BCG injection could offer fresh hope for diabetics

A standard jab given to thousands of British children has the potential to become a treatment for type 1 diabetes.

The generic BCG vaccine briefly allowed three patients to begin producing insulin again after more than a decade with the condition, which was previously thought to be irreversible, a preliminary study found.

“These are not people throwing their syringes away — the increase is tiny — but it’s the proof of concept that we can kill the bad T-cells in a targeted way,” said Denise Faustman, of Harvard Medical School, who led the research. “If we can take people 15 to 20 years out and stabilise them, it could have substantial long-term effects.”
Type 1 is caused by a faulty immune response which kills insulin-producing cells in the pancreas. About 400,000 people in Britain have type 1 diabetes. In 2001, Dr Faustman’s team showed that high levels of the protein TNF could reverse diabetes in mice and allow the pancreas to regenerate. Many researchers believe that it is impossible for the pancreas to repair itself, but the latest research, published in the journal PLoS One, suggests it is possible in principle.

Because TNF is toxic to humans, the researchers used BCG vaccine, which has been used against tuberculosis for 90 years and is known to boost levels of TNF. Dr Faustman’s team studied six patients who had been diabetic for an average of 15 years. Half the patients were given BCG jabs and the others a placebo. In those given the BCG, defective T-cells were killed and insulin levels appeared to rise slightly. Dr Faustman is now testing if higher and more frequent doses could restore insulin production over the long term.

Iain Frame, Director of Research for Diabetes UK, said: “Any new research that may lead to the prevention of type 1 diabetes should be welcomed, but further work is needed.”

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**EnglishRose**
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I recently paid private for my sons (not diabetics) to have the BCG at 13 as their older siblings had had via the then usual NHS 13+ BCG injection programme (TB). Apparently although NHS direct website says TB is on the rise, the state has decided in the last few years not to give this injection to all teenagers in the UK. I wanted to ensure my sons were protected in the way their siblings are but by 13 as they are likely to be all over the place in due course on gap years and university holidays and we live in one of the most mixed boroughs in London with people from all over the place including TB areas.

I still find it puzzling the Government has given up the mass BCG injection programme it had 10 years ago for teenagers.

(Cost me about £280 too and the children have certainly not thanked me for it)
My daughter was 3 when she was diagnosed with type 1 diabetes. At that time BCG was not offered in our area as a routine vaccination so after reading research that altering the cytokine (immune) pathway with vaccination could help this disease we had her vaccinated privately in London. I made sure that my son was vaccinated at birth as I feared he may also develop Type 1 Diabetes.

It is debatable whether we should be offering BCG to all infants at birth? The medical community would not encourage it unless there is solid evidence from randomised controlled trials to prove that it is effective.

However, for a family living with the disease - any chance of improvement, or indeed the medical Holy Grail - a cure is one to be seized. If the BCG vaccination was to be offered routinely on the NHS it would be interesting to see if there is a subsequent decline in new cases of Type 1 diabetes, Juvenile Arthritis and Multiple Sclerosis - all immune mediated diseases.

What is clearly evident is that research that supports the hypothesis that Type 1 diabetes is reversible - something which I have always believed - offers hope to all families with loved ones affected with autoimmune diseases.