

# The challenge to movers and shakers: broad strategies to prevent obesity and diabetes

✎ Philip James and Neville Rigby

*We know that in both Western and Asian adults in the vulnerable overweight groups with **impaired glucose tolerance**, modest weight loss with specific changes in diet and physical activity can reduce the likelihood of developing Type 2 diabetes. Marked weight loss in severely obese people with diabetes can also ameliorate the risks from their diabetes perhaps for a decade or more. However, clinical interventions to achieve this require intensive personal supervision, which, as a prevention and management strategy involving millions of children and adults, is difficult to provide. In this article Philip James and Neville Rigby make a call for radical new strategies to combat obesity and diabetes worldwide.*



Obesity exposes a person's susceptibility to Type 2 diabetes. Furthermore, new analyses suggest that even modest weight gain has a powerful impact on the risks for those who are genetically or physiologically vulnerable. Around 90% of Type 2 diabetes is attributable to excess weight, with the risk rising progressively from a **body mass**

**index** of 21 kg/m<sup>2</sup>; physical inactivity then amplifies the impact of weight gain on a person's insensitivity to insulin (**insulin resistance**).

Many ethnic groups are especially vulnerable to the effects of adiposity (being fat). This may in part have a genetic basis. However, there are powerful nutritional effects on a child's

early fetal and infantile development that make a relatively undernourished baby susceptible, upon subsequent excess weight gain, to a rapid increase in insulin resistance. Added to a probable reduction in the capacity of the pancreas to secrete insulin, this may explain the remarkable prevalence of Type 2 diabetes in Asia for example, where millions of adults have the condition despite their relatively modest obesity levels. (For more on the genetic versus the social factors behind Type 2 diabetes, see the article by Claudia Chaufan in this issue.)

## Clear evidence: diabetes is preventable

In clinical trials in Minnesota, USA the personalized education approach to improve diets and physical activity through individual counselling was shown not to affect weight gain at all. Furthermore, only one, largely unpublished, national intervention strategy (in Singapore, see *Diabetes Voice* 2003; 48 (Prevention): 49-50) to address overweight in children appears to have brought any benefit. In Finland a third of the country's population is involved in a broad strategy of which improvement in

diabetes care is a part; these people are screened through chemists (pharmacies) and other non-medical settings for potential glucose intolerance on the basis of waist measurement, age, and family history of diabetes.

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Major controlled trials with subsequent analyses validating some benefits would require 10-15 or more years to test even simple schemes; some countries would need to agree to provide 'control' populations who would be denied treatment – an unethical option. This cautious approach to policy development therefore condemns millions more people to diabetes, provoking the corresponding rise in medical and societal costs. This problem led a UK Treasury group, appointed by the Chancellor of the

Exchequer (chief finance minister), to advocate new societal interventions which are coherent and potentially would involve a series of economic and regulatory measures to help combat the epidemics of obesity and diabetes.

### There is no miracle cure

Despite the fact that many government policies as well as technical and industrial innovations have contributed to inactivity and overeating, doctors, policy makers, civil servants and government ministers all want a single dramatic quick fix to combat weight gain and 'diabesity'. However, while some technological changes are permanent, such as computers, other factors may need to be modified or even restricted. Major economic interests are affected in the areas of transport, food, advertising and farming. Inevitably, there is intense interest from the industries affected. These often lobby governments to oppose health-related developments.

The 'leisured society', an environment dominated by cars, computers and all manner of labour-saving devices, has led to a reduction in physical activity

equivalent to perhaps 500-750 calories per day compared with 50 years ago. To offset this, the corresponding limited intake of food now needs to be of unprecedented nutritional quality at a time when fat, sugars and salt – all conducive to biologically driven over-consumption – are ever cheaper, intensely marketed and available everywhere.

Food prices, currently manipulated by huge European Union (EU), US, and Japanese subsidies, have a major effect on purchasing habits, with fats and sugars being heavily subsidized. These calorie-packed foods have become the cheapest and most appealing to the poor and prudent shopper. The marketing to children of these energy-dense foods and soft drinks is almost guaranteed to manipulate their diets and harm their health.

