

# Diabetes news

## Long-term glycaemic outcome of structured nurse-led diabetes care in rural Africa

Researchers from the UK, South Africa, and Australia followed a structured nurse-led intervention programme for type 2 diabetes patients in scattered primary health clinics in northern Kwazulu Natal, South Africa.

Monthly diabetic clinics were held at which empowerment-based education was delivered and regularly enforced. Oral hypoglycaemic agents were titrated according to a previously validated clinical algorithm; outcome was measured by HbA<sub>1c</sub> as well as BMI.

At 4 years of follow-up the patients still had a mean HbA<sub>1c</sub> significantly better than baseline. The programme of care had been warmly and positively received by both staff and patients. The authors believe this is an appropriate and effective diabetes intervention system in rural Africa.

## Study finds clue to birth defects in babies of mothers with diabetes

In a paper published in *Diabetologia*, a team at the US Joslin Diabetes Center has identified the enzyme AMP kinase (AMPK) as key to the molecular mechanism that significantly increases the risk of neural tube defects such as spina bifida and some heart defects among babies born to women with diabetes.

Even if women with diabetes either type 1 or type 2 work vigilantly to control their blood sugar levels around the time of conception, the risk of a defect is still twice that of the general population, say the scientists. This finding could lead to strategies to interfere with the mechanism and reduce the chances of such birth defects occurring.

## New research could offer future diabetes pill

Scientists in the US are researching a naturally occurring cell chemical that it is hoped could help develop new treatments for preventing or reversing type 2 diabetes.

The researchers, from Washington University School of Medicine in St Louis, are investigating the compound nicotinamide mononucleotide (NMN), which has a key role in how cells use energy. They showed how to normalise levels of blood sugar in diabetic mice through an injection with NMN, while also reducing levels of cholesterol and triglyceride blood fats.

The scientists were able to trigger the metabolic condition in the mice by providing them with a high-fat diet. All the mice experienced lower levels of NAD, a molecule that takes energy from nutrients and turns it into a usable energy. For mice and humans, NAD derives from NMN produced by cells through a chain reaction. When mice were injected with NMN, they displayed a dramatically improved response to glucose.

The study is now assessing how to give NMN to the laboratory mice in their drinking water, and hope to produce a type of nutraceutical pill in the future that could be taken in the same way as a vitamin pill for treating type 2 diabetes.

## Glucose monitoring in type 1 diabetes

A meta-analysis of randomised controlled trials, published in the *BMJ*, has confirmed that continuous glucose monitoring, rather than self-monitoring, is most effective for patients with poor glycaemic control. It results in lower HbA<sub>1c</sub> values and less risk of hypoglycaemia. Six trials (892 patients with type 1 diabetes) were included in the meta-analysis.

## Don't forget to take your frog slime

Frog slime could become a new treatment for type 2 diabetes. But not from just any frog: a secretion from the skin of a South American paradoxical frog called pseudin-2 that helps the small amphibians to protect themselves against infection.

Dr Yasser Abdel-Wahab, from the University of Ulster, and his team have found that the slime of this frog can stimulate the release of insulin.

## The buckwheat cure

Buckwheat may be useful in the management of type 2 diabetes and is the subject of a new trial. The active ingredient in buckwheat, a compound called chiro-inositol, is believed to make the body's cells more sensitive to insulin.

Buckwheat is being given to people with type 2 diabetes in a trial at Manitoba University, Canada, following studies that suggest it can lower blood glucose levels in animals by up to 19%.

## Extreme dieting can reverse diabetes

A study published in *Diabetologia* found an extreme 8-week diet of 600 calories per day can reverse type 2 diabetes in people recently diagnosed with the condition.

The research came from a group at the UK's Newcastle University who found that this low-calorie diet reduced fat levels in the pancreas and liver, which helped insulin production return to normal. The diet comprised only liquid diet drinks and non-starchy vegetables.

Of the 11 people who participated in the study, 7 were free of diabetes 3 months later. All had been diagnosed within the previous 4 years.

## Launch of the new IDF Diabetes Atlas

World Diabetes Day on 14th November sees the launch of the 5th edition of the *Diabetes Atlas*, sometimes referred to as the 'jewel in the crown' of the International Diabetes Federation.

New diabetes hotspots are growing throughout Asia, the Middle East, and Africa, according to the *Atlas*. This, says Jean Claude Mbanya, IDF President, is 'largely due to the noxious effects of the globalised economy, including rampant urbanisation and the nutritional transition from healthy traditional diets towards fatty, salty, sugary processed products.' The disease, he says, 'continues to affect disproportionately the socially disadvantaged.'

## Garlic could benefit diabetes management

A new study has found that consuming garlic could help reduce levels of blood glucose in people suffering from type 2 diabetes, as well as offering other benefits in the treatment of the metabolic condition. The research recommends using garlic for reducing blood glucose levels only under medical guidance, and generally in conjunction with, rather than instead of, more orthodox medications.

It is known that garlic contains more than 400 chemical components, many of which can help prevent and treat a diverse range of health problems, but it is compounds including allicin, allyl propyl disulfide and S-allyl cysteine sulfoxide that raise insulin levels in the blood through the prevention of the liver's inactivation of insulin, so that more insulin is available in the body.