



Healthy Climate, Healthy People

Why a Warming Planet is Harming Our Health

by Lisa Marshall

Samantha Ahdoot's son Isaac was nine years old when he collapsed from the heat while playing clarinet at band camp. It had been a record-hot summer following a mild winter and early spring, and Dr. Ahdoot, an Alexandria, Virginia, pediatrician, had already noticed a string of unusual cases: A toddler had contracted Lyme disease in the once tick-free region of Northern Maine. A teenager had suffered an asthma attack in February, a full month before she usually started taking allergy medicine. A displaced grade-schooler

from out of town arrived traumatized after fleeing a hurricane-ravaged home with her family. But it wasn't until she saw her son laying on a gurney in the emergency room with an IV in his arm that she fully connected the dots.

"I was aware that the weather had

changed a lot since I was kid. But it really didn't hit home until that day that climate change could affect my health and the health of my children personally," recalls Ahdoot. "I realized it would be a betrayal of my duty as a pediatrician to sit back and do nothing about it."

Health Care Alert

Ahdoot, now a vocal climate change activist, is among a growing number of healthcare professionals that have begun to reframe climate change not as a concern for elsewhere or the future, but as a pressing U.S. public health issue today. In one recent survey of 1,200 allergists, 48 percent said climate change is already affecting their patients a "great deal" or a "moderate amount." In another survey of lung specialists, 77 percent said they were seeing patient symptoms grow more severe due to worsening climate-related air quality.

In a sweeping review published last October in *The Lancet* medical journal, a team of healthcare professionals proclaimed that the human symptoms of climate change are "unequivocal and potentially irreversible," noting that since 2000, the number of people in the United States exposed to heat waves annually has risen by about 14.5 million, and the number of natural disasters annually has increased 46 percent.

The U.S. Centers for Disease Control and Prevention has also begun to weigh in with a Climate-Ready States and Cities Initiative to help local health departments brace for everything from the hazardous air quality associated with more forest fires to the spread of vector-borne diseases like Zika and West Nile as the range and season



of mosquitoes and ticks expands.

Meanwhile, groups like the newly formed and expansive Medical Society Consortium on Climate & Health, to which Ahdoot belongs, are being proactive. Its doctors are greening their offices, swapping cars for bikes, buses or carpooling, lobbying lawmakers and encouraging their patients to undertake measures to prevent the problem from worsening. In the process, they say, they might even improve their own health.

“We want the public to understand that climate change is not just about polar bears or receding glaciers in the Arctic, but also about our children and our health here and now,” says Ahdoot.

Flora and Fauna Issues

During the past century, average temperatures have increased between 1.3 and 1.9 degrees Fahrenheit, with annual increases accelerating in recent years as 2012, 2015, 2016 and 2017 all set records for ambient heat. Such rising temperatures, combined with increased rain and record-high atmospheric carbon dioxide levels, can have a significant impact on plants—both those that irritate or nourish us, says Howard Frumkin, a medical doctor who co-authored the *Lancet* report and teaches environmental and occupational health sciences at the University of Washington, in Seattle.

Wild, allergy-inducing plants like ragweed and poison ivy are flourishing. Poison ivy is growing faster, larger and more toxic as excess carbon prompts it to produce more of its rash-inducing compound, urushiol. “We are seeing the season for ragweed productivity expanding, with pollen levels rising higher and earlier and lasting longer by several weeks,” advises Frumkin. In 2016, residents of Minneapolis, Minnesota, endured a ragweed season that was 21 days longer than in 1990. Other, desirable crops, like grains, do worse in hotter carbon-rich climates, producing less protein and other nutrients, Frumkin notes.

Meanwhile, bugs are thriving, with longer seasons and wider ranges in which to reproduce. Mosquitoes’ capacity to transmit dengue fever—the world’s fastest-growing mosquito-borne illness—has

risen by 11 percent since 1950, more than half of that just since 1990, according to the *Lancet* report. Further, the tick that carries Lyme disease is now present in 46 percent of U.S. counties, up from 30 percent in 1998. “My physician colleagues used to treat two or three cases a month during tick season,” says Dr. Nitin Damle, a physician at South County Internal Medicine, in Wakefield, Rhode Island. “Now each of us sees 40 to 50 new cases each season.”

