

consultant, I am delighted to see the multidisciplinary approach move centre stage.

Currently I am working with an international network of community information-centre initiatives to scale up and multiply success stories of integrated development projects that have an impact on malnutrition and other indicators of poverty. Most of my own work is linked with South Africa. I applaud Mark Wahlqvist's vision of the potential for information technology at local levels<sup>2</sup>.

My thinking and experience have taught me that in general with food and nutrition policies and programmes, reductionist science is poor science. Not all disciplines have to be subjected to the laboratory methodologies of physical science to be valid. As proposed in *The Giessen Declaration*<sup>3</sup>, nutrition should include social and environmental dimensions. I would go further. National mindset surveys, like those conducted in South Africa, show that religious and other philosophies of life are vital. In Africa over half the total health budget is administered by faith-based organisations: these give credibility at community level and deal with issues such as changes of heart, spiritual health and local accountability.

*The Giessen Declaration* includes the concept of co-responsibility with humanity as a whole, and with the living and physical world, within its overall ethical principles. This is a good start. But I caution against misuse of its emphasis on an evolutionary approach. This could be taken as promotion of the 'social Darwinism' that has done much to rationalise racism, fascism and 'red in tooth and claw' capitalism.

For the International Congress on Nutrition to be held in Bangkok in 2009, I propose a one-day Global Nutrition Planners' Forum, along the lines of that held at the Rio congress in 1977, which I attended. This should accelerate networking and sharing of insights between delegates from international agencies, governments and non-government organisations involved in food and nutrition development at all levels.

Jim Anderson  
Institute for Development Research  
PO Box 70, Woodstock Road  
Oxford, UK

<http://www.idr.ocms.ac.uk>  
Email: [wilberforceza@yahoo.com](mailto:wilberforceza@yahoo.com)  
DOI: 10.1079/PHN2006950

## References

- 1 Leitzmann C, Cannon G, eds. The New Nutrition Science project [special issue]. *Public Health Nutrition* 2005; **8**(6A): 667–804.
- 2 Wahlqvist M. The new nutrition science: sustainability and development. *Public Health Nutrition* 2005; **8**(6A): 766–72.

- 3 The Giessen Declaration, *Public Health Nutrition* 2005; **8**(6A): 783–6. Also available at <http://www.iuns.org>.

## Diabetes: what about patterns, fruits and vegetables?

Sir,

Diabetes: what about patterns, fruits and vegetables? review article on diet, nutrition and the prevention of type 2 diabetes published in 2004 presented an overview of studies relating various dietary factors to type 2 diabetes risk and summarised the respective evidence<sup>1</sup>. Although the authors stated in their objectives that they would evaluate the current literature on diet and lifestyle with respect to diabetes prevention, not all dietary factors discussed in the literature were included and addressed. In particular, fruit and vegetable intake and dietary patterns were not mentioned, two factors which, in my view, should have been included. Even though the evidence for their effect might not be as strong as for other dietary factors, their public health relevance implies that they should at the very least be touched upon. Prior to 2004, the results of four prospective cohort study analyses, assessing the association between fruit and vegetable intake and the risk of type 2 diabetes, were published<sup>2–5</sup>. Three further prospective studies have looked at the effect of dietary patterns<sup>6–8</sup>. All of these studies identified dietary patterns that were protective against type 2 diabetes, and two of these patterns included high intakes of fruits and/or vegetables. A very recent publication of a dietary pattern analysis further supports these findings<sup>9</sup>. Furthermore, and probably more importantly, randomised controlled trials on the effectiveness of lifestyle interventions to reduce type 2 diabetes incidence have been conducted. The interventions included recommendations to increase fruit and/or vegetable intake and significantly decreased diabetes risk<sup>10,11</sup>.

In summary, there is considerable amount of information in the literature on the relationship of fruit and vegetable intake and dietary pattern to type 2 diabetes risk. In addition, although there is an extensive literature with respect to dietary antioxidants and their potential role in the pathogenesis of type 2 diabetes, as one potential underlying mechanism, these were also not mentioned (except for vitamin E). Given that the authors mentioned other dietary factors with fewer available data such as breast-feeding, fruit and vegetable intake and dietary patterns should have been included in order for this review on diet and type 2 diabetes to be comprehensive.

Anja Kroke  
Research Institute of Child Nutrition Heinstueck 11,  
D-44225 Dortmund, Germany

Email: [Kroke@fke-do.de](mailto:Kroke@fke-do.de)

DOI: 10.1079/PHN2005900

## References

- 1 Steyn NP, Mann J, Bennett PH, Temple N, Zimmet P, Tuomilehto J, *et al.* Diet, nutrition and the prevention of type 2 diabetes. *Public Health Nutrition* 2004; **7**(1A): 147–65.
- 2 Colditz GA, Manson JE, Stampfer MJ, Rosner B, Willett WC, Speizer FE. Diet and risk of clinical diabetes in women. *American Journal of Clinical Nutrition* 1992; **55**(5): 1018–23.
- 3 Feskens EJ, Virtanen SM, Rasanen L, Tuomilehto J, Stengard J, Pekkanen J, *et al.* Dietary factors determining diabetes and impaired glucose tolerance. A 20-year follow-up of the Finnish and Dutch cohorts of the Seven Countries Study. *Diabetes Care* 1995; **18**(8): 1104–12.
- 4 Ford ES, Mokdad AH. Fruit and vegetable consumption and diabetes mellitus incidence among US adults. *Preventive Medicine* 2001; **32**(1): 33–9.
- 5 Meyer KA, Kushi LH, Jacobs DR Jr, Slavin J, Sellers TA, Folsom AR. Carbohydrates, dietary fiber, and incident type 2 diabetes in older women. *American Journal of Clinical Nutrition* 2000; **71**(4): 921–30.
- 6 Hu FB, Manson JE, Stampfer MJ, Colditz G, Liu S, Solomon CG, *et al.* Diet, lifestyle, and the risk of type 2 diabetes mellitus in women. *New England Journal of Medicine* 2001; **345**(11): 790–7.
- 7 van Dam RM, Rimm EB, Willett WC, Stampfer MJ, Hu FB. Dietary patterns and risk for type 2 diabetes mellitus in US men. *Annals of Internal Medicine* 2002; **136**(3): 201–9.
- 8 Fung TT, Schulze M, Manson JE, Willett WC, Hu FB. Dietary patterns, meat intake, and the risk of type 2 diabetes in women. *Archives of Internal Medicine* 2004; **164**(20): 2235–40.
- 9 Heidemann C, Hoffmann K, Spranger J, Klipstein-Grobusch K, Mohlig M, Pfeiffer AF, *et al.* A dietary pattern protective against type 2 diabetes in the European Prospective Investigation into Cancer and Nutrition (EPIC)–Potsdam Study cohort. *Diabetologia* 2005; **48**(6): 1126–34.
- 10 Pan XR, Li GW, Hu YH, Wang JX, Yang WY, An ZX, *et al.* Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance. The Da Qing IGT and Diabetes Study. *Diabetes Care* 1997; **20**(4): 537–44.
- 11 Tuomilehto J, Lindstrom J, Eriksson JG, Valle TT, Hamalainen H, Ilanne-Parikka P, *et al.* Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *New England Journal of Medicine* 2001; **344**(18): 1343–50.