Perspective
Volume 9:2, 2023

Journal of Antimicrobial Agents

ISSN: 2472-1212 Open Access

Digestive Commensal Bacteria, Two Factor Theory, and Indeed the Influence of Intestinal Microbiota

George Tennyson*

Department of Clinical Microbiology, University of Southern California, Los Angeles, California, USA

Introduction

To determine the underlying factor in the dirty environment responsible for this phenomenon, we investigated the effect and extent to which soil in our environment influenced the makeup of gut microbiota. The findings show that adding unsterile or sterile soil to mice's bedding before or after weaning changes the composition of their gut micro biome significantly. Unsterile soil, in particular, boosts gut bacterial variety and richness. Surprisingly, according to Unifies distance analysis sequences, the impact of soil on gut microbiota is comparable to that of food. These findings point to a novel strategy for intervening in the human gut micro biome and preventing disease [1].

Description

The way of delivery ages, antibiotic therapy, ages the main contributing elements are, diet, and living environment. They affect the gut micro biome to varied degrees. Diet is the most well studied of these factors, as it has an impact on the composition and function of the microbial community in humans. The microbiota of malnourished children has been observed to inhibit growth and cause metabolic abnormalities in the brain and other organs of recipient gnotobiotic mice. Diet alters the gut flora, which leads to other chronic conditions such obesity, cardiovascular disease, and autism. Even though long-term dietary habits continue to shape an individual's gut microbiota composition, the human gut microbiota responds swiftly to dietary changes. We found changes in gut microbiota between mice rose on sterile or unsterile soil and fed a regular or high-fat diet in this study. The makeup of gut microbiota was significantly affected by sterile and non-sterile soil, with non-sterile soil also enhancing bacterial diversity.

Furthermore, regardless of whether mice were fed a regular or high-fat diet, unsterile soil applied before birth or after weaning affected the gut flora. As a result, we propose that soil is one of the most important factors regulating gut microbiota, with an influence comparable to that of nutrition. Mice have a tendency of coprophagy and fur combing, which allows them to ingest soil. Our forefathers and mothers came into everyday contact with dirt as a result of agriculture and animal husbandry [2]. This is still a prevalent new borns who crawl over soil and animal feces-rich surfaces, kids use their tongues to feel the world around them and their immunological and neural systems develop rapidly. Our findings may help to explain some of the modern-day pandemic diseases. Several studies have found considerable differences in the human gut microbiota between rural groups all over the world and those in a previous study, it was discovered that the cleanliness of a living environment has a considerable impact on the composition of the gut microbiota in mice. After looking at the elements in bedding material, it was first hypothesised that bacteria might play a key role in influencing the makeup of mouse gut microbiota. However, further research found that adding microbes to the bedding had only a minimal effect on the makeup of the dominant general [3].

As a result, the factors that influence gut microbial communities in a dirty environment remain unknown. The most evident effect of unsterile soil on the intestinal microbiota was the prevalence of the phylum actinobacteria in mice fed a high-fat diet [4]. According to Virtanen who studied the evolution of gut microbiota in infants from birth to three years, early-onset autoimmune disorders were widespread in but were actinobacteria were shown to be more abundant neonates before the age of Finland and Estonia, but no difference was seen beyond that. This could be due to babies consuming a high-protein, high-fat diet, as well as into greater contact with contaminated soil. The composition and organization of gut microbiota are shaped by sterile soil in the surrounding environment, according to our findings. At birth, the gut is sterile, and environmental microorganisms play a critical role in the formation of the bacterial community, environmental microbes have a limited ability to influence the composition and organization of dominant bacterial communities. The composition and structure of gut microbial communities of weaned were altered by sterile soil in the bedding, but not their diversity or richness, unsterile soil changed the microbiota' s makeup and organization, as well as its variety and richness.

