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The Gut and the Immune System

The Gut is Responsible for 80% of Your Immune System

Although this is crucially important, the role of the gut on our immunity is both complicated and intricate and yet what we know so far is only the tip of the iceberg.

There is so much more to discover and as studies are being conducted, we are coming to realise just how central a role the gut plays in the development and functioning of the immune system and hence our ability to fight disease. As this is possibly where your eyes are going to cross and your mind wander to what is for dinner tonight... the short take away is this.

1. The intestinal wall is a mucosal, living, intelligent barrier between your gut and the body. It keeps the bad stuff out and lets the good stuff in. Potentially harmful bacteria is either neutralised or kept under control in the correct balance when it contributes benefits. The intestinal wall is made of epithelial and immune cells that produce antibodies and antimicrobial cells that fight harmful microbes and pathogens.
2. Dendritic cells located in the epithelial wall extend projections into the intestine searching for threats and devising appropriate responses.
3. The intestinal wall allows certain microbial metabolites into the body that influence the development and function of both circulating immune cells and resident immune cells in different organs including the brain.
4. The intestine also possesses the largest mass of lymphoid tissue in the human body. This lymphoid tissue stores immune cells, such as T and B lymphocytes that carry out attacks and defend against pathogens.

Already, we can see how the gut is a key player in our immune response not only locally in the intestinal tract itself but throughout the whole body, including the brain. Essentially, we now know that immune cells in the gut talk to the body and orchestrate and mobilise the immune system.



A recent demonstration of how gut immune cells play a vital protective role is from the recent study conducted by an international research team led by UC San Francisco that has shown, for the first time, that gut immune cells travel to the brain during Multiple Sclerosis (MS) flare-ups in patients.

These gut cells seem to be playing a protective role, helping drive MS symptoms back into remission. And now the team have gone a step further finding traces of IgA antibody in the cerebrospinal fluid of MS patients during flare-ups, but not when episodes are in remission. The findings confirm for the first time that gut immune cells are involved in MS relapses in humans.

Damage to the gut lining, leaky gut, little and poor diversity of good bacteria and an overgrowth of damaging bacteria can cause havoc in the body and to your immune response.

The intestines ability to neutralise pathogens and harmful microbes in the gut becomes compromised and the intestinal barrier leaks, allowing undesired microbes and microbial products into the body.

This may result in chronic inflammation in the body and altered immune responses (eg auto-immunity, allergies etc). Very often, when the gut is healed, food allergies may diminish/disappear, auto immune conditions improve/are cured and general health improves overall provided a healthy, varied and organic diet is followed (pesticides, fertilisers etc all damage the gut).