

ABC News (PM with Tim Palmer)

Research Finds High Fat Diets Change Taste Buds, May Lead To Overeating

Presenter: Imogen Brennan

Interviewee: Professor Russell Keast & Andrew Costanzo, Deakin University

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TIM PALMER: If you eat a diet that's too high in fat, you might be unintentionally resetting your taste buds - setting yourself up for even more overeating down the track.

Researchers at Deakin University have found that it's possible to change your threshold for tasting fat.

The good news is you can also bring your fat sensitivity back to normal. Part of the study involved harvesting tastebuds from the tongues of participants, as Imogen Brennan reports.

IMOGEN BRENNAN: It's like breaking your taste buds - if you eat too much fat, your sensitivity to it decreases - so it'll take more fat to satisfy your taste buds and your tummy.

Professor Russell Keast is from Deakin University. He's leading the team at the Centre of Advanced Sensory Science that has made this discovery.

RUSSELL KEAST: You know, is it that we are born with less sensitivity to fat or is it that we eat a lot of fatty foods and that drives our sensitivity down? So those are the types of questions that we're looking at the moment.

IMOGEN BRENNAN: In their latest study published in the international journal *Obesity*, they put 53 overweight and obese people on a weight-loss diet for six weeks.

Some were put on a low fat diet, which meant less than a quarter of their total calories came from fat.

The others were put on a portion-controlled diet, where their calories were reduced but a third of that intake came from fat.

RUSSELL KEAST: And what happened was people lost weight during the six weeks. But people on the low fat diet actually increased their sensitivity to fat and the ability to identify fat in foods.

So, two very important parameters in terms of being able to have sustainable weight-loss over the long term.

We think this has bigger implications because what we're measuring in the mouth is also reflected throughout the gut.

IMOGEN BRENNAN: So your team at Deakin was the team that kind of developed the notion that fat taste is a thing.

Does fat taste good to humans or does it just feel good?

RUSSELL KEAST: So this is absolutely independent of any of the things like the mouth feel associated with fat. What happens when we get to a level where we can actually identify the taste of fat, it's actually very unpleasant.

IMOGEN BRENNAN: Professors Keast's team is also looking in to the genetics of sensitivity to fat taste.

Andrew Costanzo is a researcher at Deakin.

ANDREW COSTANZO: So what I'm looking at is twins - we're putting one twin on a low-fat diet and the other twin on a high-fat diet to sort of see whether or not fat taste is genetic or there's some sort of environmental component to it which we can alter.

IMOGEN BRENNAN: Now as part of your study, you're collecting taste buds from the twins. How does that actually work and what are you doing with the taste buds?

ANDREW COSTANZO: So, if you look at your tongue in the mirror you can see the little tiny dots on your tongue. What we do is we get little micro scissors and we snip those little buds off the twins, approximately six to eight taste buds each.

Now this is a completely painless procedure. It sounds much scarier than it is, but it doesn't have any effect on the tongue long-term or short-term.

And what we want to do is be looking at the physiology of the taste buds - how that changes from before to after the diet and looking at exactly what part of the taste bud is involved towards taking fat.

IMOGEN BRENNAN: The genetic research and the findings from the taste bud harvesting should be finished at the end of the year.

TIM PALMER: Imogen Brennan reporting there.