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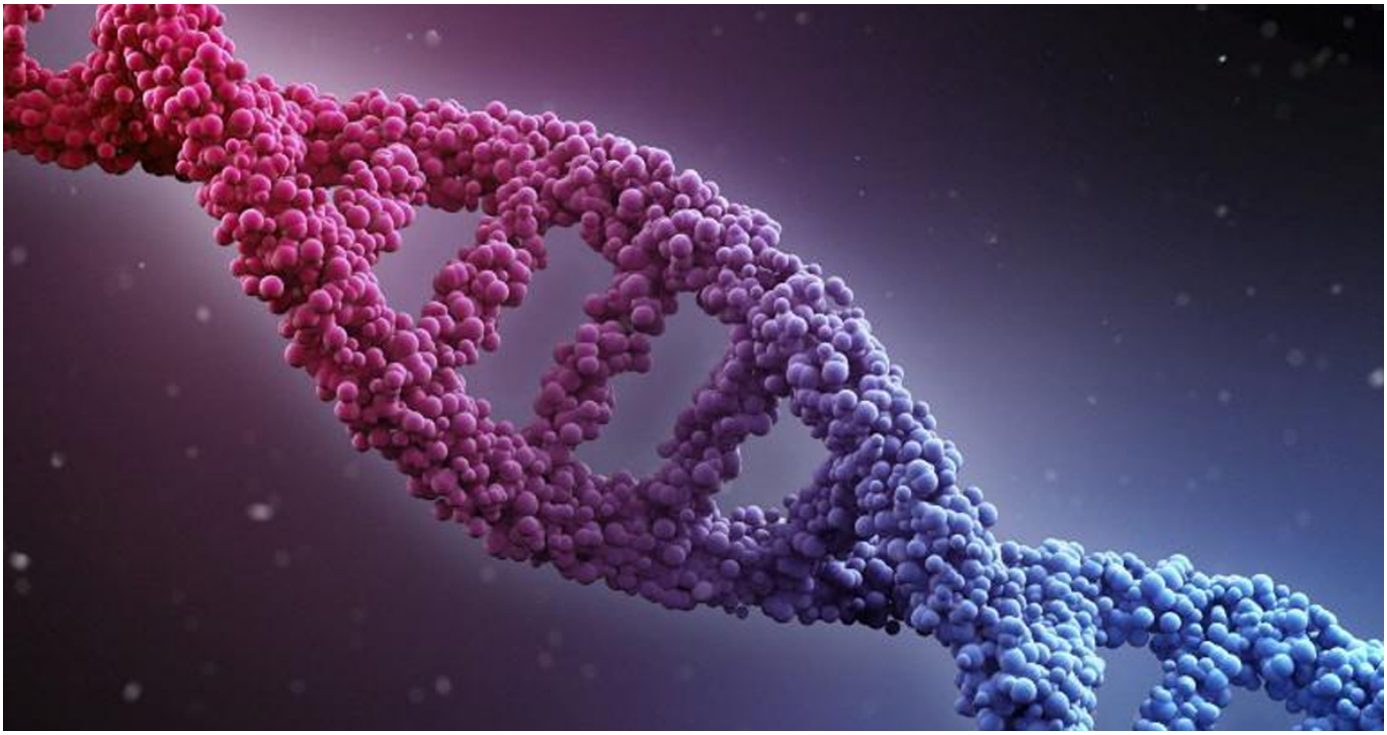

Research conducted by Weizmann Institute of Science suggests that diet & lifestyle dominates gut microbiota, not genetics

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Words by Holly McHugh | Staff Writer

A STUDY conducted at the Weizmann Institute of Science challenges the long standing hypothesis that gut microbiome variation between individuals is due to genetic differences. The presence of certain strains of bacteria and the microbial composition of our microbiomes significantly impacts our mental health, weight, athleticism, immune function, inflammation, allergies, metabolism and appetite – a lengthy list. Nature vs Nurture?

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Scientists believe the genetic makeup of

determines the environment in our digestive systems, and what particular strains of bacteria are present. However, according to Weizmann researchers, diet and lifestyle are the most important factors in determining t composition and health of our microbiome. Those excusing th scale reading because it's "in their genes," may need to thi again.

What is the gut microbiome?

The human gut contains an ecosystem of trillions microorganisms such as bacteria, fungi, yeasts, viruses and oth microscopic living things; the good guys and the bad guys. healthy microbiome is one that comprises of mostly the good gu – probiotics are good bacteria associated with healthy gut flora to assist with the breakdown of food and toxins to make vitami and to train immune systems to be stronger.

To gain a better understanding: imagine growing a garden in yo digestive system. You want beautiful flowers and bushy plan with insects buzzing. In order to achieve this you must kill weed water the soil, provide plant food, and whatever else gardeners to encourage their gardens to flourish.

On the other hand, a neglected garden that isn't provided with the right nutrients and has unhealthy soil will breed weeds and insects are likely to be absent –the odd diseased rat may even take up residence. The same applies to our guts. Providing the body with the correct nutrients, vitamins and minerals and remaining hydrated, nurtures a healthy gut flora.

PTSD and gut bacteria

Stellenbosch University researchers investigated the relationship between posttraumatic stress disorder (PTSD) and bacteria in the gut. PTSD is a serious psychiatric disorder developed after experiences of life threatening trauma. It is believed that the gut microbiome influences the brain by producing neurotransmitters/hormones, immune-regulating molecules and bacterial toxins. Stress can change composition of gut microbes as stress hormones affect bacterial growth, causing inflammation associated with several psychiatric disorders.

levels of three strains of bacteria involved in immune syste regulation and had heightened levels of inflammation that m have contributed to their symptoms. Additionally, those w experienced trauma as a child also had lower levels of two of t strains of bacteria, indicating they may be at **higher risk developing PTSD later on in life.**

Microbiome influencing factors

It is widely believed that genes play an extremely important part determining the composition of gut microbiomes and account f the variation between people. Scientists from the Weizma Institute of Science challenge this theory, suggesting that geneti in fact play a very minor part – accounting for only 2% of variatio

Their findings are based on a study that examined around 1,0 Israelis who had previously participated in a study of personalis nutrition. Participant's genetic data, microbiome compositior dietary habits, lifestyle and medications were recorded and da analysed. It was concluded that diet and lifestyle were the mc important factors in influencing microbiome composition, rath than genes. Connections between microbiome and cholester weight and blood glucose were investigated and results sh associations with bacterial genomes were stronger th associations with the host's genome.

These studies highlight the importance of how microbior composition affects health. An internal garden of weeds increas the likelihood of weight gain and suffering from depression a illness. An understanding of what affects our gut flora could be essential in understanding and treating health problems.

It is known that the composition of our microbiome's affects our mental health, weight, athleticism, immune function, inflammation, allergies, metabolism and appetite – a lengthy list. The good news is it can be easily altered. Use of probiotics (live beneficial microorganisms), prebiotics (non-digestible food substances), synbiotics (combination of both) and dietary interventions, can all promote healthier guts.

Professor Segal from the Weizmann institute of science says: "we cannot shape our genes, but we now know that we can affect and even reshape the composition of different kinds of bacteria in our bodies. Findings from this research suggest that our microbiome could be a powerful means for improving our health".

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