



## THEME

GPs and the environment



### Graeme Horton

MBBS, MEnvStud, FRACGP, FARGP, is Senior Lecturer, Discipline of General Practice, University of Newcastle, New South Wales. [graeme.horton@newcastle.edu.au](mailto:graeme.horton@newcastle.edu.au)

### Parker Magin

PhD, FRACGP, is Senior Lecturer, Discipline of General Practice, University of Newcastle, New South Wales.

# Healthy patients, healthy planet

## Green recommendations for GP health promotion

### BACKGROUND

Prevention of illness and early detection of disease are recognised as part of the challenge all communities face in their quest to achieve sustainability.

### OBJECTIVE

This article examines how the preventive health practices of general practitioners have benefits for the environment, and explores opportunities for GPs to encourage patients to maintain their health in ways that have a low environmental impact.

### DISCUSSION

Our environment is threatened by the impact of human activity. Ecosystem degradation is in turn, a threat to the health and wellbeing of humans. Preventive health practices are self evidently beneficial to the health of patients. General practitioners have opportunities to modify their health promotion advice so that patients can improve their own health in ways that also help the environment.

**Our planet is struggling to cope with the burden of human activity. Our ecosystems are being altered and degraded to an extent greater than any other period of human history because of increasing demands for food, fresh water, fuel and timber. The implication of this burden is that it will be harder for future generations to meet their resource needs than it has been for ours.**

The ecological footprint concept is a method of explaining the dilemma which is relatively easy to grasp. It has been employed as an educational tool by numerous government agencies and other organisations.

Wackernagel and Rees, who originally devised the idea, identified that there is only so much land from which humans are able to extract resources and onto which waste can be deposited. It has been estimated that the current rate of resource consumption and waste generation is such that the equivalent of 1.2 earths would be needed if these activities were to continue into the future. If everyone lived like the average Australian, 3.6 earths would be required.<sup>1</sup>

However, we have only one planet. Resources, including productive land, are being depleted faster than can be regenerated. The land, water and air are polluted with materials which cannot be accommodated without adverse environmental impacts. This has been described as 'depleting nature's capital'.<sup>2</sup>

Carbon dioxide waste has recently been the focus of much public attention and concern. The scientific consensus that human activity is largely responsible for carbon dioxide levels increasing at rates which are accelerating, is now appreciated by the broader community.<sup>3</sup> The consequent rise in global temperature is a threat to human health and the nature of the risks has been well documented.<sup>4,5</sup>

General practitioners are especially familiar with the consequences of overconsumption at an individual level, as this is one of the main factors contributing to the epidemic of obesity. The profligate use of labour saving devices, including private transport, allows people to meet their needs and wants with minimal expenditure of their own metabolic fuel. Physical

inactivity accounts for 7% of disease in Australia and is responsible for 8000 deaths per year.<sup>6</sup>

General practitioners are recognised as credible and effective sources of scientific advice to the community. The relationship between GPs and their patients is seen as a valuable and effective base for the delivery of effective preventive health care.<sup>7</sup>

Therefore, there is a role for GPs in shaping the response of the broader community to these important issues. There are a number of ways in which both individual and environmental health can be addressed within the general practice consultation.

## Healthy diet

Diets that are in line with current preventive health recommendations are already environmentally friendly compared to the average diet. The widely used 'diet pyramid' encourages eating more plant foods – fruit, vegetables and grains, and lesser amounts of animal products. In an Italian study, Baroni et al<sup>8</sup> compared the average diet with that recommended by health authorities. The environmental impact of the recommended diet was 50% of the average Italian diet, and vegetarian or vegan (no animal products) diets had a lower impact.

Animal based diets have greater environmental impact than plant based diets due to differences in land use, water requirements and eutrophication (waste production).<sup>9</sup> In terms of fossil fuel consumption, obtaining 1 calorie of energy from beef requires the expenditure of 40 calories from fossil fuel, whereas only 2.2 calories of fossil fuel are required for each calorie of energy from grains.<sup>10</sup>

As community awareness of the relative environmental impacts of meat and plant based diets increases, it could be anticipated that more patients will opt for a vegetarian diet. Further encouragement is provided by studies that show health benefits for those on a vegetarian diet, with a reduction in risk for obesity, ischaemic heart disease, hypertension, diabetes, and some types of cancer.<sup>11</sup>

General practitioners are well placed to support patients who elect to adopt a vegetarian diet in ensuring that their nutritional needs are met. It is important that people on a vegetarian, and particularly a vegan, diet, pay attention to their intake of vitamin B12, iron, calcium and iodine as deficiencies occur if supplementation is inadequate. Patients at risk of deficiencies of one or more of these vitamins and minerals may need to be monitored or counselled accordingly.

There are many other ways of reducing the environmental impact of one's food intake, including:

- buying fresh food – which is associated with

less processing and therefore less greenhouse gas emissions

- buying locally produced seasonal food – which requires less fuel for transport and storage
- buying organic food – which requires fewer pesticides and fertilisers (however, these benefits can sometimes be outweighed if they are transported long distances)
- growing your own food – which can provide the benefit of exercise as well!

## Healthy exercise

General practitioners actively promote exercise because of the many benefits to health including reduction in the risk of hypertension, cardiovascular disease, obesity, depression and some types of cancer.

Many forms of exercise such as walking and cycling have minimal impact on the environment and can be actively promoted by GPs. The British Government has commented on the mutual benefits to the individual and to the environment of walking and cycling.<sup>12</sup>

General practitioners can also explore with patients the opportunities they have to engage in 'active transport'. This refers to people walking, cycling or using public transport (which generally involves walking for some of the journey) to go about their daily business rather than driving their car.

