

Metabolic Experimental Medicine**Case Study****The Diamond Study Background**

Recent research shows it may be possible to treat people with type 2 diabetes with an intensive weight loss programme, known as a total diet replacement (TDR) programme. TDR provides 800 calories per day in the form of commercially produced soups, shakes and bars, but little or no 'real' food. However, these types of programme are not routinely available in the NHS, so few people are being offered them. Instead, most people with diabetes are given dietary advice by their GPs and diabetes nurses. Practitioners and patients have been asking whether or not the benefits of TDR programmes can be achieved with a low-energy (low calorie) food-based diet instead. Before we can answer that question, we needed to develop a programme to provide people with dietary advice and support, and to know if GPs and practice nurses could be trained to deliver such a programme and to support people to achieve substantial weight loss.

We did the DIAMOND 'feasibility study' to answer these questions, and to help us decide whether we could run a bigger trial to test the effect of a low energy, food-based programme on health in the longer term. It is only after a big trial that we will be able to see if this programme is a good long-term treatment for type 2 diabetes, but the first step was to see if such a trial is possible.

What we did

To help us understand what it is like to have type 2 diabetes, and what people want to find out when they see their doctor or nurse (in particular when talking about weight and diet), we set up discussion groups with people who had experience of living with diabetes, and with some people who had also tried a low-carbohydrate diet. One of our PPIE panel also joined the study team and was an active member of the trial management group throughout.

What difference did it make

In the groups people told us they wanted to know what they can and can't eat on a diet. They suggested ways to make the diet easier to follow, like showing what to look for on food labels in shops. They suggested ways to increase people's motivation to stick to the diet, by monitoring their blood glucose at home to track their progress. They helped to make sure study materials were understandable and could be used by people with different baseline dietary patterns and preferences. These contributions directly helped us to recruit over target numbers of patients into the feasibility study, ahead of schedule, and retain them all to follow up at the end of the study, with good adherence to the intervention.

The PPI representative in the study team helped us to decide what outcomes to measure and how to prioritise these. They suggested questions for our patient interviews to understand what results were important to the people who took part. He has remained involved in analysing and reporting the results, and in discussing learning points from the feasibility study and priorities for a full scale trial moving forwards.