Clinical Medicine 2013, Vol 13, No 4: 328–9

Preventing diabetes: a call for concerted national action

Tahseen A Chowdhury and Nicholas Finer

Many words have been written about the epidemic of type 2 diabetes (T2D) in developed and developing countries, and there are few clinicians at the coal face who do not feel overwhelmed by the tsunami of diabetes cases being experienced, particularly in multi-ethnic urban areas. It is clear that preventing diabetes is certainly more cost effective than treating the condition and its attendant complications. We now have strong randomised trial evidence that intervention, either by pharmacological or lifestyle methods, in patients with pre-diabetes can reduce risk of incident diabetes.[1,2,3] The seeds of diabetes are, however, sown in childhood and nurtured by environmental factors which require concerted action to break. It is clear, therefore, that prevention of diabetes should start earlier than the phase of pre-diabetes.

Increasingly concerning is the fact that the onset of T2D is occurring at an ever-younger age and is now common among children and young adults. In high-risk ethnic groups, it seems likely that T2D is set to take over from type 1 as the predominant cause of diabetes in children.[4,5] The younger the age of onset of the disease, the greater the potential for complications to occur. While obesity and sedentary physical lifestyles are the main enabling factors for T2D in youth, there is growing evidence that in-utero exposure to hyperglycaemia may increase the risk of diabetes in offspring.[6] This may suggest that vigorous control of hyperglycaemia in women with gestational diabetes may be of importance in the prevention of diabetes in their children.

In the UK, the National Institute of Health and Clinical Excellence (NICE) has recently published guidelines on the prevention of diabetes.[7] They exhort local and national action to tackle obesity and physical inactivity. Local action suggested includes provision of community-based weight management programmes for people who are overweight or obese, which is sensible given the outcomes of lifestyle interventions in trials of pre-diabetes and in people with early diabetes. The guidelines appropriately state that communities at high risk of diabetes should be targeted with culturally appropriate interventions. Implementation, however, has been limited and timid at best – perhaps from an unwarranted sense of nihilism by those responsible for commissioning and a lack of financial incentives (for example from Quality Outcomes Framework payments) by those who might support or deliver these interventions. When patients are referred for intervention it is often too little and too late.

Tahseen A Chowhury,[1] consultant in diabetes and metabolism; **Nicholas Finer,**[2] consultant endocrinologist and bariatric physician

[1]Department of Diabetes and Metabolism, The Royal London Hospital, London, UK; [2]National Centre for Cardiovascular Prevention and Outcomes, UCL Institute of Cardiovascular Science

The guidelines also exhort national governmental action to prevent diabetes. They suggest that the UK government works with food manufacturers to improve composition of foods and develop clear nutritional labelling information, and also with food retailers to reduce the costs of healthier foods. The UK government's response has been muted and restricted to policies around 'nudging' people into healthy behaviours. Information programmes such as 'Change 4 Life' have been pushed as a national response to this public health crisis.[8] The effects of such policies appear to be limited and at best offer a minor short term benefit. Such programmes have also received criticism for their sponsorship by commercial companies producing sugar-sweetened beverages and unhealthy cereals.[9]

Is it now time to go further and use legislation to develop tougher policies to tackle the modifiable environmental factors in which the seeds of diabetes can flourish? This requires political courage and a longer-term view. Could we learn from across the Atlantic? In the USA, public health authorities are now starting to debate tackling the food industry head on, and are developing public health measures designed to reduce the rising toll of obesity, particularly in children. For example, the recent stand of Mayor Bloomberg in New York banning supersize drinks sales in state premises is the sort of policy statement that suggests the government means business.[10] It is regrettable that this policy has been reversed by the US courts recently. The apologists for the food industry have predictably targeted the 'nanny state' and exhorted the freedom of individuals to eat and drink however much they like. But recent randomised trials suggest that limiting sugar-sweetened beverages in children and adolescents reduces weight gain.[11,12] The debate is also turning towards banning calorie-dense food advertising and curtailing the 'candy at the cash register' culture in retailers.[13] It is, however, disappointing that the Danish government's tax on foods containing more than 2.3% fat was abandoned after only one year, alongside plans for a sugar tax.[14]

The health benefits of reducing weight and improving physical activity will not just be seen in diabetes prevention, but also in prevention of cardiovascular disease, cancer and mental illness. The costs are likely to be significant, and the health and financial benefits are not likely to be seen immediately, but will accrue over decades.