Heat Pollution

Rising heat can also aggravate lung conditions because it promotes the production of ozone, a major lung irritant. With prolonged heat often come wildfires. When one burned for three months in North Carolina in a recent summer, researchers discovered that residents of counties affected by the smoke plume showed a 50 percent increase in emergency trips due to respiratory illness.

Like Isaac, more kids are ending up in hospitals due to soaring temperatures, with U.S. emergency room visits for heat illnesses up by 133 percent between 1997 and 2006. Ahdoot recalls a young football player from Arkansas that showed signs of weakness and fatigue during practice, but wasn’t treated right away. He ended up with heat stroke, kidney failure and pulmonary edema and ultimately required kidney dialysis. “Every summer now, I see the impacts of increasing temperatures and heat waves on kids,” she says.

Climate change can also impact mental health, according to a recent review by the American Psychological Association. Exposure to natural disasters can lead to post-traumatic stress disorder. Plus, according to research institutions including the University of California, San Diego, and Iowa State University, chronic heat, especially at night, can interfere with sleep and even lead to aggressive behavior.

Then there’s the worry about what to do about it, and whether it will be enough. “When you talk with people about what is affecting them, climate is definitely one of the things stressing them out,” says Thomas Doherty, Psy.D., a psychologist in Portland, Oregon. “There’s a sense of mystery and powerlessness around it that

weighs on people.”

Fresh Perspective, New Hope

Mona Sarfaty, a family physician who is now director of the Medical Society Consortium on Climate & Health, attests that 69 percent of Americans are aware that climate change is occurring, and more than half agree that human activities are at least partly to blame. Yet only a third believe it could ever harm them personally. “So much of the early focus was on the receding glaciers and the penguins,” she says. “People today still think it will affect ‘those other people over there,’ but not them.”

She agrees with the recent focus on imminent health issues, and is encouraged that a growing number of healthcare professionals feel it’s their duty to inform their patients about climate change to mobilize action. “When you talk about climate change not only in terms of the health impact it has on individuals and families, but also in terms of the real-time benefits of taking action against it, people are a lot more interested in doing something,” says Sarfaty.

For instance, shifting to clean energy sources like wind and solar instead of coal can effect better air quality and easier breathing now. Cycling or walking to work rather than driving can reduce carbon emissions, boost feel-good brain chemicals and keep weight in check. Writing letters to editors or attending rallies to urge lawmakers to pass climate-friendly policies can not only fend off the anxiety and depression that comes with feeling helpless, but also effect real change.

Ahdoot is taking these steps now. She has solar panels on her roof, is assisting the local hospital to reduce its carbon footprint, takes public transportation to work and encourages her kids to walk whenever possible. “I don’t feel powerless at all. I feel empowered and optimistic,” she says. “The more we know, the more we are moved to act. We can all do something small every day to protect our climate.”

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FIVE STEPS TO TAKE TODAY

1 Swap tailpipes for pedals: Bike or walk instead of driving, especially for distances of less than two miles, which comprise 40 percent of all car trips. A study in the journal *Environmental Health Perspectives* found that if everyone did this in just 11 cities in the Midwest, not only would carbon dioxide (CO₂) emissions fall, but it would extend 1,300 lives and save \$8 billion in healthcare costs due to better air quality and less sedentary lifestyles.

2 Eat less red meat: Producing red meat results in five times more climate-warming emissions per calorie than chicken, pork, dairy or eggs, according to a study in the *Proceedings of the National Academy of Science*. It also creates 11 times more emissions than the production of potatoes, wheat or rice. Eating less red meat can also decrease an individual's risk of certain cancers.

3 Encourage hospitals and doctors' offices to go green: The healthcare system is re-

sponsible for about 10 percent of all greenhouse gas emissions, according to a recent study by researchers at the Yale School of Medicine, in New Haven, Connecticut. Boston-area hospitals recently slashed their overall emissions by 29 percent in five years.

4 Plant more trees: As they grow, trees remove carbon dioxide from the air. Being around green space has also been shown to boost mental and cognitive health.

5 Show compassion: Americans, per capita, emit six times more CO₂ than the global average, according to research by Jonathan Patz, a medical doctor who directs the Global Health Institute at the University of Wisconsin-Madison. In a TED Talk, he observed that U.S. lower-income populations and those in developing countries are often hit hardest by gaseous emissions. "Those most vulnerable to the health impacts of climate change are often the least responsible," he says. "Doing something about this is a matter of compassion."