

Skill set key to sticking to a healthy diet

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Executive functions are psychological skills we use to achieve goals – for example planning actions in advance, solving problems and ignoring distractions. People with less efficient 'executive functions' are less able to adhere to healthy diet intentions. Scientists behind the research are using the information to develop interventions to help people eat as they intend.

Executive function can be tested with standardised psychological tests. Characteristics of a person with less efficient executive function include:

- A lesser ability to filter information to distinguish and prioritise important information from less important information
- Less efficient [prospective memory](#) – reduced ability to remember to perform a planned action or [intention](#) at the appropriate time – for example remembering to post a letter
- A lesser ability to think flexibly – to rapidly weight up options and make a new decision if your initial plan has fallen through
- A lesser ability to plan actions in advance
- More easily distractible

Dr Julia Allan, Deputy Lead, [Health Psychology](#) at University of Aberdeen, said: "Four individual studies that have taken place at the University of Aberdeen over the last 4 years, involving –around 250 subjects have shown that a link exists between a person's level of executive function and their ability to stick to dietary goals.

"A person with a less efficient executive function is less likely to resist [temptation](#) and stick with what they had planned to eat on any given day, than someone with more efficient executive function."

The tests University of Aberdeen scientists have conducted which have shown this link include:

- Asking participants (who had undergone standardised psychology testing to establish their executive function) to carry an electronic diary that beeped at periods throughout the day prompting them to make a note of what they had eaten. Participants with less efficient executive function ate less fruit and vegetables than intended and more high calorie snacks than intended over a 3 day period than those with more efficient executive function.
- Asking participants who were currently dieting (again after executive function testing) to take part in what they believed to be a consumer rating study on fair trade products.

Participants with less efficient executive function ate significantly more of the available fair trade chocolate than those with more efficient executive function, that is, they were more likely to give in to temptation when an opportunity to break their diet arose.

Dr Allan continued: "We are now at the point of developing interventions to help people with less efficient executive function stick to their healthy dietary intentions.

"The first option we are looking at has been tested in a recent study. People with less efficient executive function may be more likely to give in to temptation at the last moment before they make their decision – so if they are standing queuing to order food in a coffee shop they may be more likely to make a 'wrong decision' on what to order at the moment

before they get to the till.

"We developed signage to sit at counter/eye level which shows all of the food options available ranked in a spectrum – lowest calories on the left through to highest calories on the right."

Over a 12 week period this was displayed periodically in two coffee shops in Aberdeen. Findings showed that in the weeks where the signs were displayed, sales of lower calorie foods went up and sales of higher calorie foods went down. In addition, customers with less efficient executive function were more likely than others to reduce the calorie content of their purchases after seeing the signs.

This showed that the signage was supporting people to make healthier choices the theory being that the signs helped those with less efficient [executive function](#) by providing:

- A visual prompt – reducing the need for them to remember to make the correct dietary choice
- A clear solution to help meet their goal, reducing the need for advance planning
- A concise summary of the information they require to aid their decision making process, reducing the need for flexible evaluation of options
- A visual summary of possible food choices that highlighted low calorie options and made high calorie options easier to ignore

Dr Allan said: "From our research it's clear that sticking to a diet is not simply a case of making a decision to eat more healthily. Dietary control involves lots of different psychological skills and resources and so will be much easier for some people than others.

"We've also shown that it is possible to change our environment in a way that makes it easier for people to stick to their diets."

Provided by University of Aberdeen

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