

Why we could all do with a siesta

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The Spaniards may have been right all along – a siesta after a hearty lunch is natural, new research suggests. Scientists at The University of Manchester have for the first time uncovered how brain cells or ‘neurons’ that keep us alert become turned off after we eat.

The findings – published in the scientific journal *Neuron* this week – have implications for treating obesity and eating disorders as well as understanding levels of consciousness.

“It has been known for a while that people and animals can become sleepy and less active after a meal, but brain signals responsible for this were poorly understood,” said Dr Denis Burdakov, the lead researcher based in Manchester’s Faculty of Life Sciences.

“We have pinpointed how glucose – the sugar in food – can stop brain cells from producing signals that keep us awake.

Dr Burdakov’s research has shown exactly how glucose blocks or ‘inhibits’ neurons that make orexins – tiny proteins that are vital for normal regulation of our state of consciousness.

“These cells are critical for responding to the ever-changing body-energy state with finely orchestrated changes in arousal, food seeking, hormone release and metabolic rate to ensure that the brain always has adequate glucose.”

Malfunction of orexin neurons can lead to narcolepsy, where sufferers

cannot stay awake, and obesity; there is also evidence that orexin neurons play a role in learning, reward-seeking and addiction.

“We have identified the pore in the membrane of orexin-producing cells that is responsible for the inhibiting effect of glucose.

“This previously unknown mechanism is so sensitive it can detect minute changes in glucose levels – the type that occurs between meals for example.

“This may well provide an explanation for after-meal tiredness and why it is difficult to sleep when hungry.

“Now we know how glucose stops orexin neurons ‘firing’, we have a better understanding of what may occur in disorders of sleep and body weight.

“This research perhaps sheds light on why our European friends are so fond of their siestas.”

Source: The University of Manchester

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