

# Obesity 'switch' in the brain discovered

By Henry Bodkin

SCIENTISTS have discovered the precise brain mechanism that causes the body to hold onto fat, raising hopes of a cure for obesity.

For the first time, lab trials have explained how the brain's ability to sense insulin in the body, levels of which are raised after a meal, is coordinated with expending or conserving energy.

Researchers at Monash University in Australia have described the findings as "very exciting", and said they highlighted targets for potential fat-inhibiting medicines for people who cannot help putting on weight.

Fat in the human body is stored in specialised cells called adipocytes, which can change from white, when in storage mode, to brown, when expending energy, and back again.

In healthy people, the mechanism responds to high levels of insulin in the blood by "browning" the fat, and to low levels, such as after a fast, by keeping the fat white. For obese people, the

"switch" stays on all the time, the researchers said.

"What our studies have shown is that there is a fundamental mechanism at play that normally ensures that energy expenditure is matched with energy intake," said Dr Garron Dodd, first author on the study, which is published in *Cell Metabolism*. "When this is defective, you put on more weight. Potentially we may be able to rewire this mechanism to promote energy expenditure and weight loss in obese individuals."

Previous investigations by the researchers that showed how the brain coordinates white adipose tissue browning attracted considerable attention after it was published in early 2015.

"For a long time, the missing piece to the puzzle was always why this occurs in the body," said Dr Gordon.

"We've shown not only why this occurs but also the fundamental mechanism involved. It's very exciting."

The researchers warned that safe therapies were a "long way off".

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