Obesity linked to cognition

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New research suggests obese individuals often perform poorly in reasoning and planning tasks and, likewise, those with poor cognitive function are more vulnerable to excessive weight gain.

The controversial findings, published this week in the international journal Obesity *Reviews*, suggests that obesity should be treated, at least in part, as a brain condition, similar to anorexia nervosa.

This could mean introducing cognitive remediation therapy used to treat anorexia to support other lifestyle interventions for people with obesity. Cognitive remediation therapy aims at improving executive function via cognitive training and increases awareness of cognitive style.

Australia is one of the most overweight developed nations in the world, according to the Federal Government's Preventative Health Task Force, with over 60% of adults and one in four children overweight or obese.

Reviewing 38 recent studies into obesity and cognition, researchers from UNSW's School of Psychiatry found there was a likely "vicious cycle" relationship between cognition and obesity, with low performance in planning, reasoning and problem solving exacerbating weight gain, which in turn compounds negative influence on the brain via biological mechanisms.

This relationship was not explained by other factors such as medical problems or social status, and was apparent in children, adolescents and adults, but not in the elderly whose situation is more complex. However

the research does support existing studies that show mid-life obesity is a risk factor for dementia in later life.

The reviewers said obesity is, at least in part, a brain condition, not only a so-called “lifestyle” disorder. There is evidence of a common genetic vulnerability for both obesity and impairments in thinking style which could be triggered by lifestyle factors.

Review lead author Dr Evelyn Smith said the finding was controversial, but what it didn’t mean was that all obese people have cognitive deficiencies. “However, on average they do have more problems with problem solving and other ‘executive’ brain or cognitive functions than normal weight individuals,” she said.

“Executive function is the most common cognitive deficiency found in obese individuals. It encompasses a diverse range of processes that facilitate initiation, planning and achievement of complex goals, all of which may impact on eating behaviour and activity.”

Cognitive remediation therapy similar to that used to treat individuals with anorexia could be an effective intervention for obesity, by improving certain cognitive processes and in turn helping individuals maintain a healthy lifestyle long term, Dr Smith said.

Dr Smith is now piloting the therapy as a way to help the obese lose weight and keep it off long term, in collaboration with Kings College London and University of Western Sydney (UWS).

“Because current strategies for treating obesity are not successful long-term, there’s an urgency to invest in new obesity research,” Dr Smith said.

“Additional investigations are required to further understand the

biological mechanisms and bi-directional relationship between cognition and obesity, and also to confirm whether executive function in children and adolescents can predict obesity in adults," she said.

Dr Smith's review was supported by a grant from the National Health & Medical Research Council of Australia, and was carried out in collaboration with Professor Phillipa Hay (UWS), Conjoint Professor Lesley Campbell (UNSW), and Associate Professor Julian Trollor (UNSW).

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