

Insulin microcapsule may replace needle jab

28 April 2016, by Rueben Hale, Sciencenetwork Wa



Researchers investigating the microcapsule technology at Curtin's biomedical labs. Credit: Curtin University.

West Australian diabetics who need to inject insulin to maintain their lifestyle may soon be free of the regular needle jab—and the constant annoying questions that go with it.

This is thanks to cutting-edge microcapsule technology developed by Curtin University, which means more than 10 per cent of all of WA's diabetic patients can start taking insulin orally.

Many type 1 diabetics live problematic lives due to their illness and having to carry around injection and blood monitoring equipment with them every day.

Not to mention they may be facing a sometimes embarrassing situation of having to inject insulin at inconvenient times and inconvenient places.

Daily insulin injections also open the sufferer to other health issues such as [insulin resistance](#), hypoglycemia (low blood sugar level) and hyperglycemia (high [blood sugar level](#)).

The new treatment could offer new hope to sufferers because it would offer a management

regime that delivers insulin to the body in a similar way a non-diabetic's pancreas does.

Curtin's Dr Hani Al-Salami and his team, in partnership with UWA, is leading the collaborative project to design and test whether microcapsules are a viable alternative treatment for people with type 1 diabetes.

"The microcapsule contains pancreatic cells which can be implanted in the body and deliver insulin to the blood stream," Dr Al-Salami says

"If the new treatment gets to human trials it is anticipated to be the first time type 1 diabetes management has tried this new insulin-delivery system, since 1923," he says.

"The capsule has been successfully trialed in a simulated human body for long periods and the capsule has shown not only to be able to keep the cells alive, but also support the cells' survival and ameliorate inflammation," Dr Al-Salami says.

Inserting [insulin](#) producing beta cells to the body, long-term, has consistently failed over several decades of trials, he says.

"It was by chance that he and his team discovered that by adding naturally occurring bile acid components to the capsule it not only supports cell survival within the capsule, but also reduces inflammation," he says.

This article first appeared on [ScienceNetwork Western Australia](#) a science news website based at Scitech.

Provided by Science Network WA

APA citation: Insulin microcapsule may replace needle jab (2016, April 28) retrieved 4 July 2022 from <https://medicalxpress.com/news/2016-04-insulin-microcapsule-needle-jab.html>

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