People who drive to work have been found to be less likely to achieve the recommended levels of physical exercise compared to those who commute by other means.<sup>13</sup>

An American study demonstrated that for every hour per day that a person spends in a car, their risk of obesity increases by 6%.<sup>14</sup> For many patients, substituting 'active transport' for private car transport will provide all the exercise necessary to obtain health benefit.

Public transport is also less polluting than private vehicle transport.<sup>15</sup> There is evidence that simple reminders about more 'active transport' can be effective. A study by Blamey<sup>16</sup> showed that people increase their use of stairs if signs proclaiming the health and environmental benefits of stairs are placed near elevators.<sup>16</sup>

## Healthy communities

Our communities have adapted to the widespread availability of low cost energy so that private vehicle transport is ubiquitous and alternatives such as walking and cycling are often difficult. Public transport services also tend to be concentrated in capital cities and regional centres.

Poor community design can result in people having to produce more greenhouse gasses in an effort to stay

healthy. If people need to drive to a gymnasium and or to suitable bicycle tracks, then personal attempts to curb greenhouse gas emissions could lead to a drop in physical exercise.

A strategy in which GPs can be involved is to advocate for our patients' health at public policy level. If governments and planners provide opportunities for people to go about their daily business (whether for basic needs such as grocery shopping, work or recreation) without having to restrict themselves to a motor vehicle, people are likely to exercise more and health benefits will follow. The promotion of bicycle paths and local sporting facilities can be seen as improving individual, community, and ecological health.

### Healthy future

General practitioners have opportunities to promote preventive health behaviours that have low environmental impact. For some patients, knowing that their healthy diets, exercise patterns and transport methods observe the principles of sustainability may reinforce those behaviours, leading to further health benefits.

The magnitude and urgency of the challenge to attain environmental sustainability is such that GPs may consider urging patients to reduce greenhouse gas production and other environmental impacts independent of immediate benefits to health. General practitioners are already accustomed to addressing matters of public health at the level of the individual patient. This occurs when issues such as community antibiotic resistance and herd immunity from immunisation is discussed.

General practitioner services are already overstretched; however there is no denying our influence over patients on matters of health. Involving patients in the challenge of addressing collective environmental threats may be the most important preventive health advice of all.

### Summary of important points

- General practice patients can be encouraged to improve their health in ways that have a low environmental impact.
- Dietary advice that encourages eating more plant foods and lesser amounts of animal products is in line with environmental principles.
- Walking, cycling and taking public transport instead of private car use can be part of an exercise prescription with positive effects on both health and the environment.
- GPs can advocate for better community planning to enable patients to maintain health in ways which are environmentally sustainable.

Conflict of interest: none declared.

### References

1. World Wildlife Fund. The living planet report 2006. Available at [http://assets.panda.org/downloads/living\\_planet\\_report.pdf](http://assets.panda.org/downloads/living_planet_report.pdf) [Accessed 1 September 2007].
2. Wackernagel M, Rees WE. Our ecological footprint. Reducing human impact on the earth. Gabriola Island, BC: New Society Publishers, 1996; p. 55–97.
3. The Lowy Institute for International Policy. Australia and the world: public opinion and foreign policy. Available at [www.loyinstitute.org/](http://www.loyinstitute.org/) [Accessed 1 September 2007].
4. McMichael AJ. World Meteorological Organisation, World Health Organisation, United Nations Environment Program. Climate change and human health: an assessment/prepared by a task group on behalf of the World Health Organisation, the World Meteorological Organisation and the United Nations Environment. Geneva: WHO 1996; p. 267–83.
5. Stern N. 2006. Stern review on the economics of climate change. United Kingdom Treasury. Available at [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm) [Accessed 6 November 2006].
6. Smoking Nutrition Alcohol Physical activity: a population health guide to behavioural risk factors in general practice. South Melbourne: The Royal Australian College of General Practitioners, 2004.
7. Commonwealth Department of Health and Ageing. General practice in Australia 2004 (2005). Available at [www.health.gov.au/internet/wcms/publishing.nsf/Content/03A249B7F2345922CA25705700121A1A/\\$File/Ch10.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/03A249B7F2345922CA25705700121A1A/$File/Ch10.pdf) [Accessed 28 July 2007].
8. Baroni L, Cenci L, Tettamanti M, Berati M. Evaluating the environmental impact of various dietary patterns combined with different food production systems. *European J Clin Nutr* 2007;61:279–86.
9. Leitzmann C. Nutrition ecology: the contribution of vegetarian diets. *Am J Clin Nutr* 2003;78(Suppl):657S–9.
10. Pimentel D, Pimentel M. Sustainability of meat based and plant based diets and the environment. *Am J Clin Nutr* 2003;78(Suppl):660S–3.
11. Rajaram S, Sabate J. Health benefits of a vegetarian diet. *Nutrition* 2000;16:531–3.
12. Alexander D. Speech by secretary of state for transport, 26 June 2006 to Transport, Atmosphere and Climate Conference. Available at <http://0-www.dft.gov.uk.library.newcastle.edu.au/press/speechesstatements/speeches/speechatthetransportatmosphe5887> [Accessed 29 July 2007].
13. Wen LM, Orr N, Millett C, Rissel C. Driving to work and overweight and obesity: findings from the 2003 New South Wales Health Survey, Australia. *Int J Obes* 2006;30:782–6.
14. Frank L, Andresen M, Schmid T. Obesity relationships with community design, physical activity, and time spent in cars. *Am J Prev Med* 2004;27:87–96.
15. Joumard R. The stakes of air pollution in the transport sector, from the French Case. *Atmos Environ* 2005;39:2491–7.
16. Blamey A, Mutrie N, Aitchison T. Health promotion by encouraging use of stairs. *BMJ* 1995;311:289–90.