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## Type 1 diabetes self-management: a patient's experience of using CGMS

Sir, I have had brittle type 1 diabetes for 32 years from the age of 10, developing cataracts and peripheral neuropathy at 13 years, and autonomic neuropathy and severe gastroparesis aged 20 causing difficulty in matching my insulin needs to the rate of digestion. In 2000 I gained funding for insulin pump therapy, allowing me to moderate my basal and bolus insulin requirements accordingly. My complications have stabilised and my average HbA<sub>1c</sub> is always 6–7%. I do not have a pump-trained diabetes consultant.

In April 2009 I asked my PCT to fund a CGMS, stating the reasons why I have a clinical need for this treatment, emphasising my frequent hypoglycaemia with no warning signs. I pointed out that a system that could warn me of my blood glucose trends would be of immense benefit to my quality of life. I also provided the annual CGMS funding costs. In May 2009 my PCT agreed ongoing funding of an insulin pump with integral CGMS.

The CGMS is calibrated 3–4 times a day with SMBG levels for optimal results. I insert the sensor subcutaneously into my abdomen and it reads interstitial glucose levels every 10 minutes. This signal is transmitted to the pump's software, forming a graph displayed on the pump screen. I set my desired glucose limits at 4–10mmol/L to gain tighter control with gastroparesis, resulting in frequent alarms as the pump alerts me of predicted glucose trends. I have opted to silence the nocturnal expected high alarms because of disturbed sleep.

Many of the alarms are predicted post-prandial highs allowing me to fine-tune my bolus and basal insulin requirements after meals. I soon realised that tissue and blood glucose levels are dissimilar. When comparing the accuracy of a typical six-day (144 hours) sensor life, only half of my paired sensor and blood glucose readings are the same or within 0.5mmol/L, but at least five

readings show a difference of 9mmol/L or more.

It is difficult to maintain normoglycaemia without the increased risk of hypoglycaemia as diabetes control is tightened. However the benefits of using this system far outweigh any disadvantages in replacing my absent hypoglycaemia warning signs, allowing me to take remedial action and giving peace of mind. It has also enabled improved glycaemic control which will help slow the progression of current and future complications of diabetes. I would recommend the CGMS to anyone wishing to effectively self-manage their diabetes.

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