



Natural products used for medicinal plants and dietary ingredients promote weight loss, latest study finds. A group of scientists have recently published a scientific text, which indicates a significant connection between human microbiota, dietary changes and weight loss. But are natural products a panacea for obesity and metabolic diseases? Not only that, but the most recent study demonstrated the importance of medicinal plants and natural plant-based food sources for human health in general.

Over the last decades, obesity has clearly become an epidemic. Statistics show that there are more than 1.6 billion overweight adults. Receiving a wide attention, due to the strong connection between obesity and type 2 diabetes, many have coined the term “**diabesity**.” On the other hand, **obesity** is one of three metabolic disorders, next to **insulin resistance** and **hyperlipidemia**, that form the **metabolic syndrome**.

Scientists recognized the important relationship between unhealthy diet and a modified gut microbiota: a condition, which is observed in diabetic or overweight patients. Similarly, several research groups investigated the role of diet, which has abundance of [natural compounds](#) like polyphenols and plant polysaccharides. The conclusion they made is that such dietary behavior is beneficial in modulating gut bacteria and has positive influence on type 2 diabetes and obesity.

The health benefit of natural products is indisputable, but most importantly scientists are making steps in clarifying their influence of the whole process. Shedding light on gut microbiota is part of the contribution to this insight.

What is Human Microbiota?

For those who come across the word “microbiota” (microflora) for the first time, the word stands for “an aggregation of a mixture of microorganisms (e.g., bacteria, fungi, archaea, and

viruses) that live in human tissues such as skin, uterus, lungs, and in the gastrointestinal tract without causing pathological responses” in the human body.

These organisms do not harm the host, but on the contrary - they form a symbiotic relationship with the host. In a such relationship, the latter should also provide something, and in this case, is shelter and nutrition for the microbes. On the other hand, the microbes provide the host with essential vitamins and nutrients, boost immunity to fight pathogens. Even more, the recent studies have found that the microbiota in human gut is also modulating brain development, helping in metabolic functions, hormones and neurochemical production.

Therefore, the factors altering the homeostasis in gut microbiota lead to the pathogenesis of diseases such as type 2 diabetes, [obesity and cardiovascular disease](#). Generally speaking, any change in the types of bacteria present in the gut microbiota contribute to disease. This is because the alteration results in change of different metabolic processes in the host.

The interest in how the microbes and their metabolic products contribute to human health and disease is now growing globally. It appears that the gut microbiota is highly influenced by interventions with natural medications and changes in the diet. Even more – they ameliorate the symptoms of the aforementioned diseases. An example is that people who eat red meat, exhibit greater levels of the gut metabolite trimethylamine-N-oxide (TMAO) in comparison to non-meat eaters. Why this metabolite is important? Because TMAO seems to be linked to cardiovascular disease by playing part in formation of plaques in the arteries.

What’s the value of this conclusion? Making the right dietary choices and adding supplements, may lead to change in human microbiota. This in turn will contribute to health benefits for people with complex metabolic disorders as well as will aid their immune system.

Given all that and being over the pragmatic side, academics and industrial partners, will have to work together to develop reliable natural “products that can help prevent and mitigate the ill effects of metabolic syndrome and related obesity and [diabetes](#). In this context, a promising approach may be to further explore symbiotic products that can combine pre- and pro-biotics in novel and efficient ways”.

Below you can read the abstract of this study. The link to the entire document can be found on the bottom of the page.

Abstract:

“Significance of Microbiota in Obesity and Metabolic Diseases and the Modulatory Potential by Medicinal Plant and Food Ingredients

Metabolic syndrome is a cluster of three or more metabolic disorders including insulin resistance, obesity, and hyperlipidemia. Obesity has become the epidemic of the twenty-first century with more than 1.6 billion overweight adults. Due to the strong connection between obesity and type 2 diabetes, obesity has received wide attention with subsequent coining of the term “diabesity.” Recent studies have identified unique contributions of the immensely diverse gut microbiota in the pathogenesis of obesity and diabetes. Several mechanisms have been proposed including altered glucose and fatty acid metabolism, hepatic fatty acid storage, and modulation of glucagon-like peptide (GLP)-1. Importantly, the relationship between unhealthy diet and a modified gut microbiota composition observed in diabetic or obese subjects has been

recognized. Similarly, the role of diet rich in polyphenols and plant polysaccharides in modulating gut bacteria and its impact on diabetes and obesity have been the subject of investigation by several research groups. Gut microbiota are also responsible for the extensive metabolism of polyphenols thus modulating their biological activities. The aim of this review is to shed light on the composition of gut microbes, their health importance and how they can contribute to diseases as well as their modulation by polyphenols and polysaccharides to control obesity and diabetes. In addition, the role of microbiota in improving the oral bioavailability of polyphenols and hence in shaping their antidiabetic and antiobesity activities will be discussed.”

Publication (Frontiers in Pharmacology):

[Significance of Microbiota in Obesity and Metabolic Diseases and the Modulatory Potential by Medicinal Plant and Food Ingredients](#)

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