



**David Kerr**  
Editor

## ***Deus ex machina***

**“Technology is like a fish. The longer it stays on the shelf, the less desirable it becomes.” – Andrew Heller**

In ancient Greek theatre, towards the end of the performance, a crane was often used to lower an actor playing a god onto the stage to solve an apparently intractable problem in the plot-line. Nowadays, this “God from the machine” approach seems to be a fashionable belief for technology enthusiasts within the diabetes care community.

Across the UK, continuous glucose monitoring (CGM) systems are being used more and more often to try and help with difficult and, at times, perplexing clinical problems, such as suspected nocturnal hypoglycaemia or suspected unrecognised daytime hyperglycaemia. However, if one looks at the literature, the evidence in favour of real-time CGM systems comes mainly from studies in which the devices are worn for >6 days in any week in people with type 1 diabetes (Juvenile Diabetes Research Foundation CGM Study Group, 2008; 2009). The evidence in favour of intermittent use is almost non-existent at present. There is some evidence that the use of real-time CGM can produce meaningful lifestyle changes in people with poorly controlled type 2 diabetes, with positive effects on exercise and weight control, as well as improvements in glycaemic control (Yoo et al, 2008). While awaiting conclusive studies of the efficacy of real-time CGM devices in people with type 2 diabetes, perhaps the time has come for a renaissance for self-monitoring of blood glucose (SMBG) systems?

The debate about the use (or misuse) of SMBG in non-insulin treated type 2 diabetes continues (Gale, 2009), and the current financial climate is likely to make provision of SMBG devices an easy target for cuts by non-believers. The problem for SMBG is two-fold: one of image (painful, messy, primitive), the other of controversies around the evidence (a consequence of previous studies focusing entirely, although understandably, on glycaemia and HbA<sub>1c</sub> levels, which may actually represent a missed opportunity). While we wait for the cost of real-time CGM to come down, perhaps we should think about novel approaches to introducing SMBG using outcomes beyond just HbA<sub>1c</sub> levels, such as lifestyle changes and cardiovascular risk reduction? This approach would emphasise the link between excess weight, glycaemia and blood pressure.

I am frequently asked why manufacturers do not combine SMBG with mobile phones. Apparently, this would turn a phone into a medical device and raise all sorts of issues for mobile phone companies in terms of regulatory and legal implications. Short of that, devices resembling and functioning like the Apple iPod or iPhone are likely to be readily accepted by people living with diabetes, especially if a range of applications can be added according to their needs.

Recently in *Diabetologia*, Edwin Gale (2009) reminded us of Osler’s old maxim: “Never be the first, or the last, to use a new drug.” With technology and diabetes care it does seem to be a different matter – albeit with the caveat that the perfect *deus ex machina* does not exist.

Gale EAM (2009) Collateral damage: the conundrum of drug safety. *Diabetologia* **52**: 1975–82

Juvenile Diabetes Research Foundation Continuous Glucose Monitoring Study Group (2008) Continuous glucose monitoring and intensive treatment of type 1 diabetes. *N Engl J Med* **359**: 1464–76

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Yoo H, An H, Park S et al (2008) Use of a real time continuous glucose monitoring system as a motivational device for poorly controlled type 2 diabetes. *Diabetes Res Clin Pract* **82**: 73–9

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