

- Diet / Health

A belly full of belly fat

Intermittent fasting is one of the most popular diets, but a new study raises questions about its effectiveness at tackling belly fat. Sophie Aubrey reports.

The Timaru Herald · 9 Mar 2021 · 14

A new Australian study raises questions about the effectiveness of intermittent fasting at tackling belly fat after finding the tissue grew resistant to weight loss. University of Sydney research, published in Cell Reports, examined the effects of every-other-day fasting, where no food is consumed on alternate days, on different fat tissue in mice.



The scientists discovered that when fasting, visceral fat – the abdominal fat that surrounds organs and can lead to a protruding tummy – went into “preservation mode” and adapted to be more resistant to weight loss.

“This was unexpected,” says lead author Dr Mark Larance, of the Charles Perkins Centre. “[It shows] diets can affect different fat depots differently.”

During a fasting state, fat tissue is broken down by a process called lipolysis, which releases fatty acids to provide energy to the body.

But not all fat is the same, Larance says. Visceral fat, at higher levels, is associated with metabolic illness (such as cardiovascular disease and diabetes) and is a bigger problem in men.

Subcutaneous fat – which lies just under the skin all over the body – provides some insulation and at moderate levels is linked to metabolic health. There is also brown fat, which lies around the neck and shoulder blades, providing heat, but this study didn't find changes to this tissue. Larance says the research uncovered a “striking change” in abdominal fat over two weeks whereby it downgraded its ability to break down via lipolysis. He says it's possible that repeated bouts of fasting triggered a signalling pathway to protect its energy store.

“[It means] subcutaneous tissue is having to contribute more fatty acids.”

Of course, some people do experience weight loss while on an intermittent fasting diet.

Larance says it's unclear what fat is lost, but we usually carry more subcutaneous fat so losing it is more noticeable. He also says his study was on healthy mice which weren't calorie reduced, so future research will examine whether effects differ on overweight subjects.

Human studies on the effects of intermittent fasting remain limited, but Larance says mice are physiologically similar, with a metabolic rate that is 4-5 times faster, allowing scientists to rapidly observe changes.

“This discovery approach lets us take something we've learnt and devise methods to look at it in humans,” he says.

The next step, Larance says, will be to investigate the effects of alternate-day and other types of intermittent fasting (such as the 5:2 and 16:8 methods), plus different diets, on belly fat in humans.

“We've opened up a whole bag of new things we need to follow up on,” he says.

“For example, chronic calorie restriction and the ketogenic diet, the visceral fat could be doing the same thing.

“It demonstrates it can do this and ... [means abdominal fat] might be harder to lose depending on what diet you're on.”

Larance points out many people who diet find they hit a point where they stop losing weight.

“This could be a potential mechanism for why that might be occurring,” he says. “It could mean that switching dietary regimes may provide that beneficial effect.”

In addition to the lipolysis finding, Larance says, inflammatory markers in visceral fat – which are linked to disease risk – were reduced with fasting.

Larance's laboratory at the Charles Perkins Centre has spent several years researching the effects of intermittent fasting using advanced protein-monitoring technology. Another of his studies, published last year, found the diet could support liver health and protect against disease.

University of South Australia nutrition scientist Dr Evangeline Mantzioris, who was not involved in the research, cautions against drawing too many conclusions from results of the mouse study.

“[But] it gives us really valuable insight into how things may work,” she says.

“We've always known fats around the body respond differently to exercise, but this study shows intermittent fasting does make a difference [too].

“It gives brilliant evidence that we've seen it in mice and let's see how it goes in humans.”

She adds that it will be important to investigate other intermittent fasting methods: “Every-otherday fasting will show the more extreme of the situation I think.”

Mantzioris adds that intermittent fasting's associated benefits – such as improved insulin and glucose responses – go beyond weight loss.

She suggests people interested in the diet find a routine that fits with their lifestyle. The fat-burning effects of a fasting state can occur 2-4 hours after eating. People who take medication need to consult a doctor.

‘A first step is to try not snacking and having an early dinner and not eating again until breakfast.’

We’ve opened up a whole bag of new things we need to follow up on. It means abdominal fat might be harder to lose depending on what diet you’re on.