These data show that a healthy diet helps a healthy gut micro biome. Our combined analysis of host soil and food adds to our understanding of the impact of diet on gut microbiota, as well as the potential impacts on colorectal cancer and immune system illnesses. We hypothesize that differences in bacterial flora reflect metabolite composition discrepancies. Consumption of red and

***Address for Correspondence:** George Tennyson, Department of Clinical Microbiology, University of Southern California, Los Angeles, California, USA, E-mail: georgetennyson@gmail.com*

Received: 07 January, 2023, Manuscript No. ANTIMICRO-23-86108; **Editor assigned:** 10 January, 2023, PreQC No. ANTIMICRO-23-86108 (PQ); **Reviewed:** 25 January, 2023, QC No. ANTIMICRO-23-86108; **Revised:** 11 April, 2023, Manuscript No. ANTIMICRO-23-86108 (R); **Published:** 19 April, 2023, DOI: 10.37421/2472-1212.2023.9.299

processed meat is linked to an increased risk of colorectal cancer and immune system disease, according to epidemiological research. Cancer and childhood asthma mortality rates are lowest in pastoral areas such as Tibet, where the local cuisine is high in beef and mutton. In contrast to current western lifestyles, Tibetans live in intimate proximity to the ground on a daily basis. To this goal, unsterile soil may change the makeup and structure of the microbiota, enhancing its diversity. The data also illustrate how non-sterile soil exposure affects the timing of bacterial community establishment. Early environmental exposure has a long-term impact on the gut microbiota, according to various studies, and the early microbiota produced the later microbiota. According to our findings, the microbiota of mice changed depending on whether they were exposed to unsterile soil before or after weaning [5].

Conclusion

The influence of the variation in gut microbiota between mice exposed to soil before birth and mice exposed to soil after weaning on the animal's health is still unknown. Our findings contribute to the growing amount of evidence that the hygiene hypothesis is correct. In the last few decades, human living conditions and habits have changed considerably in developed countries. People spend and have a very clean living environment. Several bacteria appear to have vanished from the modern human body while the prevalence of chronic inflammatory conditions, such as atopic diseases, has risen dramatically. Our findings suggest that a lack of contact with soil and soil microorganisms is a major contributor to a wide range of diseases. Both our living environment and our food can be easily modified. This technology could be used to build disease-prevention diets as well as a novel, simple strategy to intervene in the human gut microbial ecology. Nonetheless, a few questions remain unsolved. More research will be done to see how the microbiota of humans is affected by soil from the host environment, whether by swallowing, body mucosae, or other methods. Similarly, it must be determined whether different types of soil or soil microorganisms have distinct effects on gut micro ecology.

References

1. Penders, John, Carel Thijs, Cornelis Vink and Foekje F. Stelma, et al. "Factors influencing the composition of the intestinal microbiota in early infancy." *Pedia* 118 (2006): 511-521.
2. Adlerberth, I., and A. E. Wold. "Establishment of the gut microbiota in Western infants." *Acta Paedi* 98 (2009): 229-238.
3. Dominguez-Bello, Maria Gloria, Martin J Blaser, and Ruth E Ley, et al. "Development of the human gastrointestinal microbiota and insights from high-throughput sequencing." *Gastroenterology* 140 (2011): 1713-1719.
4. Penders, John, Kerstin Gerhold, Carel Thijs and Kurt Zimmermann, et al."New insights into the hygiene hypothesis in allergic diseases: Mediation of sibling and birth mode effects by the gut microbiota." *G Micr* 5 (2014): 239-244.
5. Gaskins, H. Rex, Jennifer A. Croix, Noriko Nakamura and Gerardo M. Nava. "Impact of the intestinal microbiota on the development of mucosal defense." *Clin Infe Dise* 46 (2008): 80-86.

How to cite this article: Tennyson, George. "Digestive Commensal Bacteria, Two Factor Theory, and Indeed the Influence of Intestinal Microbiota." *J Antimicrob Agents* 9 (2023): 299.