Food and mood: Why Nutritional Psychiatry is Attracting Attention

By: George Winter, The Irish Times

Researchers are finding that some diets can lead to a range of mental benefits

The sigh of contentment after a pleasant meal confirms a link between food and mood, but research in recent years is uncovering the nature of the relationship between diet and mental health.

For example, a 2017 review in the British Journal of Sports Medicine, **Sugar addiction: is it real?**, reported that "sugar meets many of the criteria for a substance of abuse and could be potentially addictive in humans". And, recently, the first randomised trial – **Randomized crossover trial of a modified ketogenic diet in Alzheimer's disease** – to investigate the impact of a ketogenic diet (a high-fat, low-carbohydrate diet that shifts the body towards fat metabolism) in Alzheimer patients reported: "Compared with a usual diet supplemented with low-fat healthy-eating guidelines, patients on the ketogenic diet improved in daily function and quality of life, two factors of great importance to people living with dementia."

And a report in the Proceedings of the Nutrition Society – **Nutritional psychiatry: the present state of the evidence** – notes that "nutritional psychiatry is a rapidly growing field of research that has the potential to provide clinically meaningful interventions to both prevent and manage mental illness".

Nutritional psychiatry?

"Historically, psychiatric education has completely ignored the topic of nutrition." That's the verdict of Harvard-trained, board-certified psychiatrist **Dr Georgia Ede** who is helping pioneer

this emerging discipline in psychiatric practice. Dr Ede told The Irish Times that in her four years of residency training, food wasn't mentioned once: "For decades, our treatment paradigm has been the trial-and-error use of psychiatric medications intended to address neurotransmitter imbalances, without seeking to understand what might cause these imbalances in the first place." Today, Massachusetts-based Dr Ede specialises in nutritional and metabolic psychiatry, **writing and speaking** about nutrition science, mental health, and dietary policy, and training clinicians in the applications of nutritional psychiatry.

Powerful tools

Although Ede recommends different therapeutic diets in her practice, including paleo diets and elimination diets, one of her most powerful tools is the ketogenic diet, which reliably normalises blood glucose and lowers blood insulin concentrations, reduces inflammation and oxidative stress, supports the brain's growth and repair pathways, helps to correct neurotransmitter imbalances, and improves the brain's access to energy: "One of the benefits of a strategy that fundamentally improves brain metabolism and whole brain health rather than a medication that targets specific neurotransmitters, is that it can be useful for a variety of diagnoses."

Our gut bacteria are like little factories, processing the raw materials we consume through diet

Ede cites examples from her practice, including "a man with months of depression, profound agitation and insomnia whose symptoms completely resolved without medication on a ketogenic diet; a woman with lifelong attention deficit disorder who can forego stimulants when in ketosis; and a man with early Alzheimer's disease who experiences greater mental clarity when in ketosis."

However, Ede explains that "ketogenic diets are not right for everyone, and their use in managing psychiatric disorders often requires specialised knowledge and expertise, particularly when medications are involved".

Diet and depression

Meanwhile in Ireland, nutritional psychiatry is attracting the attention of researchers. A recent paper in the journal Molecular Psychiatry, **Diet and depression: exploring the biological mechanisms of action,** explores the relationship between diet and depression and is co-authored by Prof John Cryan and Dr Gerard Clarke of University College Cork (UCC). The paper cites, for example, tryptophan, found in foods such as chicken, tuna, peanuts, milk and cheese, and whose metabolism has important implications.

Dr Clarke, lecturer in the department of psychiatry and neurobehavioural science at UCC and a principal investigator at APC Microbiome Ireland, explains: "Tryptophan is an essential amino acid that must be supplied in our diet. It is a key raw material and building block for neurotransmitters like serotonin, the main therapeutic target of most antidepressants and many anxiolytics. One surprising finding from my work is how much our gut microbes affect tryptophan supply. Our gut bacteria are like little factories, processing the raw materials we consume through diet. Our gut microbes can directly and indirectly influence the fate of the

tryptophan we consume and thus determine its availability as a building block for serotonin in the gut and the brain. This critical role for our gut microbes is something we never really considered in detail before. Adding these new insights has been a highlight of my research.

“I’ve also been fortunate,” Clarke explains, “to collaborate with **Prof Felice Jacka** and her team in Melbourne. Prof Jacka is a key author of the Molecular Psychiatry paper and has been instrumental in putting food and mood on the map and driving the new field of nutritional psychiatry.”

Prof Cryan of UCC’s department of anatomy and neuroscience is co-author of The Psychobiotic Revolution: Mood, Food, and the New Science of the Gut-Brain Connection (2017) from National Geographic Press. He told The Irish Times how ground-breaking research from UCC’s APC Microbiome Ireland is investigating the role of the trillions of bacteria within the gut (the microbiome) on brain health and how it is shaped by diet: “Their ongoing work is showing that a diet enriched with fibre and fermented foods has beneficial effects on stress responses in healthy volunteers after just one month.” Cryan who is leading this research, is optimistic about the concept of “psychobiotic diets” and stresses that our state of gut can affect our state of mind.

Mediterranean diets

Consultant psychiatrist Prof Gautam Gulati of the University of Limerick acknowledges that dietary considerations are becoming an increasingly important factor in the treatment of mental illness: “Mediterranean diets, for example, may be beneficial in the adjunctive treatment of depression and anxiety, and additional lifestyle changes such as regular exercise and sleep are, of course, equally important. There is a growing recognition in practice of the importance of the gut-brain axis as a target for maintaining and improving mental health. While the science behind nutritional psychiatry is still evolving,” he adds, “a healthy varied diet promoting good bacteria in the gut is likely to be associated with reduced stress levels.”

Most people have been feeding their brains improperly their entire lives

How does Ede **see the future** of a dietary role in psychiatric practice developing? “I firmly believe,” she explains, “that everyone with a mental health concern deserves a metabolic evaluation to look for potentially reversible root causes of their symptoms and should be offered counseling about the importance of dietary quality to their mental health.”

She is also certain of growing public interest in these empowering new treatment options, “and when people discover and apply them, they share their success with others, including their clinicians. Most people have been feeding their brains improperly their entire lives and have no idea how much better they could feel if they had the information, tools, and support to begin making healthy changes.”

As Cryan and Clarke’s co-authored paper observes, nutritional psychiatry “has the potential to result in new and targeted strategies for those affected by mental illness”.