

# Does eating at night make you fat?

By Alex Johnstone and Peter Morgan, *The Conversation*

Some media reports say that eating at night makes you gain weight, others say that it has no effect on body weight. So who is right?

First, it's important to remember that a gain in body weight only occurs when there is a change in calories consumed or calories burned. A calorie is a calorie, but there are conditions where food calories could influence your tendency to gain weight or lose it. For example, it is known that different foods have a different ability to make you feel full, which can influence your food choices later in the day and ultimately influence your total calorie intake.

If you feel full, you are less likely to snack. High protein meals for breakfast have been shown to reduce food cravings and help reduce snacking later in the day. A high protein meal kick-starts a release of dopamine, a neurotransmitter that stimulates feelings of reward. The reward response is an important part of eating because it helps to regulate how much food you eat.

Also, when you eat may influence your drive to be physically active. If you have a large dinner, you might feel weighed down and less motivated to be active, so your chances of burning calories are reduced.

Eating late in the evening is linked to weight gain and obesity, whereas research shows that eating breakfast is linked to a lower risk of obesity. This supports the theory that it's better to eat your main meal earlier rather than later. But is not true for all types of breakfast. In one study, people who ate meat or eggs for breakfast (or both)

were significantly more likely to have a higher body mass index than people who ate cereal or bread for breakfast. Not all breakfasts are created equal.

Different cultures have different approaches to patterns of eating, for example in Spain, a larger midday meal is common, followed by an afternoon siesta and evening tapas (small plates of food). Research by the University of Murcia in Spain shows that overweight women who consumed more at lunchtime lost more weight than those who consumed a larger evening meal, highlighting that changes in meal timing can influence obesity and success of weight loss therapy.

Is breakfast a coffee on the go or a sit down full English – or do you skip it altogether? If you don't usually eat breakfast, just adding it in won't necessarily lead to spontaneous weight loss. Research in obese adults, shows that some people even gain weight when they do this. We need more research to understand whether breakfasts of specific composition (high fibre or high protein) could improve weight management, and to understand the mechanisms that would best allow this.

For the moment, the idea that eating breakfast is associated with a lower risk of obesity and that eating late is linked with obesity is not conclusive as the evidence comes from observational studies, which can't show cause and effect. So, for breakfast eaters, it is possible that lifestyle factors that may not have been accounted for in these studies, such as physical activity or smoking status, could explain the results. We need more evidence before we can support or reject the idea that timing of eating is important for body weight and health.

### **Lark or owl?**

So how can we assess these claims about when to eat? Actually, the truth is that one diet message does not fit all people.

Some people will be able to control body weight better with a big breakfast and some with a large evening meal. You can assess your own biological bias.

Are you an owl or a lark? Knowing your own tendency to feel alert and energetic – your “chronotype” – can help you plan your eating, work and sleep patterns. There are online quizzes to find out if you are an early bird or night owl.

As we understand this interaction of time of day and metabolism better, we will be able to give more accurate dietary advice to the individual that is not only related to nutritional composition, but also time of eating. But first, we need more chrono-nutrition research (time of eating linked to circadian rhythm) to fill in some of the gaps in our knowledge.

*Alex Johnstone is personal chair in nutrition at the Rowett Institute, University of Aberdeen and Peter Morgan is chair professor at University of Aberdeen.*