New gene therapy through the skin can help treat diabetes and obesity

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Researchers from the University of Chicago used CRISPR therapy to correct skin stem cells from newborn mice, making glucagon-like peptide 1 cells (GLP1) secreted.

GLP1 is a hormone that stimulates the pancreas to secrete insulin and regulate blood sugar.

Cells when implanted in mice show that transplants from the transplants increase insulin secretion and reverse the weight gain from a high-fat diet, as well as reverse insulin resistance.

Xiaoyang Wu, an assistant at the University of Chicago, said: " *We have solved some technical barriers and designed a mouse skin transplant model with an intact immune system.* "

"We think this method has the potential to lead to finding a safe and persistent gene therapy in mice and we hope, someday, in humans, to use the cells," Wu said. *Selected cells can be modified and treated directly from the skin ".*

Furthermore, the researchers also inserted a mutation, created to prolong the hormone's elimination time in the blood stream, and to incorporate the transformed gene into an antibody fragment to save GLP-1. communication in the blood stream longer.

They also attached an induction promoter, allowing them to be able to activate the gene to produce more GLP1, by exposing it to doxycycline antibiotics, the researchers said in a journal article. Cell Stem Cell.

When mice are fed a small amount of doxycycline, they release GLP1 into the bloodstream, increasing insulin levels and reducing blood sugar levels.

When high-fat diets combined with doxycycline, rats released GLP1 and would cause less weight gain, suggesting "gene therapy from the skin secreting GLP1 could be a practical therapy".

Wu said: *"We think this can be a long-term safe option for treating many diseases and it can be used to provide therapeutic proteins, replacing the missing proteins for these. people with genetic defects like hemophilia or it can act as therapy to eliminate many different toxins "* .