (n=10 000) and by country (n=1000 per country)

Hickman et al. 2021

Helping kids with the mental health effects of climate change: Addressing Toxic Stress

Ensuring post-disaster mental health support, rapid reunification, and restoration of safety

Harnessing the power of a supportive adult who models resilience

Promoting healthy risk-taking

Providing ongoing mental health care

Increasing green space access

Encouraging physical activity

Helping kids with the mental health effects of climate change: Parent-Child Communication

healthychildren.org
Powered by pediatricians. Trusted by parents.
from the American Academy of Pediatrics

How to Talk With Children About Climate Change

healthychildren.org
Powered by pediatricians. Trusted by parents.
from the American Academy of Pediatrics

Climate Checkup for Children's Health: Little Changes With Big Impact

LIFE KIT

LISTEN & FOLLOW

Climate change is here. These 6 tips can help you talk to kids about it

UPDATED APRIL 22, 2022 · 12:21 PM ET

By Anya Kamenetz

23-Minute Listen + PLAYLIST

Shannon Wright for NPR

Helping kids with the mental health effects of climate change: Fostering Agency

Information and inspiration for young Mainers about climate change, the State's climate action plan, and how youth can get involved and make a difference.

https://www.maine.gov/climateplan/climateandme

Roadmap

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Communicating with Patients About Climate Change

Why should we talk more about climate change?

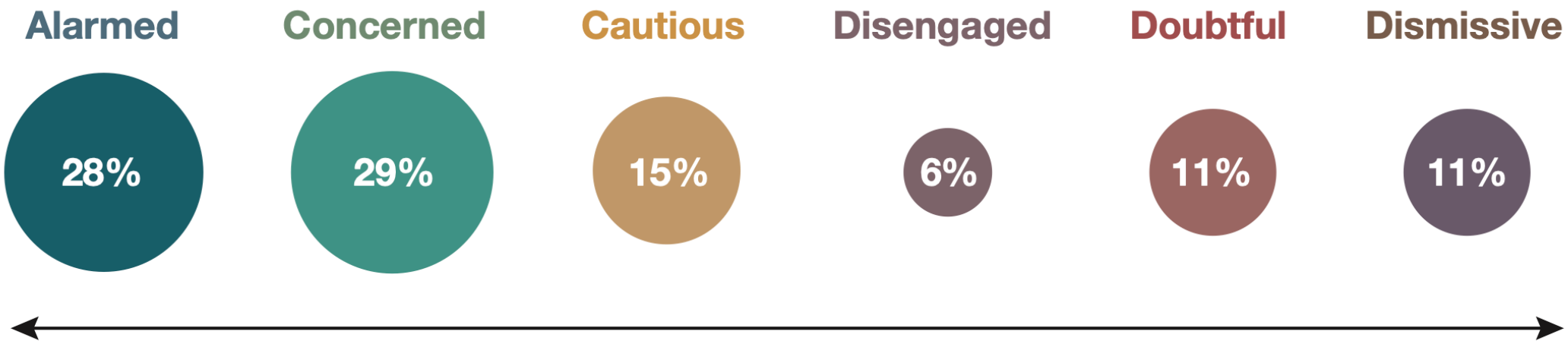
- It is impacting and will impact our patients' health and lives
- Kids are worried about it
- Their parents are worried about it
- Doctors are (still) trusted sources of information
- We are good at discussing all kinds of controversial things with our patients*
- Oh, and also… AAP officially recommends that health effects of climate change be incorporated into routine anticipatory guidance as of 2015

*Gun safety! Vaccines! Sexual & reproductive health! Etc.

Why don’t we talk about climate change?

- Time pressure
- Fear of jeopardizing doctor-patient relationship
- Not sure how to do it
- Don’t think it will work
- …

