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Sir K George Alberti is a Senior Research Fellow at Imperial College, London, Emeritus Professor of Medicine at the University of Newcastle and National Director for Emergency Access at the Department of Health in London. He is also Vice President of Diabetes UK. He was previously President of the International Diabetes Federation (IDF), the European Association for the Study of Diabetes (EASD) and the Royal College of Physicians, London. He has worked closely with the World Health Organization (WHO). Professor Alberti has a particular interest in type 2 diabetes in the developing world and in the metabolic syndrome.

The world is facing a pandemic of type 2 diabetes – described colourfully as a ‘tsunami’ by Professor Zimmet of Australia. The number of sufferers is estimated to increase from 246 million to 380 million by 2030 – an unaffordable burden for most national health budgets. Diabetes is associated with an increased risk of macrovascular disease: myocardial infarction, stroke and peripheral vascular disease. The increase in diabetes is indeed likely to cause a reversal of the slow fall in heart disease being seen in the developed world and will lead to a major increase in cardiovascular disease in the developing world. Among the more concerning aspects of the increase in type 2 diabetes is the falling age at onset, with type 2 diabetes now not uncommon in young people; the result of this is that the long-term complications – including both micro- and macrovascular disease – of diabetes are occurring at younger ages. The main associations are the parallel epidemics of obesity and physical inactivity; indeed, type 2 diabetes is a classic lifestyle disorder.

Inevitably, the only realistic solution is primary prevention. The problem is putting this into practice. The most cost-effective intervention is of course lifestyle modification. This has been shown to be effective in preventing the development of diabetes in high-risk individuals – mostly those with ‘pre-diabetes’ – in experimental settings. This has been demonstrated in the US, China, Finland and India, for example. In all cases more than 50% prevention or delay in onset was achieved. However, these studies were relatively short-term and what we are seeking is lifetime prevention. There are two big problems: first, how do we apply these lifestyle measures in ‘free-range’ individuals, and second, how do we find those people at highest risk? Perhaps the most effective approach is behavioural change of a whole society; however, this requires governmental action with regard to nutrition, education and exercise, and needs the re-education of industry as well as of the public. On a smaller scale, we have had some success with discrete communities, with the community leaders playing a major role.

Detection of individuals at high risk is also important. Age and family history of diabetes are important, and people need to be reminded of this. Another very helpful preliminary screening test is measurement of waist circumference. For example, Diabetes UK is running a ‘know your number’ campaign that is leading to people going for blood glucose testing. Screening of people with cardiovascular disease or hypertension is also useful, and opportunistic screening of people who attend a healthcare facility can also be helpful.

Another outstanding question is whether drug therapy helps or should be used. Several studies have shown benefits of drugs such as metformin, acarbose and thiazolidenediones. Weight-loss drugs may also have a place; others will follow. However, it is essential that such drugs are as safe as possible for long-term use, particularly as not everyone at high risk will actually develop the disorder. Surgical intervention in the very obese also has dramatic effects, but will be available only for a very small percentage of those at risk. Ideally, lifestyle modification should be used. Pragmatically, it may be necessary to use a cheap drug such as metformin, although this is not an ideal solution, and may be quite impractical in the face of the tens of millions of people at high risk. Until we have strong international concerted governmental action with powerful education at every level, the outlook is gloomy.

European Endocrinology would like to thank all contributors to this sixth edition, especially the individual authors for their time and hard work. The result is a very interesting and informative series of articles that we hope you enjoy reading and that we are certain will provide valuable insight into a number of common and not so common endocrine disorders. ■