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## Reversal of diabetes: Do we now need to revise our way of thinking?

**“The beginning of knowledge is the discovery of something we do not understand.”**

**Frank Herbert**

For medical students and young doctors in training, the topic of “breaking bad news” has been a recurrent curriculum topic for many years. Most often this involves the discussion of lethal “high-profile” medical conditions such as cancer or motor neurone disease. However, the immediate aftermath of the diagnosis of type 1 diabetes also requires very careful handling given the nature of the condition: life-long, incurable, with the need for daily injections and the risk of dreadful consequences not only from the condition itself but also its treatment. There is probably no ideal way of breaking the bad news associated with an important medical diagnosis but the view of the physician Richard Asher remains relevant to this day: “despair is best treated with hope, not dope”. Anecdotal evidence suggests an individual’s approach to living with type 1 diabetes appears to be influenced significantly by their experiences during the early years after the diagnosis.

Should a similar approach be taken to breaking the news about the diagnosis of type 2 diabetes? In the UK, considerable time, effort and resources have gone into creating community-based programmes for people with a recent diagnosis of type 2 diabetes. Until recently the emphasis of these types of programme seems to have been on containment of the condition rather than the discussion of a potential “cure”. Perhaps nowadays this approach needs to be reconsidered with recent data showing that a short programme of severe calorie restriction can lead to normalisation of fasting glucose levels, restoration of first-phase insulin response and reversal of the diabetes state (Taylor, 2011). Even in the absence of diabetes reversal, the achieved HbA<sub>1c</sub> level within the first 3 months after diagnosis seems to be an important marker of future risk of premature death (Kerr et al, 2011).

These new data suggest that intensive lifestyle efforts should be made at the time of the diagnosis of type 2 diabetes with the aim of reversing the condition. Clearly this approach is not suitable for everyone and the potential for alternative diagnoses such as slow-onset type 1 diabetes always need to be considered. Also some healthcare providers will inevitably get hung up about terminology suggesting that type 2 diabetes cannot be “cured” as such but rather “reversed” or be “in remission”. The challenge for the diabetes care community is to: (a) accept that reversal is possible in some individuals; and (b) devise programmes of education and support that will offer the potential for reversal for those just developing the condition. In addition it may also make sense to bolt on much more intensive lifestyle programmes for people starting to use injectable glucagon-like peptide (GLP) products to maximise their potential benefits, particularly for those where weight loss may be substantial.

One option is to encourage greater use of technology to support people with type 2 diabetes. Interest in mobile health (mHealth) applications for self-management of diabetes is growing at a pace over recent years. The idea behind this is that giving people access to their own data at frequent intervals and developing easy-to-use devices based on successful approaches in the consumer electronics industry will result in positive behaviour change. Although there are a huge number of these apps available, recent evidence suggests that there remain gaps between evidence-based guidelines and the actual functionality of devices. Devices that encourage patient education and include social media to support behaviour change are also still lacking in the diabetes “space” (Chomutare et al, 2011). In a nutshell, it would make clinical and economic sense for app designers to engage more closely with clinicians involved in the care of people with diabetes and with the people with diabetes themselves.

The news that type 2 diabetes can be reversed is welcome and people with the diagnosis have a right to be made aware of this. Appropriate support systems need to be devised to aid the requirement for major lifestyle change at diagnosis and to monitor individuals to make sure that diabetes does not return. This is likely to be enormously cost-effective at a public health level. Given the continued rise in the number of people with the condition, the alternative of maintaining the *status quo* will be a bankrupt healthcare system. ■

Chomutare T, Fernandez-Luque L, Arsand E, Hartvigsen G (2011) Features of mobile diabetes applications: review of the literature and analysis of current applications compared against evidence-based guidelines. *J Med Internet Res* **13**: e6

Kerr D, Partridge H, Knott J, Thomas P (2011) HbA<sub>1c</sub> 3 months after diagnosis predicts premature mortality in patients with new onset type 2 diabetes. *Diabet Med* **28**: 1520–4

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