

## Diabetes UK Professional Conference 2015

11–13 March 2015, London ExCeL Centre, UK

### Dorothy Hodgkin Lecture: Islet biology

Peter Jones, King's College London, London, was awarded the Dorothy Hodgkin Lecture and presented to the audience the key features of the islet of Langerhans, the endocrine hormone-producing cells in the pancreas, highlighting why it is important to understand their biology for diabetes care.

Prof Jones shared some of his group's research into kisspeptin, a ligand known to play a crucial role in mammalian puberty and reproduction, which has been found to be produced in the islets of the pancreas. It has been previously shown that kisspeptin potentiates glucose-induced insulin release from isolated islets, and thus research into whether increasing kisspeptin levels could be a therapeutic tool for type 2 diabetes is taking place.

Understanding the peculiar structure of the islets may also provide much-needed information on the most effective and efficient way to perform islet transplants for people with type 1 diabetes.



### Debate: It's time to propose further reductions in sugar intake

In one of the Wednesday afternoon break-out sessions, a lively and thought-provoking debate took place on whether it was time to propose further reductions in sugar intake, similar to the reductions placed on salt content in recent years.

In the "yes" camp was Graham MacGregor, Queen Mary University of London, London, who argued that voluntary, incremental reformulation was the right next step to lower sugar content, which was successfully used for salt reduction. With continuous media exposure, and other actions such as tax on sugar-sweetened beverages, reduced portion sizes and nutritional regulation returning to an independent body, Prof MacGregor argued

that sugar reduction could become a reality.

In the opposing corner was Mike Lean, Glasgow University, Glasgow. He expressed his concern over a blanket sugar reduction as there was no distinguishing between sucrose and fibre sugars. Dr Lean referred to research that did not show a relationship between sugar intake and weight gain; in fact, it was the pattern of eating that caused weight gain. He expressed the belief that the public should be educated on balanced healthy eating, rather than being told to avoid a whole food group. In addition he said that a <5% daily sugar intake, as proposed by Prof MacGregor, would be extremely hard to follow.

### Modulating gut hormones and genetic variation: Rank Nutrition Lecture

Awarded the Rank Nutrition Lecture in honour of Harry Keen, Rachel Batterham, University College London, London, posed the question, is modulating gut hormones to treat obesity and type 2 diabetes fact or fantasy?

The answer to that question was fact. Glucagon-like peptide 1 receptor agonists and dipeptidyl peptidase-4 inhibitors both act on the incretin system to lower blood glucose and are already in use in the UK. Furthermore, amylin injectable analogues are in use in the USA.

Hormone pathways in the brain responsible for satiety, hunger, emotion and palatability (to name but a few) could be the targets for drugs of the future.

Latest research on the relationship

between peptide YY and ghrelin (the "hunger hormone") was presented. Ghrelin stimulates eating, and the enzyme is activated by ghrelin O-acyltransferase (GOAT). GOAT is of pharmacological interest because its only chemical role is in ghrelin activation, thus developing a GOAT inhibitor could reduce hunger and food intake.

Maintaining weight loss can be more difficult than the initial weight loss itself; however, hunger hormone levels have been shown to return to baseline after 1 year of dieting, so hunger can not always be the reason for regaining weight. Genetic difference and energy deficiency may be where the issue lies; therefore, ensuring that more energy is lost than gained is key to weight loss.

## Type 1 diabetes vaccine?

A vaccine for type 1 diabetes could be developed “within a generation”, say scientists who announced over £4.4 million of new investment for research that will help make a vaccine a reality. The research, which was launched at the conference, is being funded by Diabetes UK with support from Tesco (over £3.3 million) and co-funding from JDRF (over £1 million).

The first working vaccines could be produced within the next 10 years, and, as well as helping to delay or even prevent type 1 diabetes in those at high risk, this will also be an important step towards a cure for the condition. It’s likely that the vaccine will also work in harmony with other treatments



that reduce damage to insulin-producing cells in the pancreas caused by the immune system.

## “New approach needed” for safer care for inpatients with diabetes

According to the UK’s leading specialist in diabetes inpatient care, Dr Gerry Rayman, Head of Service at the Diabetes Centre, Ipswich Hospital NHS Trust, lead for the National Diabetes Inpatient Audit and specialist medical advisor to Diabetes UK, the NHS must take immediate action to raise standards of care in hospitals for people with diabetes.

Dr Rayman has advised that a new approach is needed to tackle the poor care that people with diabetes often receive in hospital (they account for about one in six of all inpatients) and to address the almost 8–10% higher mortality rate among inpatients with diabetes.

Leading discussions on inpatient care at the conference, Dr Rayman said that hospital management teams and diabetes specialist teams must work together to implement hospital-wide safety practices. This approach, which is already taken by hospital management teams and specialist

teams for conditions including stroke, prevention of venous-thromboembolic disease and hospital infection, would ensure much safer care for people with diabetes when they are admitted to hospital, reduce the length of their hospital stays, and bring about considerable financial savings.

There has been some improvements in care over the last few years but there is still a long way to go. Currently, one in five people with diabetes in hospital experiences their blood glucose levels falling dangerously low, 37% experience medication errors, and cases of diabetic ketoacidosis, an entirely preventable life-threatening condition, have not reduced.

This in turn leads to longer hospital stays, further illness, greater financial expenditure on services, and ultimately contributes to the higher mortality rate among inpatients with diabetes. Dr Rayman finished by explaining that this approach to improved inpatient care must be adopted.

## Launch of national Diabetes Prevention Drive

The first ever at-scale National NHS Diabetes Prevention Programme was launched by the NHS and Public Health in England at this year’s Diabetes UK conference.

Simon Stevens, NHS England’s Chief Executive, announced that the programme, which is a joint initiative with Diabetes UK, aims to significantly reduce the 4 million people in England otherwise expected to have type 2 diabetes by 2025.

The new programme will initially target up to 10 000 people at a high risk of developing type 2 diabetes at seven sites around the country. The centres (Birmingham South and Central CCG, Bradford City CCG, Durham County Council, Herefordshire CCG/LA, Medway CCG/LA, Salford CCG/LA, Southwark & Lambeth Councils and Southwark CCG) will monitor and test local programmes of their own, as well as helping to co-design and implement the national programme.

Their local schemes include drives on weight loss, physical activity, cooking and nutrition, peer support and more support from trained professionals. In particular, in Bradford, they have a programme to target everyone who is South Asian and aged 25 and above.