

'Hypo' attacks in type 1 diabetes could be managed more effectively

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(Medical Xpress)—More effective management could dramatically reduce the number of dangerous and potentially devastating hypoglycaemic events experienced by people with type 1 diabetes, a new study has found.

More than 300,000 people in the UK live with type 1 diabetes and nearly half of those will experience a severe hypoglycaemic episode every year. 'Hypos', as they are commonly known, are caused by <u>low blood glucose</u> (sugar) and can result in confusion, collapses, fitting and, in extreme cases, even sudden death.

Severe hypos can have a huge impact on the lives of people with type 1 diabetes and their families. Unpleasant symptoms and consequences of severe hypos can lead to fear of hypoglycaemia and reduce independence and spontaneity, which are both important for quality of life. Hypos also put pressure on family and friends, who need to provide assistance to help the person recover. Those who experience repeated severe hypos are often prevented from driving and can face employment difficulties.

Hypoglycaemic attacks

In the first few years after being diagnosed, people with type 1 diabetes will experience early warning signs of an impending hypo, such as sweating or shaking, which will give them time to eat or drink something



sugary before they become incapacitated. But it has long been known that people who have type 1 diabetes for more than five years can start to lose these warning symptoms, placing them at very high risk of a hypo both when awake and while asleep.

Now a multi-centre study led by Newcastle University, has found that the vast majority of people with type 1 diabetes can regain their hypo warning signs and avoid these traumatic experiences – even after many years of insulin therapy. The trial also involved expert diabetes teams at Cambridge and Sheffield Universities and in Bournemouth and Plymouth, as well as health psychologists from AHP Research and Deakin University (Australia).

In the hypioCOMPaSS study, funded by Diabetes UK and published in the journal *Diabetes Care*, 96 adults with type 1 diabetes from across the country were asked to follow simple guidelines for adjusting their insulin doses to minimise low glucose levels and took part in a brief education session to provide them with a 'hypo compass'. This provided a framework for preventing progression of mild hypos into dangerous events through a range of practical strategies remembered through the points of a compass.

The study also compared the impact of different approaches to insulin delivery (pumps versus injections) and <u>glucose monitoring</u> (continuous glucose monitoring versus conventional finger-prick testing) on the avoidance of hypos.

Before the study, those who took part had been experiencing around 10 dangerous hypos every year. However, during the six-month trial period 80% of them experienced no further attacks.

Diabetes guidance



This study has confirmed the need for access to best possible guidance and structured support for everyone with <u>type 1 diabetes</u> to enable them to achieve good control without disabling hypoglycaemia. This level of health care professional input has often been reserved for those using new technologies including insulin pumps and continuous glucose monitors, but this study shows it needs to be provided equally to all.

James Shaw, who led the study as Professor of Diabetes at Newcastle University and a Consultant at Newcastle Diabetes Centre, said: "For years people with diabetes have been told not to let their blood glucose levels get too high and now we are telling them not to get too low, so it's a complicated message. But with just a little bit of support in best management, a safe and effective balance can be achieved in the vast majority.

"These really exciting results were achieved without any worsening of overall glucose control.

"In the trial we showed that equivalent benefits could be achieved using insulin injections or an insulin pump. Similarly regular finger prick testing including some night time checks was just as effective as real time continuous glucose monitoring through a sensor placed under the skin every few days. User satisfaction was particularly high with the pump, but was more variable among those using continuous glucose monitoring. Fear of hypos reduced significantly for everyone. For many people and their families, this is life changing."

Dr Alasdair Rankin, Diabetes UK Director of Research said, "Hypo unawareness and severe hypos are among the most feared complications of diabetes. We are very pleased to have supported this work, which show that the lives of people suffering from hypo unawareness can be improved through good education and support, regardless of how people take insulin and monitor their blood glucose."



Living with diabetes

Mrs Pauline Smith, 64, has type 1 <u>diabetes</u> and it had a big impact on her life, before she took part in the trial. She lives in Cramlington, Northumberland, with her husband and has two grown up sons.

Mrs Smith said: "I was getting hypos all the time without warning. A lot of the time I didn't even realise I was having them even after they had started. But my friends and family could tell, as I was acting strangely. But I just thought I was acting normally.

"This trial was amazing for me. At first I was very wary of having a pump attached but once I got used to it, it made a huge difference. It has changed my life. I'm now able. I just feel so much happier and healthier in myself now that I have control over my <u>blood glucose</u> levels. I no longer worry that I will suffer a hypo."

More information: Stuart A. Little, et al. "Recovery of Hypoglycemia Awareness in Long-Standing Type 1 Diabetes: A Multicenter 2 × 2 Factorial Randomized Controlled Trial Comparing Insulin Pump With Multiple Daily Injections and Continuous With Conventional Glucose Self-Monitoring (HypoCOMPaSS)." *Diabetes Care* published ahead of print May 22, 2014, <u>DOI: 10.2337/dc14-0030</u> 1935-5548

Provided by Newcastle University

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