

## Researchers use artificial beta cells for treating diabetes

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A group of researchers from the University of North Carolina have now developed a much more patient-friendly option for treating diabetes- artificial cells that automatically release insulin into the bloodstream when glucose levels rise.

These artificial beta cells (A $\beta$ Cs) mimic the functions of the body's natural glucose-controllers, the insulin-secreting beta cells of the pancreas.

These cells contain specially designed, insulin-stuffed vesicles. A rise in blood glucose levels leads to chemical changes in the vesicle coating, causing the vesicles to start fusing with the A $\beta$ C's outer membrane, thus releasing the insulin payloads.

The A $\beta$ Cs could be subcutaneously inserted into patients, which would be replaced every few days, or by a painless and disposable skin patch.

The group further plans to optimize and test these synthetic cells in larger animals, develop a skin patch delivery system for them, and ultimately test them in people with diabetes.

The cell-free skin patch, a senses blood glucose levels and secretes insulin into the bloodstream as needed.