



REVERSING TYPE 2 DIABETES

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About the All Party Parliamentary Group for Diabetes

The All-Party Parliamentary Group for Diabetes (APPG Diabetes) is a nonpartisan cross-party interest group of UK parliamentarians who have a shared interest in raising the profile of diabetes, its prevention and improving the quality of treatment and care of people living with diabetes.

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Key diabetes facts

- In the UK an estimated 4.6 million people across the UK are living with diabetes.
- An additional 1.1 million people are expected to have diabetes but undiagnosed, this is primarily Type-2 diabetes.
- Since 1996 the number of people diagnosed with diabetes has doubled, from 1.4 million to 3.8 million.
- Of those 4.5 million in the UK diagnosed with Diabetes it is expected that 10% have Type-1 diabetes and 90% have Type-2.
- When looking at genetic predisposition more than 85 per cent of Type 1 diabetes occurs in those with no previous first degree family history, the risk among first degree relatives is about 15 times higher than in the general population.
- The risk of a child developing diabetes if their mother has it is about 2–4 per cent higher than the average, if the father has it is 6–9 per cent higher and if both parents have the condition is up to 30 per cent higher than average.
- Type-2 diabetes can also be affected by genetics have a genetic pre-disposition. Those with diabetes in the family are 2-6 times more likely to develop the condition than those without history in the family.
- Diabetes is a condition which is expected to affect 1 in 10 people globally by 2040, equalling 642 million. This will put diabetes on a par with the number of people being diagnosed with cancer by 2040.
- Diabetes is a globally recognised condition. There is expected to be 1 in 2 adults across the world undiagnosed with Type-2 Diabetes. The International Diabetes Federation (IDF) has estimated that in 2015 seven countries have more than 10 million people with diabetes; China, India, USA, Russia, Indonesia, Mexico and Brazil.

Reports published by the APPG for Diabetes

- Diabetes and Podiatry (2018)
- Emotional and Psychological Support for people with Diabetes (2018)
- Next Steps for Childhood Obesity Plan (2018)
- The Future of Inpatient Diabetes Care (2017)
- Safety and Inclusion of Children with Medical Conditions at School (2017)
- Industry Action on Obesity and Type 2 Diabetes (2017)
- Levelling up: Tackling Variation in Diabetes Care (2016)
- Taking Control: Supporting People to Self-Manage their Diabetes (2015)

Reversing Type 2 diabetes

A session of the All-Party Parliamentary Group for Diabetes took place on the 27th June 2018 on reversing type 2 diabetes to discuss how bariatric surgery or weight management treatments, low calorie diets and low carbohydrate diets among others can help lead to remission, reversal or reduced medication.

Key witnesses were;

- **Professor Roy Taylor**, *Professor of Medicine and Metabolism, Newcastle University and Newcastle Hospitals NHS Trust*
- **Dr David Unwin**, *General Practitioner, Royal College of General Practitioners*
- **Mark Hancock**, *Patient voice with type 2 diabetes*
- **Dr Campbell Murdoch**, *General Practitioner, Public Health England*
- **Richard Welbourn**, *Consultant Bariatric Surgeon, Taunton and Somerset NHS Foundation Trust*

Invited contributions by:

- **Catherine Cassell**, *Practice nurse with a special interest in diabetes*
- **Geoff Whittington**, *Fixing Dad*

Professor Roy Taylor, Professor of Medicine and Metabolism, Newcastle University and Newcastle Hospitals NHS Trust

“Type 2 diabetes has long been regarded as irreversible, steadily progressive and lifelong. Not anymore!” – Professor Roy Taylor

To be able to deal with a disease effectively, it is vital to know the enemy. What causes type 2 diabetes, that lifelong and progressive condition? Roy Taylor carried out extensive research to find out the cause of diabetes researching fat cells, muscle cells and eventually liver cells. In 2006, these ideas all came together. To test this 2006 theory, a new weight loss approach was designed. A 600 calorie per day approach using packets of a liquid formula diet and using new magnetic resonance technology, they could measure the amount of fat inside the liver and pancreas. In 2011, it was published that type 2 was reversible to normal by decreasing fat inside liver and pancreas.

Could this be done in Primary Care, where type 2 diabetes is managed? The Diabetes Remission Clinical Trial (DiRECT) was designed to find out. The intervention was merely 8 hours of training for the practice nurse (or dietitian) on how to use a low calorie liquid diet through weight loss and weight management phases. Remarkably, after 12 months, almost half of the group had become non-diabetic and off all tablets. 46% achieved remission of diabetes. For those losing 15kg or more, 9/10 people achieved remission of diabetes. This could save lives, and millions of pounds of NHS expenditure.

Recommendation 1: *Regulate the activities of food manufacturers and ensure clear and simple labelling of calorie content and guideline portion size.*

Dr David Unwin, General Practitioner, Royal College of General Practitioners

“Type 2 remission is aspirational and attainable. It’s about patient choice and Health Care Practitioner education. We can save lives and save money!” – Dr David Unwin

Type 2 diabetes is a state of ‘carbohydrate intolerance’ where people struggle to metabolise, not just glucose, but also the carbohydrates that digest down into glucose. In this context, it makes sense to cut back on both sugar and refined carbohydrates. This can be done in several ways: bariatric surgery, very low calorie diet or lower carbohydrate diet. There is evidence that the three approaches can lead to a medication-free remission of type 2 diabetes. A concept which gives hope to many people and the possibility of significant savings.

