



Editor's Notes

THE CONNECTION BETWEEN GLOBAL WARMING AND HEALTH PROMOTION

The *Lancet* recently published a compelling series of articles on the link between global warming and health. In the opening commentary, Richard Horton, Editor in Chief, declared that “energy is as important as any vaccine or medicine,” pointing out that two billion people currently lack access to clean energy.¹ He criticized the World Bank and World Health Organization for failing to make the connection between energy and health and called on his readers to join his call for bringing attention to this issue. He recommended that “policies to reduce the progress and impact of climate change should explicitly aim to maximize health benefits and minimize health risks” and that “all energy related policies should routinely incorporate health impact assessments.”

The series focused on the link between health and energy in four areas: power generation, built environment, transportation, and agriculture. I will share a few thoughts from the articles on transportation and agriculture.

Transportation.² More than 95% of motorized transportation is dependent on oil and accounts for almost half of the world's use of oil. Furthermore, transportation is linked to major health problems, including 1) *Injuries*. The WHO World Report on Road Traffic Injury Prevention³ estimated that 1.2 million people were killed and 50 million people were injured in road-traffic crashes in 2002; 2) *Physical Inactivity*. The Global Burden of Disease Study⁴ estimates that physical inactivity is responsible for 3.3% of all deaths globally, and 19 million disability-adjusted life years (DALYs) stem primarily from ischemic heart disease, diabetes, colon cancer, stroke, and breast cancer; 3) *Air and noise pollution*. Urban air pollution is estimated to kill 750,000 people every year; lead exposure alone, primarily from auto exhaust, was responsible for an estimated 12.9 million DALYs in 2002. Traffic noise is the main cause of noise pollution and has been

linked to sleep disturbance and increased cardiovascular risk; 4) *Access and community severance*. Transportation policy in most nations has focused on maximizing individual mobility rather than providing optimal access to community services, especially for the elderly, disabled, and children. Sadly, the poorest people in the world, who rely primarily on walking for transportation, bear the greatest burden of the negative health impacts caused by motorized transportation. The authors recommend five strategies for moving to low carbon transport while also improving access and equity: 1) avoid vehicle trips, 2) increase energy efficiencies and alternative energy sources, 3) shorten trip distances through better community design, 4) change travel modes to public transportation, and 5) increase active transportation including walking and cycling.

Agriculture.⁵ Greenhouse gas emissions from agriculture account for 22% of all global emissions, an amount similar to emissions from manufacturing and more than emissions from transportation. Within agriculture, the greatest harm comes from livestock production, which accounts for nearly 80% of the sector's emissions. Livestock production consumes almost one third of the world's entire land surface; one third of the arable land is devoted to growing feed that is eaten by livestock. Livestock production accounts for 18% of all global gas emissions, including 9% of global emissions of carbon dioxide, 35–40% in methane emissions and 65% of nitrous oxide emissions. McMichael et al recommend improving agriculture technology and processes to reduce emissions to the lowest possible level. They also recommend reducing subsidies for corn, soy, and other livestock feeds, citing statistics that 40% of the increase in obesity in the US in the past 25 years can be attributed to the reduced unit price of food, especially fat and sugar.⁶ They also recommend reducing the volume of meat consumed in developed nations to offset the projected increase that will occur in developing nations due to population growth and enhance prosperity. Their estimate is that per capita daily consumption of meat in developed nations must be reduced from 224 g to 90 g to offset the increased consumption that occurs in developing nations. They stress that such a reduction would have the added benefit of decreasing the risk of ischemic heart disease, obesity, colorectal cancer, and possibly other forms of cancer.

Sustainability and wellness are two concepts that have captured the interest of global leaders and the public. Linking them synergistically has the potential to accelerate their global adoption.

Michael O'Donnell

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¹ Horton R. Righting the balance: energy and health. *Lancet*, 2007; 370, 9591, 921.

² Woodcock J, Banister D, Edwards P, Prentice AM, Roberts I, 2007 Energy and transport. *Lancet*, 2007;370:1078–1088.

³ Peden M, Scurfield R, Sleet D, et al. World report on road traffic injury prevention. Geneva: World Health Organization, 2004.

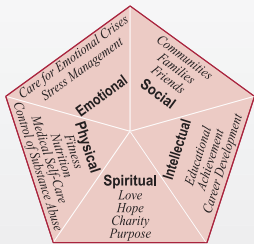
⁴ Pruss-Ustun A, Fewtrell L, Landrigan P, Ayuso-Mateos J. Lead exposure. In Ezzati M, Lopez A, Rodgers A, Murray C, eds, Comparative quantification of health risks. Geneva: World Health Organization, 2004.

⁵ McMichael A, Powles J, Butler C, Uauy R, 2007, Food, livestock production, energy, climate change, and health. *Lancet*, 2007;370:1253–1263.

⁶ Lakdawalla D, Philipson T. The growth of obesity and technological change: a theoretical and empirical examination. Working paper number 8946. Cambridge, MA: National Bureau of Economic Research, 2002.

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(O'Donnell, *American Journal of Health Promotion*, 1989, 3(3):5.)

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