Politicians, with very little time to consider any one issue, tend to side with big industry, rather than giving careful consideration to the development of coherent strategies for health and >>

A person has **impaired glucose tolerance** (IGT) when their blood glucose (sugar) levels are higher than normal, but below the level of a person with diabetes. Most people with IGT are at increased risk for developing Type 2 diabetes.

**Body mass index** (BMI) is an index for measuring body weight in relation to someone's height. BMI can be calculated by dividing a person's weight in kilograms (kg) by their height in metres squared ( $m^2$ ). Overweight is a BMI of above  $25.0 \text{ kg}/m^2$ , obese is above  $30.0 \text{ kg}/m^2$ , and severely obese above  $35.0 \text{ kg}/m^2$ . In Asia the recently recommended corresponding BMIs are 23.0, 25.0 and  $30.0 \text{ kg}/m^2$  respectively.

For an explanation of the term **insulin resistance**, see page 25 of this issue.



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industrial compatibility. When industrialists and politicians assume that the major changes that are needed will be implemented overnight, there is additional concern. In practice, a 5-15-year time scale is involved in all successful public health measures relating to dietary change.

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### The new agenda: protect our children and the vulnerable!

All efforts at consumer education have clearly failed to reduce our intake of calories, even, as recently suggested, by minor changes of 50-100 calories per day. Each country needs a national strategy group in order to develop short-term, intermediate and long-term strategies for radical interventions. This group or council should be independent of government ministers and report directly to the parliament. The strategy group should have access to both the media and to analyses of the dimensions of, and constraints on, any proposed governmental measure. Such bodies exist: in Norway and in modest form as food standards agencies in France, Denmark, the UK, and potentially in the EU.

Policies are required to:

- ♦ readjust taxation systems to counteract the hugely disadvantageous past and current farm subsidies
- ♦ limit the marketing of potentially harmful foods and drinks to our currently vulnerable and unprotected children

- ♦ limit the expansion of outlets for take-away foods
- ♦ provide comprehensible and simple food labelling on all food products, indicating which foods are high in fat, sugars and salt.

Physical activity in children is often constrained by the lack of safe play areas, and walking and cycling routes immediately adjacent to homes. School sport and other activities have been reduced or designed with only competitive sports in mind with little regard to gender-based preferences or sensitivities during adolescence. Pedometers, easy public access to gyms, parks and other facilities may all help. But whether we are dealing with our future physical environment or with the food environment, we must recognize that serious, radical and progressive steps are now necessary.

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Of course the changes will be gradual as individuals and communities revise what is 'acceptable' behaviour. This happened in many countries with smoking, the use of seat belts, drink driving and other behavioural patterns. We must recognize the need for a major change in our food supply, while still meeting the desire for quality, choice and entertainment in food. If not, we will be condemning the less-affluent, disadvantaged and poorly educated members of our societies to the terrible disabilities associated with poorly controlled 'diabesity' and its concomitant problems.

The major challenge is to persuade society's 'movers and shakers' to tackle the unique set of circumstances now confronting mankind: billions of human beings have never before been required to do so little physical work whilst being offered a cornucopia of calorie-laden foods, designed specifically to exploit our primitive drives for those formerly rare commodities of fat, sugar and salt. Solving this problem is the biggest health challenge of all. This is where society's leaders and patient groups must excel as the movers and shakers of the politicians!

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Philip James and Neville Rigby are co-authors of a section in the new publication *Diabetes and Obesity: Time to Act*, which has been produced jointly by the International Association for the Study of Obesity and the International Diabetes Federation. The publication, corresponding with the theme of World Diabetes Day 2004, reflects the widespread concern that obesity and Type 2 diabetes currently threaten the health, well-being and economic welfare of virtually every country in the world.

To order copies of *Diabetes and Obesity: Time to Act*, complete the form on page 23 of this issue.