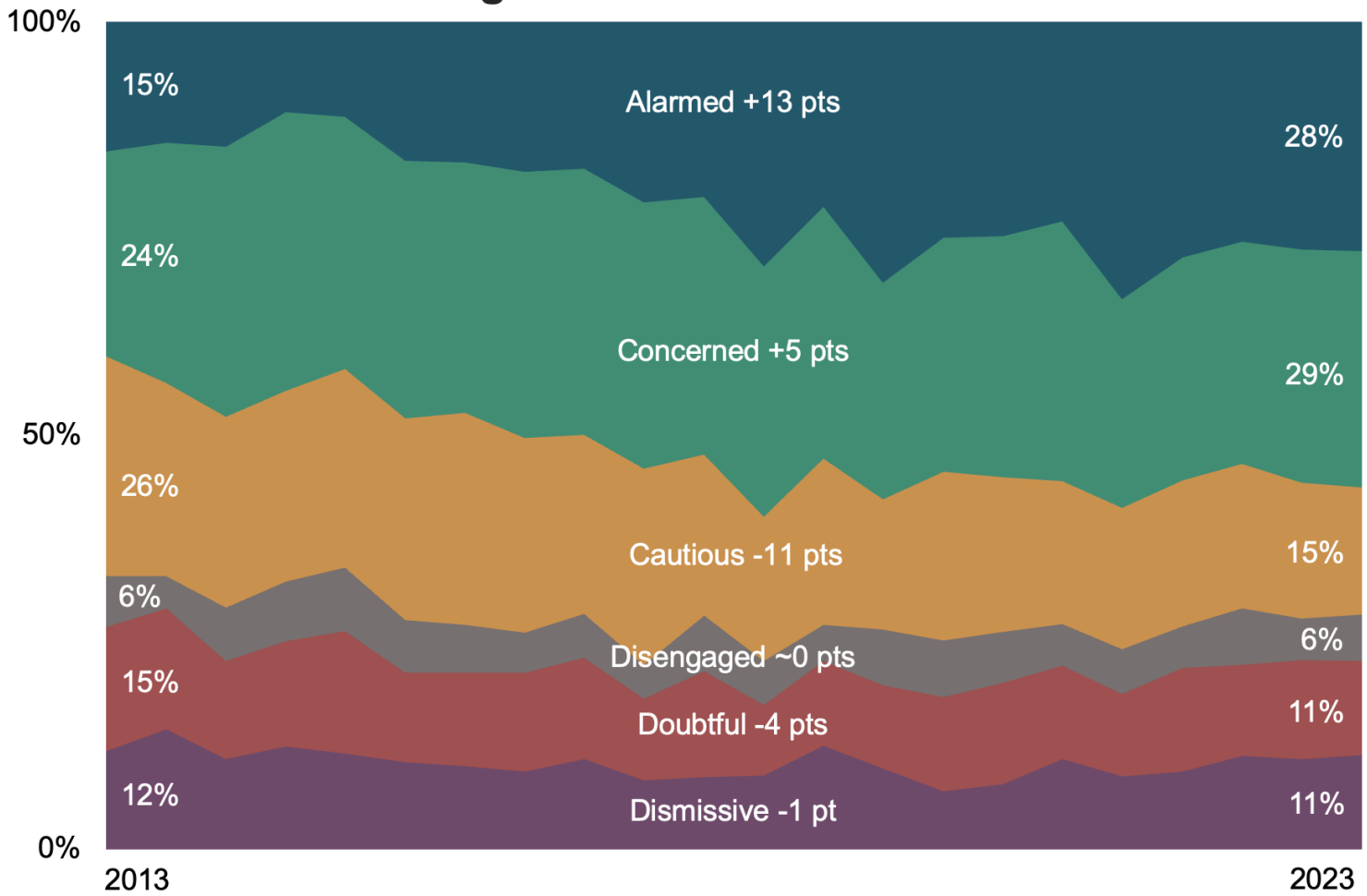
The Six Americas



Global Warming's Six Americas, Fall 2023
Base: 1,033 U.S. adults

Source: Yale Program on Climate Change Communication;
George Mason University Center for Climate Change Communication

Global Warming's Six Americas Over the Last Decade



Base: 25,368 U.S. adults. Data include 22 waves of national surveys spanning April 2013 – October 2023.

Source: Yale Program on Climate Change Communication;
George Mason University Center for Climate Change Communication

TABLE 2: **Maine Physicians' Views on Impacts of Climate Change on Patient Health**

	#	%
"Do you believe that climate change poses a threat to the health of your patients?" (n = 108)		
Yes	84	78
Maybe	11	10
Not sure	4	4
No	9	8
"In your practice, are you already observing the health impacts of climate change in your patients?" (n = 98)		
Yes	37	38
Maybe	17	17
Not sure	29	30
No	15	15
"How concerned are you about future health impacts of climate change in your patients?" (n = 92)		
Extremely	58	63
Moderately	22	24
Somewhat	5	5
Slightly	5	5
Not at all	2	2

Carlson and Andersen 2024

Contents lists available at ScienceDirect

The Journal of Climate Change and Health

journal homepage: www.elsevier.com/joclim

Research article

Patients value climate change counseling provided by their pediatrician: The experience in one Wisconsin pediatric clinic

Andrew A Lewandowski[a,*], Perry E Sheffield[b], Samantha Ahdoot[c], Edward W Maibach[d]

"In the last two years, the American Academy of Pediatrics and 100 other health organizations declared climate change a health emergency. Air pollution alone caused over 64,000 premature deaths in the United States in 2016, and worsening air quality is only 1 out of 9 ways that climate change is harming people, disproportionately harming children. So just like I want your children to eat healthy foods and be in the right car seat for their health and safety, we now know that decreasing our energy use, increasing energy efficiency, and supporting clean energy initiatives are also important for improving our children's health. Any questions?"