Dr Unwin presented cases of 107 patients with type 2 diabetes who were helped by a lower carbohydrate diet. Over an average of 21.6 months there was a 47% rate of type 2 diabetes remission and significant improvements in weight, liver function, lipids and blood pressure. Reversing type 2 diabetes is challenging, but possible. A low-carbohydrate diet for example requires less insulin to be produced, taking the strain of insulin-producing cells and reducing insulin resistance. The diet has been shown to improve blood glucose control and HbA1c levels.

Recommendation 2: *Healthcare professionals should encourage type 2 diabetes patients to adopt diet and non-medication based approaches to treat their condition which will lead to significant savings for the NHS.*

Mark Hancock, Patient voice with Type 2 diabetes

Mark Hancock was diagnosed with type 2 diabetes 8 years ago, he was fearful of what the future with diabetes would hold. He, like many others, trusted that following the ‘eat well plate’ would keep his condition stable. Despite adherence to this guidance, he was told that his condition would likely worsen so medication would have to increase.

Mark heard about Michael Mosley’s 8 week blood sugar diet avoiding sugar, starchy carbohydrates and processed foods and decided to try it. Over the 8 weeks, he lost 1.5 stone and gained higher energy levels. By following this low carbohydrate diet, Mark soon managed to put his diabetes into remission which then led to closing his medication.

Recommendation 3: *More information must be provided to patients on diagnosis and in programmes such as DESMOND, more funding and research is needed.*

Dr Campbell Murdoch, General Practitioner, Public Health England

"In the UK, no one with type 2 diabetes should be told they have a progressive disease. Policies cannot treat it as such anymore. We need a reformulation." - Dr Campbell Murdoch

Type 2 diabetes is a 'reversible' condition, and for at least 50% of people it can be placed into remission. The costs and morbidity related to the diabetes epidemic are crippling the healthcare system. Addressing this need, with an aim of reversal or remission, must be provided at scale and be low cost. Technology has an important role to play with this, providing knowledge and support to people. The UK based organisation Diabetes.co.uk is delivering a global type 2 diabetes remission programme, achieving a 25% remission rate. The question is no longer 'How are we going to solve the type 2 diabetes epidemic?' it is now 'How fast will we solve it?'

Recommendation 4: *Urgent assessment should be made of the financial and productivity gains that type 2 diabetes reversal/remission at scale would achieve.*

Richard Welbourn, Consultant Bariatric Surgeon, Taunton and Somerset NHS Foundation Trust

"The evidence shows that not offering bariatric surgery would be letting patients down and costing our NHS more" – Richard Welbourn

High quality evidence from 11 randomized controlled trials shows that remission rates (meaning normal blood sugar and off all anti-diabetic medications) for type 2 diabetes is better after surgery than with dieting and lifestyle interventions. With surgery, remission is long lasting, quality of life and physical ability improve, patients live longer, and the risk of developing cancer is lower. Surgery is also highly cost effective since many patients do not need anti-diabetic medications afterwards, therefore recouping costs within 3-4 years.

Data from the UK National Bariatric Surgery Registry of patients with a body mass index (BMI) of nearly 50 (twice the weight they should be for their height) indicate 2-year remission rates of 50% for those on insulin and 80% for those not yet needing insulin. To cope with the rising costs and disability of patients with diabetes, there needs to be major investment by Clinical Commissioning Groups into secondary care Weight Assessment and Management Clinics, including providing services for children and young people which are almost completely lacking. Only 5,000 bariatric operations are

done in England, very few in Scotland and Wales and none in Northern Ireland. CCGs need to invest heavily to increase this to 50,000 a year to match the rates of surgery in equivalent European countries.

Recommendation 5: *The establishment of medical Weight Management and Assessment Clinics in every hospital – currently only 50% have these – to provide specialist care for patients with severe and complex obesity.*

Catherine Cassell, Practice nurse with a special interest in diabetes

“My patients tell me I have given them hope!” – Catherine Cassell

It is possible to give patients hope that they can have the opportunity to put type 2 diabetes into remission with support and lifestyle advice.

A huge amount of support is required when making long term changes especially when patients are taking medications/insulin that can cause risks of hypoglycaemia and need advice around reducing and coming off those medications/insulin. GP practices are only funded for patients to be seen for an annual check.

Recommendation 6: *Adequate training and resources for practice nurses to be able to give dietary advice. More funding in GP practices for doctors and nurses to be able to see patients more frequently to support patients with lifestyle changes.*

Geoff Whittington, Fixing Dad

It is necessary to know the seriousness of our condition but be aware that reversal can be achieved. Fixing health can improve almost every aspect of our lives. Fixing is a journey, not a destination - it is in striving to be fixed, in our journey toward reversal that we find the most inspiring success.

The documentary ‘Fixing Dad’ is the story of Geoff whose lifestyle choices caught up with him and he shares the amazing experience about his extraordinary battle with type 2 diabetes and how his two sons helped reverse it. In over a year, Geoff was transformed from being obese and barely mobile to a fighting fit endurance cyclist, public speaker and health activist. *“We want people with Type 2 diabetes to have hope”*

Recommendation 7: *Government to act when it comes to language use, altering the language around type 2 diabetes from a passive "management" of the condition to an active "reversal".*