

Obesity: The Body-Brain Connection

Global rates of overweight and obesity have increased threefold since 1975.¹ Findings from The Health Survey for England 2019 show 28% of adults in England are obese,² and WHO estimates this complex chronic disease is affecting 39% of the world's population who are now classed as overweight or obese.¹

One of the major challenges to treatment is the myriad of health complications obesity contributes to, including hypertension, diabetes, cardiovascular disease (CVD) risk, and some cancers.³ Tackling the issue is limited further by the effects of obesity causing interrelating dysfunction to multiple tissues and organs that present differently across different populations.⁴

While it is now known that obesity adversely impacts the healthy functioning of most body systems, its entire impact on the body is still to be fully understood. In addition to increasing risk for CVD, recent evidence links obesity with unfavourable changes in brain morphology and function, as well as impaired cognitive performance that hampers impulse control, making it harder to resist eating.⁵

There is now growing evidence that obesity might be understood within the same neurobiological framework as addiction, and that research, treatments and policy should be shaped accordingly.

Research suggests that food intake could stimulate reward pathways similar to that seen in drug addiction, and this idea is exerting a tremendous influence on the field of obesity research.⁵ Whether associations seen between obesity, brain and cognitive measures are a *cause*, or a *consequence* of weight gain remains a matter of debate.

Winter Conference 2021

This year's Nutrition Society Winter Conference will be a hybrid event hosted from the Royal Society on 7-8 December 2021. It will highlight the impact of obesity and diet on brain structure and function, discuss the main drivers of food intake, and shed light on the current challenges for behaviour change interventions being implemented to address this complex disease.

The Scientific Programme Organisers have developed a multi-disciplinary programme appealing to early career researchers through to established scientists, healthcare professionals and weight management programme providers that span preventive medicine, nutrition and dietetics, psychology, psychiatry and neuroscience.

Focusing on how obesity can alter brain structure and function, speakers on day one will discuss the role of reward in ingestive behaviour and consider whether bariatric surgery can lead to improvements in cognitive function. Professor Falko Snielhotta, Newcastle University, will also look at the barriers to behaviour change in weight management, considering the effects of 'lockdown' resulting from the COVID-19 pandemic.

Day two will take a closer look at some of the neurobiological pathways mediating appetite regulation, as well as the roles of personalised medicine, sleep hygiene, and the gut microbiome in the prevention and management of obesity. Highlights from some of the most impactful science and clinical research of the past few years will also consider the complexities of managing associated eating disorders and mental health.

In addition to excellent networking opportunities during the refreshment breaks and conference drinks reception, the full conference programme is planned to be endorsed by the Association for Nutrition (AfN), allowing delegates to add attendance to their Continuing Professional Development (CPD) portfolio.

The Original Communication sessions taking place across the two days offer an excellent opportunity for you to disseminate your research and for delegates to view emerging research. The deadline for abstract submissions is **30 September 2021**.

The hybrid event welcomes delegates from across the globe and following on from successfully securing a government grant from Visit Britain, the Society can offer a reduced registration fee of £150 for members to attend in person. This price includes the conference fee, lunches, coffee breaks, and the welcome drinks reception. Retired and Student Members will also benefit from further lowered delegate fees.

Find out more, and register, at: www.nutritionociety.org/events/winter-conference-2021-obesity-and-brain

References: 1. WHO. (2021). Overweight and Obesity. www.who.int/news-room/fact-sheets/detail/obesity-and-overweight. Last accessed: 24/07/2021 2. NHS (2020). Health Survey for England 2019. <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2019>. Last accessed: 24/07/2021. 3. Singh, M. (2014). Mood, food and obesity *Frontiers in Psychology*, 5 (925), doi: 10.3389/fpsyg.2014.00925 4. Uranga and Keller (2019). The complex interactions between obesity, metabolism, and the brain. *Frontier Neuroscience*. 5. Stillman, C. M., Weinstein, A. M., Marsland, A. L., Gianaros, P. J., & Erickson, K. I. (2017). Body-Brain Connections: The Effects of Obesity and Behavioral Interventions on Neurocognitive Aging. *Frontiers in aging neuroscience*, 9, 115. <https://doi.org/10.3389/fnagi.2017.00115>

Updates and Events Calendar

- 6-8 September – Nutrition Futures 2021.
- 7-8 December – Winter Conference 2021: Obesity and the brain.
Find out more and register for the Society's conferences here: www.nutritionociety.org/conferences

• Introduction to Human Nutrition Series:

The NSTA has produced a 5-part webinar series to support the content and provide additional learning for the IHN Textbook.

www.nutritionociety.org/events/introduction-human-nutrition-webinar-series

• Obesity series:

The NSTA's obesity series provides an in-depth overview of the increasing global issue of obesity. This six part series provides an opportunity to hear from leading experts in their respective areas of obesity research.

www.nutritionociety.org/events/obesity-series

ALL Nutrition Society Events are CPD endorsed by the Association for Nutrition.

You can now publish, for free, in the open access journal, Gut Microbiome until 31 March 2022.

Find out more: www.nutritionociety.org/publications/gut-microbiome