“Large majorities of liberal, moderate and conservative families responded positively to the guidance.”

Contents lists available at ScienceDirect

The Journal of Climate Change and Health

journal homepage: www.elsevier.com/joclim

Research article

Parents' perspectives about discussing climate change during well-child visits

Maya I. Ragavan[a,*], Lucy E. Marcil[b], Rebecca Philipsborn[c], Arvin Garg[b,#]

- 4% of parents said cc discussed during WCV over the past year
- 80% agreed/strongly agreed that health impacts of climate change should be discussed at WCV
- Fewer thought other topics should be covered, incl. preparation, reduction, talking to decision makers about cc

How can we talk more about climate change and health?

Be ready! We have “spiels” for all kinds of other issues

Link it to the here and now in your visit (summer safety, winter activities, tick bites, asthma/allergies, mental health, diet, etc.)

Be curious and open, take your patients’ leads

Listen without judgement

Find shared connections (your “why”)

How to communicate about climate change with patients

John Kotcher, [1] Lisa Patel, [2] Stefan Wheat, [3] Rebecca Philipsborn, [4] Edward Maibach[1]

Challenge	Ideas
Lack of time	- Take advantage of asynchronous screening - Have a spiel - Make it part of tailored history and anticipatory guidance (ex: For asthma visit, ask about proximity to highway, counsel about air filters) - Use pre-made educational materials
Lack of knowledge	- Use pre-made educational materials - Seek out CME opportunities
What difference will it make? Will it risk the physician-patient relationship?	- Remember – patients and families want to talk about this, and they trust you! - Tailor counseling to individual patient/family
Lack of support	- Know you are backed by AAP recommendations - Know that most health professionals support communicating with the public about climate change and health

Adapted from Kotcher et al. 2024.

A pediatrician's guide to climate change-informed primary care

Rebecca Pass Philipsborn, MD, MPA,[a] Julia Cowenhoven, MD,[b] Aparna Bole, MD,[c] Sophie J Balk, MD,[d] and Aaron Bernstein, MD, MPH[e,*]

Screening protocols include structural determinants of health and climate risks

Ex: Food security, water source, housing security and safety, energy security, depression and anxiety

Health promotion includes health and planetary benefits

Ex: Diet, active transportation and outdoor play, civic engagement

Care for all children considers and anticipates climate risks

Ex: Children wtih complex medical conditions and disasters, those participating in sports and extreme heat, children with asthma and allergies and poor air quality and pollen

Anticipatory guidance is informed by climate change

Ex: Never leaving children unattended in vehicles, heat and sun safety, street safety, accessing pubic heatlh alerts, prevention of vector-borne diseases and emerging harms

Community resource network and referral plans are in place and center patient concerns

Pediatricians can support climate and public health preparedness and adaptation that centers the needs of children, equity and child health.

Philipsborn et al. 2021

Strategies for Clinical Discussions About Climate Change

FREE

Authors: Emily Senay, MD, MPH, Mona Sarfaty, MD, MPH, and Mary B. Rice, MD, MPH | AUTHOR, ARTICLE, & DISCLOSURE INFORMATION

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Table. Clinical Scenarios for Climate Messaging

Who Is Vulnerable to Common Climate Health Risks	Climate Messaging Script Example
Heat illness Socially isolated, older-age individuals, athletes, outdoor workers, people with chronic disease (e.g., obesity, cardiovascular, chronic pulmonary, asthma, cancer), pregnant women, children, urban racial minorities, patients with mental health conditions	"We are seeing more hot days every year in our area because of climate change and the heat can be tough for people with breathing problems or who are older. Let's discuss ways to make sure you are prepared and options for getting a break from the heat if needed."
Aeroallergen-related conditions Adults and children with seasonal allergies, allergic rhinitis, allergic conjunctivitis, asthma, or chronic pulmonary disease	"There is more pollen in the air because of climate change and this is an important consideration if pollen makes your lung condition worse."
Air pollution/ozone-related disease Adults with cardiovascular disease and/or chronic pulmonary disease, children with asthma	"Climate change and air pollution are caused by the same thing–burning fossil fuels. Together they make air quality worse, and that can make heart and lung disease worse. Checking air quality and avoiding busy roadways when you go out for exercise can help protect you."
Extreme events Wildfires: Healthy people, older-age individuals, pregnant women, children, and people with cardiovascular or respiratory disease	"Wildfires are becoming more common because of climate change. The smoke and particles can travel many miles and can be dangerous for everyone, but especially people with heart or lung disease. It is important to check air quality information when there are wildfires. Here are some ways to do that (www.airnow.com) and tips to reduce exposure."