The 2012 Olympic Games held in London aimed to 'inspire a generation'. While the Games were a huge national success for the UK, the fact that their major sponsors were food and drinks manufacturers of calorie-dense products was disconcerting for many. We need to break the link between elite sports and calorie-dense foods. We need concerted food policy action that rewards companies that promote healthy foods and inhibits sales of poorly nutritious food and drinks at low cost. We need urgent

national governmental action to improve physical activity, thereby improving the health of our nation and inspiring a generation to be fitter and less fat. Surely then the legacy of the Olympic Games will be achieved.

References

1 Knowler WC, Barrett-Connor E, Fowler SE *et al.* Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002;346:393–403.
2 Tuomilehto J, Lindstrom J, Eriksson JG *et al.* Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* 2001;344:1343–1350.
3 Caterson I, Finer N *et al.* Maintained Intentional Weight Loss Reduces Cardiovascular Outcomes: Results from the Sibutramine Cardiovascular Outcomes (SCOUT) Trial. *Diabetes Obes Metab* 2012;14:523–30.
4 Alberti KGMM, Zimmet P, Shaw J *et al.* Consensus Workshop Group. Type 2 diabetes in the young: the evolving epidemic. *Diabetes Care* 2004;27:1798–1811.
5 Kitagawa T, Owada M, Urakami T, Yamanchi K. Increased incidence of non-insulin dependent diabetes mellitus among Japanese school children correlates with an increased intake of animal protein and fat. *Clin Pediatr* 1998;37:111–116.
6 Gillman MW, Oakey H, Baghurst PA *et al.* Effect of treatment of gestational diabetes mellitus on obesity in the next generation. *Diabetes Care* 2010;33:964–68.
7 The National Institute for Health and Clinical Excellence. Preventing type 2 diabetes: population and community-level interventions in high-risk groups and the general population. London: NICE, 2011. www.nice.org.uk/nicemedia/live/13472/54345/54345.pdf [Accessed 3 May 2013].
8 NHS. Change 4 Life, 2013. www.nhs.uk/change4life/Pages/change-for-life.aspx. [Accessed 3 May 2013].
9 The Lancet. Change4Life brought to you by PepsiCo (and others). *Lancet* 2009;373:96.
10 Pomeranz JL, Brownell KD. Portion sizes and beyond – government's legal authority to regulate food-industry practices. *N Engl J Med* 2012;367:1383-5.
11 de Ruyter JC, Olthof MR, Seidell JC, Katan MB. A trial of sugar-free or sugar-sweetened beverages and body weight in children. *N Engl J Med* 2012;367:1397–1406.
12 Ebbeling CB, Feldman HA, Chomitz VR *et al.* A randomized trial of sugar-sweetened beverages and adolescent body weight. *N Engl J Med* 2012;367:1407–16.
13 Cohen DA, Babey SH. Candy at the cash register – a risk factor for obesity and chronic disease. *N Engl J Med* 2012;367:1381–3.
14 Strom S. 'Fat tax' in Denmark is repealed after criticism. *The New York Times*, Nov 12 2012;B4. www.nytimes.com/2012/11/13/business/global/fat-tax-in-denmark-is-repealed-after-criticism.html?_&_r=0 [Accessed 5 June 2013].

Address for correspondence: Dr TA Chowdhury, Department of Diabetes and Metabolism, 7th Floor, John Harrison House, The Royal London Hospital, Whitechapel, London E1 1BB. Email: tahseen.chowdhury@bartshealth.nhs.uk

Acknowledgement

The digital patient

Timothy Bonnici, Lionel Tarassenko, David A Clifton and Peter Watkinson

Clinical Medicine 2013;2:252–7.

The authors of this article would like to make the following disclaimer statement:

The work underpinning this article was supported by the Engineering and Physical Sciences Research Council (EPSRC) [Grant EP/F058845/1] and the National Institute for Health Research (NIHR) Oxford Biomedical Research Centre Programme. The views expressed are those of the authors and not necessarily those of the EPSRC, the NHS, the NIHR or the Department of Health.