

## **New 'climate cardiology' specialty needed to tackle links between climate change and cardiovascular health**

*Numerous opportunities to simultaneously protect patients and the planet, say experts*

A new specialty of climate cardiology is needed to tackle the many links between climate change and cardiovascular health and simultaneously protect patients and the future of the planet, say experts in the open access journal **BMJ Global Health**.

As a result of human activities, levels of greenhouse gases are the highest they have been in at least 800,000 years, prompting a rise in global surface temperatures and associated climate change.

Major sources of greenhouse gas emissions include fossil fuel burning, agriculture, deforestation and meat production. But globally, the healthcare sector is responsible for nearly 4.5% of emissions, as well as nearly 3% of fine particulate matter air pollution (PM2.5).

In the US, the healthcare sector emits nearly 10% of greenhouse gas emissions, note the authors.

And the environmental and social consequences of climate change are set to increase the prevalence and severity of cardiovascular risk factors over this century, they warn.

Climate change leads to more frequent extreme weather events, air pollution, ecosystem collapse, and declines in global food production and the nutritional quality of major cereal crops.

All these factors have direct effects on cardiovascular health, as well as indirect effects through other social determinants of health and the capacity of health systems to manage climate hazards, explain the authors.

- In 2019 alone, high temperatures were responsible for an estimated 93,000 cardiovascular deaths around the world
- Extreme weather events are linked to trauma, stress, and depression—all risk factors for coronary heart disease
- Desertification, increased atmospheric CO<sub>2</sub>, and ocean warming and acidification affect nutritious food supplies: diets low in fresh produce, whole grains, and seafood are responsible for over 3 million cardiovascular deaths annually worldwide
- Famine, floods, storms, drought, landscape fires, sea level rise and ecosystem collapse may prompt the forced migrations of hundreds of millions of people, often to places ill prepared to provide cardiovascular health services
- Air pollution from fossil fuel burning, industrial emissions, and landscape fires are responsible for nearly 1 in 5 (3.54 million) cardiovascular deaths globally

But there are opportunities to cut greenhouse gas emissions and reduce the global toll of cardiovascular disease, insist the authors.

A transition from predominantly meat based to plant based diets is required, facilitated by a restructuring of food subsidies and taxation, suggest the authors. Red meat, which contains high levels of saturated fat, is an established risk factor for heart disease, and responsible for 738,000 cardiovascular deaths in 2019.

A shift to active transport, such as walking and cycling, would not only help to promote physical activity but would also cut greenhouse gas emissions: physical inactivity was responsible for 639,000 cardiovascular deaths in 2019.

An expansion of green spaces in residential areas would help to reduce stress and soak up atmospheric CO<sub>2</sub> while a shift away from coal, oil, and gas towards solar and wind power, geothermal energy, and hydroelectricity would save more than 20 million attributable deaths over the next 30 years.

Burning coal or biomass for cooking or heating indoors releases considerable greenhouse gases and was responsible for over 1 million cardiovascular deaths in 2019. Therefore, providing clean cooking stoves is a cost-effective way of improving global cardiovascular health, while cutting emissions, say the authors.

As to healthcare systems, they can reduce their carbon footprint by promoting telemedicine, local ambulatory care, and self-care, and by cutting down on overtreatment, overprescribing, and unnecessary interventions.

Health systems should also invest in disaster planning and early warning systems to prepare for waves of illness associated with climate change, while medical education should incorporate teaching and research on environmental health and sustainable practices in healthcare, the authors suggest.

“The window is closing to prevent the worst effects of climate change. The healthcare sector must take urgent action to prevent the climate crisis from undermining cardiovascular health,” they warn.

“A new field of climate cardiology can study and implement such opportunities to protect patients and the planet,” they conclude.