Senay et al. 2020

TABLE Practical recommendations for integrating climate change into the flow of pediatric primary care visits.

	Climate-health rationale	Practical screening questions, suggested climate conversation starters, recommendations and resources
Sports physical	Climate change is resulting in more extreme heat. Children and youth involved in athletic activities are at risk for heat related illnesses.	*Climate change is causing more extreme heat and more heat earlier in the spring and later in the fall. It is important to exercise safely and pay attention to hydration.* ○ Discuss prevention of heat illness when completing sports physicals. • Encourage hydration during strenuous outdoor activity. • Acclimatize at the beginning of the season. • Avoid the hottest time of the day. • Recognize the signs and symptoms of heat illness. ○ Provide families with resources to take home and share with coaches and teams. • National Athletic Trainers Association: https://www.nata.org/sites/default/files/hydration_heat_illness_handout.pdf • https://www.nata.org/sites/default/files/heat-illness-parent-coach-guide.pdf • Korey Stringer Institute - https://ksi.uconn.edu/wp-content/uploads/sites/1222/2019/05/Reducing-Heat-Illness-in-College-and-High-School-Sports.pdf
Asthma and allergies	Climate change and pollution share common drivers—both are sequelae of fossil fuel combustion. Heat contributes to ground-level ozone air pollution. Climate change increases risks of droughts and wildfires. Some allergenic plants produce more pollen when exposed to higher CO_2 concentrations in the air, and the pollen season is longer. Heat, pollution, pollen and wildfire smoke worsen air quality and respiratory illnesses.	*Climate change makes pollen season longer and stronger. (It's not just your imagination that your allergies are getting worse).* *Climate change is causing hotter weather, and heat makes pollution and air quality worse. Children's lungs are sensitive to bad air quality, and it can trigger and worsen asthma. Let's think about temperature and air quality in your asthma action plan.* *What are your plans to stay safe from wildfire smoke?* ○ Include pollution and seasonal pollen counts in asthma management plans. • Recommend that patients exercise and play outdoors when the local air quality index is good and avoid outside time during "Code Orange" or higher air quality alerts. • Consider a mask when age-appropriate and when in areas affected by wildfire smoke or a local air quality index of moderate or severe.[97] ○ Show patients how to access the air quality index and pollen counts (where available): https://www.airnow.gov/ https://pollen.aaaai.org/ ○ In areas affected by wildfire smoke, advise families to use a household HEPA filter. ○ Refer families to the airnow.gov fire and smoke map that includes data from low-cost sensors to enhance resolution of fire smoke information: https://fire.airnow.gov/
Emerging conditions	Changing patterns of infections and exposures create health risks in new geographies.	○ Tailor information on local outbreaks and emerging diseases with families. • CDC National Outbreak Reporting System: https://wwwn.cdc.gov/norsdashboard/ • CDC Lyme Toolkit: https://www.cdc.gov/lyme/toolkit/index.html • AAP guide for parents on choosing insect repellents: https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Insect-Repellents.aspx
Depression screening	Climate change, disasters, and displacement can compromise mental health and result in stress for children and caregivers.	*I am so sorry to hear that you experienced a flood in your home. How are you and your family doing?* ○ Use validated screens like PHQ-9 or PHQ-2.[96] ○ Maintain high index of suspicion about potential relationship between climate, disasters, and positive screens ○ Refer for local mental and behavioral health resources ○ Suggest opportunities to engage with youth and community support groups where appropriate

Philipsborn et al. 2021.

Roadmap

- Motivation – Why talk about climate change?
- Clinical situation – What *are* the health effects of CC on kids*?
- Communication – why don't we talk about CC with our patients, why should we, and how can we?
- **Education – where can we learn more?**

*We'll focus on kids in Maine for this talk

Where to learn more & get involved

- ME AAP Environmental Health & Climate Change Committee!
- Medical Society Consortium on Climate & Health
- Physicians for Social Responsibility, Maine Chapter
- Alliance of Maine Health Professionals for Climate Action

Resources for Pediatricians

- Harvard School of Public Health C-CHANGE: Toolkit on Climate, Kids, & Health: https://www.hsph.harvard.edu/c-change/research/kids-and-climate/
- WHO Toolkit for health professionals: Communicating on climate change and health: https://www.who.int/publications/i/item/9789240090224
- AAP Climate Change page: https://www.aap.org/en/patient-care/climate-change/?srsltid=AfmBOop2w_AEJpGc8JaQ7GL1okiWiCzdGIVmbzEYg8kDdLd0Ukt8NeDT
- HealthyChildren.org
- Maine Climate Council: https://www.maine.gov/future/climate/council
- ClimateRx: Info for patients and health professionals: https://www.climaterx.org/

Thank you!

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