

Let's talk Micro-Biome

Aaron Roman
Graduate Dietitian

WHAT IS GUT MICROBIOME?

Our gut is host to trillions of microorganisms. These microorganisms are bacteria that live in our gut and can be termed as 'good' and 'bad' bacteria. Good bacteria can provide many health benefits to their host including improvements in: weight management, chronic inflammation and insulin resistance. There is also evidence to suggest a healthy microbiome can be beneficial for mental health. (1-3)

HOW HAS OUR GUT MICROBIOME DEVELOPED?

Bacteria first began to reside in our gut early on in life. Research suggests this process begins when we're in the womb. Throughout our lives, many factors exist that influence the bacteria that make up our gut microbiome. Some of these factors are those that we can't control like genetics, stress and illness but others we can control are related to our lifestyle, especially diet. (1)

THE EVER EVOLVING MICROBIOME

Just like our diets, our gut microbiome is dynamic - it is constantly changing. Studies have found that gut microbiome can change dramatically whenever we make changes to our diet and when we take a course of antibiotics - some changes have been shown to be as quick as within 24 hours. (4)

GUT MICROBIOME AND MENTAL HEALTH

Our brain and gut are connected both directly and indirectly. Examples include our immune system and the protection of our brain cells: when we eat foods such as fruit, vegetables, grains and nuts, our body breaks down these foods into valuable nutrients that our body utilises to perform optimally. When fibre rich foods are digested, Short Chain Fatty Acids (SCFA's) are produced which can assist in reducing chronic unresolved inflammation. This chronic inflammation is accompanied by increased oxidative stress, which has been found to be a factor in greater risk of developing mental health issues. A diet high in processed food and low in fibre reportedly has the potential to increase the risk of depression and anxiety. (5, 6)

PREBIOTICS VS. PROBIOTICS

Prebiotics are indigestible fibres that stimulate the growth of good bacteria in the gut. Examples of prebiotic foods include: garlic, onion, and artichoke. Probiotics are live microorganisms that thrive from feeding on prebiotics. Common probiotic strains you may have heard of are: Lactobacillus and Bifidobacterium. Probiotics can be found in products such as some yoghurts, kombucha and dietary supplements. Evidence suggests that through a combination of pre- and pro-biotic supplementation, the composition of our gut microbiome can be improved. (7)

WHO CAN BENEFIT FROM PRE- AND PRO-BIOTICS?

There are several circumstances that can be improved from pre- and pro-biotic implementation in our diet. To name a few: constipation from anti-biotic use, irritable bowel syndrome (IBS) and ulcerative colitis. Despite this, it is recommended to speak with a GP, gastroenterologist and Accredited Practising Dietitian before trialling a diet higher in pre- and pro-biotics. (7)

WHERE TO FROM HERE?

There is a lot of research being undertaken in this space, however it is still early days. Researchers are looking into the potential benefits of faecal transplants, others are looking into the supplementation of dietary based prebiotics and/or probiotics and its outcome on gut microbiome composition, cognition and mental health.

