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The health co-benefits of climate change policies: doctors have a responsibility to future generations

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ABSTRACT – Mitigating climate change presents unrivalled opportunities for improving public health. The policies that need to be implemented to reduce greenhouse gas emissions will also bring about substantial reductions in heart disease, cancer, obesity, diabetes, road deaths and injuries, and air pollution. The health benefits arise because climate change policies necessarily impact on two of the most important determinants of health: human nutrition and human movement. Although the health co-benefits of climate change policies are increasingly recognised by health professionals they are not widely appreciated by those responsible for policy. Because the existence of important health co-benefits will dramatically reduce the cost to society of taking strong action to mitigate climate change, failure to appreciate their importance could have serious environmental consequences. Health professionals have an urgent responsibility to ensure that the health benefits of environmental policies are understood by the public and by policymakers.

KEY WORDS: air pollution, cancer, climate change, road traffic accidents, transport

Food production is a significant contributor to anthropogenic climate change, estimated to account for one fifth of global greenhouse gas emissions.[1] Livestock rearing for meat and milk is a particularly important source of emissions. One third of the world's land surface is used for livestock production, either to provide pasture for grazing or to grow grains for cattle feed.[1] Providing grazing land leads to deforestation and grain production requires the use of energy intensive nitrogenous fertilisers. Methane released from animal manure and from enteric fermentation is a particularly powerful greenhouse gas.

Global average meat consumption is currently about 100 g per person per day, ranging from 25 g per person in low income countries to 250 g per person in high income countries. Population and economic growth in poor countries is increasing the global demand for meat and milk particularly in East and South Asia and in Latin America. This will further increase the carbon footprint of livestock production and by diverting agricultural production away from food crops towards livestock feed will have serious impacts on the poor due to cereal price rises. Reducing meat consumption in high income countries is essential to allow increased consumption in poor countries without devastating environmental and equity impacts.[1]

Reducing the consumption of animal products would help stabilise the climate but also, by reducing the amount of saturated fat and meat in the diet, would reduce the incidence of cardiovascular disease and bowel cancer. Reducing the total quantity of food energy consumed by affluent populations, particularly the consumption of the more carbon intensive fats and refined sugars, would also have environmental effects while reducing the prevalence of obesity and diabetes, both of which are now major health concerns.[2]

Transport accounts for about 14% of global greenhouse gas emissions and three quarters of these emissions are from road traffic.[3] Transport is the fastest growing source of greenhouse gas emissions and current trends are clearly unsustainable. A rapid transition to a low carbon transportation system involving increased levels of walking and cycling is essential to avert climate change and would have major health co-benefits.[3]

Road traffic injuries are a major cause of mortality among young adults in the UK and worldwide they account for 1.2 million deaths each year. Pedestrian injury is the leading cause of death in children in the UK and the speed and volume of motor vehicle traffic is the main determinant of injury risk. The incidence of road traffic injuries is a function of fossil fuel energy use by the transportation sector. Roads are rivers of kinetic energy, the energy being derived from the burning of fossil fuels which leads to the carbon dioxide emissions responsible for climate change.

Replacing urban car use by walking, cycling and public transport would reduce fossil fuel energy use, mitigating climate change but also reducing road traffic injuries and air pollution. It has been estimated that had transportation fossil fuel consumption in the USA been cut by 7% in 1990 (the reduction that would have been required under the Kyoto Protocol assuming the same proportional reduction across all sectors) there would have been 80,000 fewer US road deaths between 1990 and 2003.[4] Because there are steep social class gradients in death rates for pedestrians, reducing motor vehicle traffic volumes and speeds would also have important equity implications. Increased walking and cycling by increasing physical activity would tackle the output side of the personal energy balance equation, again reducing the prevalence of obesity and reducing cancer incidence.

Worldwide, urban air pollution, much of which is transport related, causes a further 800,000 premature deaths each year. Yet

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again reducing traffic volumes to avert climate change will have health co-benefits. The introduction of a congestion charge in only a small part of central London lead to modest reductions in levels of NO_2 and PM_{10} across the Greater London region with corresponding increases in life expectancy.[5]

Although the health co-benefits of policies to reduce greenhouse gas emissions are increasingly recognised by health professionals they are not widely appreciated by those responsible for climate change policy.[6] Because health co-benefits have the potential to reduce the cost to society of climate change policies it is essential to quantify their extent and to tailor climate change policies in order to maximise them. Health professionals have a responsibility to future generations to ensure that the health benefits of environmental policies are recognised, quantified, and that this information is disseminated to patients, to the public and to policymakers. Failure to do so would be a serious neglect of our collective responsibility.

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