

Race towards an insulin pill

An insulin pill could be available by the end of this decade.

The companies at the forefront are Novo Nordisk, the world's largest seller of insulin products and Oramed Pharmaceuticals headquartered in Jerusalem.

'We've built technologies and we've seen from studies in animals and early human trials that this may not be as impossible as decades of research had indicated previously,' said Peter Kurtzhals, Novo's head of diabetes research.

If all goes well, Novo believes its oral insulin could be available by the end of this decade or early next decade.

Oramed's programme is ahead of Novo's. It has begun enrolling patients in Phase II, or midstage, clinical trials, while Novo has yet to begin Phase II testing.

There is still a long way to go for Nova or Oramed to receive regulatory approval. The companies must prove the worth of their oral preparations with large clinical trials and demonstrate no heart problems or other major side-effects.

A new dawn for inhalable insulin?

Few treatments for type 1 diabetes have been as elusive and long-promised as inhalable insulin.

Exubera, a brand of inhalable insulin made by Pfizer, was briefly on sale in 2006 and 2007, before being withdrawn. The MannKind Corporation is currently working with a new type of inhalable insulin, called Afrezza.

According to the company, the insulin works especially quickly. Peak levels 'are achieved within 12 to 14 minutes of administration, effectively mimicking the release of meal-time insulin observed in healthy individuals, but which is absent in patients with diabetes.'

But no inhalable insulin can work on its own, which is why MannKind has also developed a next-generation insulin inhaler that they call the Dreamboat. The combination of insulin and inhaler has just been tested in a phase three clinical study. And the news was good – patients showed A_{1c} decreases, reductions in hypoglycemia, and lower fasting blood sugar levels.

The results are still early, and work remains to be done before bringing the treatment to market.

Keep the salt down

Increasing evidence suggests that a high salt intake may directly increase the risk of heart disease, stroke, obesity through soft drink consumption, and many other preventable diseases, including cancers.

The World Health Organization recommends that healthy adults limit daily salt consumption to 2000 mg/day. Included in the high-risk population are people over the age of 40, people already diagnosed with high blood pressure, people living with diabetes, and people of black African descent.

Diabetes Africa Foot Initiative

A project led by the International Diabetes Federation and its Africa Region – Diabetes Africa Foot Initiative – is well underway.

Specialist training of healthcare professionals is on course to help people with diabetes in 10 African countries avoid the trauma of diabetic foot and the risk of lower limb amputation. Thirty physicians and nurses attended foot screening and care training at the University of Johannesburg.

Back in their centres in Cameroon, Ghana, Guinea, Kenya, Madagascar, Republic of Congo, Rwanda, Senegal, Tanzania, and Uganda the trained health professionals will use a specially developed risk stratification and intervention tool to tackle the high rate of foot complications in the countries.

At the same time, a suite of materials has been developed to raise awareness among people with diabetes living in the 10 selected countries about the need to care for their feet to prevent complications or existing foot problems worsening.

Protein rich breakfast improves glycemic control

A higher calorie breakfast consisting of protein and fat has a healthier impact on patients with type 2 diabetes.

In a randomised controlled trial, eligible participants were overweight/obese and had been diagnosed with type 2 diabetes. Participants were randomised into either a small breakfast or big breakfast group. Those in the big breakfast group ate more foods high in protein and fat. A lipid panel, fasting adipokines, hormones, and inflammatory markers were all measured and obtained at baseline and at week 13 of the study.

A total of 47 participants completed the study and at the end of follow-up, greater improvements were made in HbA_{1c} levels and systolic blood pressure decreased more in participants from the big breakfast group. In addition, in the big breakfast group more doses of medications for diabetes were decreased, while in the small breakfast group, participants needed more increased doses of their medications. Furthermore, those in the big breakfast group displayed less hunger and had better fasting glucose levels when compared with those in the small breakfast group.

In conclusion, a bigger breakfast, rich in protein and fat, is shown to be more beneficial in individuals with type 2 diabetes than a smaller breakfast low on calories.

Diabetes at high altitudes

Many factors can affect blood sugar control at high altitudes, and people considering a mountain journey need to understand the potential risks of the environmental extremes, extensive exercise, and dietary changes they may experience. Insulin needs may increase or decrease and individuals with poorly controlled diabetes are especially at risk for hypothermia, frostbite, and dehydration, for example. These and other dangers are described by two doctors who have diabetes and are avid mountaineers in an article published in *High Altitude Medicine & Biology*.

IDF World Diabetes Conference

The International Diabetes Federation's World Diabetes Congress will take place in Melbourne, Australia on the 2nd to 6th December. There will be 400 expert speakers and 275 hours of scientific sessions. New Programme Streams are 'Diabetes in indigenous peoples' and 'Diabetes research in the 20th century'.

