

Cuttings from the media

MEDIA LITE

“Mini-stomachs” engineered to replace beta-cells and produce insulin

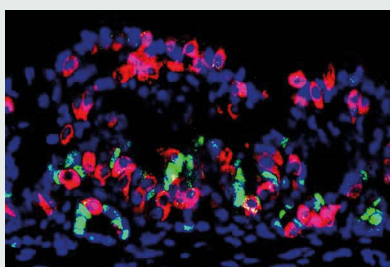
A research group at Harvard University has developed a potential new way to replace the beta-cells lost in type 1 diabetes, by reprogramming stomach tissue to grow into mini-organs that, when transplanted back into mice, function as insulin-producing cells.

Senior author Qiao Zhou and colleagues identified cells (shown in red in the image below) in the pylorus region of the lower stomach which appeared to be most amenable to conversion to beta-cells and were most responsive to high blood glucose, generating insulin to stabilise levels.

In a group of mice with their native beta-cells knocked out, reprogramming of the stomach tissue led to a survival time of 6 months, while mice that were not genetically altered died within 8 weeks.

The authors then engineered the tissue to grow into a mini-stomach. Transplanting these organs back into the mice they came from restored insulin secretion and normal blood-glucose levels in five of 22 mice. While that may seem like a low success rate, it was in line with expectations, and the results could pave the way for new therapies in the future.

Forbes
22 February 2016



Just one extra hour of sitting down may increase diabetes risk by a fifth

A study from the Netherlands suggests that each additional hour spent sitting or lying down increases the risk of type 2 diabetes by 22%.

In a cross-sectional study, the authors tracked 2497 people aged 40–75 years, 29% of whom had type 2 diabetes, using accelerometers worn for eight consecutive days. They found that, on average, people with type 2 diabetes spent 26 minutes longer per day sitting or lying down compared to those without diabetes. The numbers of sedentary breaks and the duration of sedentary episodes made little difference after adjustment for confounding factors.

Although causality cannot be inferred from a cross-sectional study, this is an important reminder that physical inactivity can be bad for our health.

The Telegraph
2 February 2016

Type 1 diabetes more aggressive if it develops in under-7s

A study from the University of Exeter has shown that, while children diagnosed with type 1 diabetes aged below 7 years are left with very few insulin-producing beta-cells in their pancreas at diagnosis, those who are diagnosed in their teens retain large numbers of these cells.

This suggests that different treatment strategies – for example, replacing lost beta-cells or halting the decline or improving the function of those that are still present – may need to be targeted at different patient groups.

Daily Mail
8 February 2016

Statins double the risk of type 2 diabetes

A 10-year study has shown that statins almost double the risk of new-onset diabetes. Among nearly 26 000 people with no prior sign of cardiovascular disease or diabetes, of whom 4000 received statins the odds ratio was 1.87 for new-onset diabetes and 2.50 for diabetes with complications, including eye, nerve and kidney damage.

Professor Ishak Mansi, who led the study, said that he was concerned about the long-term effects on the huge population of healthy people on statins who continue for many years, and that the short-term clinical studies were unlikely to give a full picture of the risk–benefit profile.

Daily Mail
31 January 2016

Chancellor announces sugar tax from 2018

In a surprise move, the Chancellor has announced a levy on high-sugar drinks, which will come into effect in 2018. It will be imposed on companies according to the volume of the sugar-sweetened drinks they produce or import.

There will be two bands: one for total sugar content above 5 g per 100 mL and a second, higher band for those with more than 8 g per 100 mL. Pure fruit juices and milk-based drinks will be excluded.

The announcement was welcomed by campaigners, although some critics have stated that the tax could unfairly target people with type 1 diabetes, who may face higher prices on drinks used to treat hypoglycaemia.

BBC News
16 March 2016