

Obesity linked to brain cell 'antenna,' opening potential treatment pathway

The key to controlling hunger and fighting obesity is in brain cells that produce hormones, according to research.

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Scientists showed that antenna-like structures on brain cells, called primary cilia, control appetite, which offers potential new options to treat obesity now that researchers know exactly which neurons to target.

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Studies on humans and mice found mutations in genes linked to the chemical [leptin] can't detect when their body has already got plenty of fat – and constantly eat as if they were starving.

Now Dr [Christian] Vaisse and colleagues have discovered how mutations in the gene MC4R – located in part of the hypothalamus called the arcuate nucleus – and cilia defects drive obesity.

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Dr Vaisse said: 'It's exciting how much progress this field has made. 'In the '90s we were asking whether or not obesity is genetic; a decade ago we were discovering that most obesity risk factors primarily impact the leptin circuit in the brain; and now we are on the verge of understanding how defects in this specific subcellular structure of a particular subset of hypothalamic neurons drives weight gain and obesity.'

He said it raises the possibility of developing treatments that could improve appetite control in people with obesity by modifying signaling at the primary cilia of MC4R-expressing neurons.

[Editor's note: Read the [full study](#) (behind paywall)]

Read full, original post: [The obesity battle begins in the brain: Faulty mental 'antenna' may make some overeat, study finds](#)