

The use of a biological marker, 5-HT2C genotype, as a predictor of motivation, adherence and weight loss in participants of an obesity intervention programme

Results:

The overall aim of this study was to investigate the influence of serotonin and dopamine receptor gene polymorphisms on various parameters relevant to the successful participation of obese people taking part in a diet and exercise obesity intervention. We demonstrated that serotonin receptor gene genotype has a significant influence on perception of hunger. We also showed that dopamine receptor gene polymorphisms significantly influence the drop out rate from an obesity intervention study, and suggest that this is due to the influence of these polymorphisms both on motivation to exercise and on restrained eating behaviours. Finally we demonstrated the efficacy of motivational interviewing in an obesity intervention programme and have shown that motivational interviews influence the relationship between measures of motivation or eating behaviours and weight loss measured by BMI change. These novel findings indicate that serotonin plays a key role in determining appetite. They also indicate that extent of dopamine signalling may influence an individual's motivation to engage in weight-loss programmes. Further studies are required to confirm these findings and investigate the underlying mechanisms involved.

Presentation at meetings:

Poster presented at the 'Behind and beyond the brain' Bial symposium April 2010, 'Polymorphisms in serotonin and dopamine receptor genes influence weight loss, motivation and eating behaviours' Caroline F Dalton, Jeff D Breckon, Nimali De Silva, Robert J Copeland, Adrian J Hall, Sue W Kesterton and Gavin P Reynolds

Area(s) of interest:

Serotonin, dopamine, genetics, obesity, motivation

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