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## Microbiome and chronic disorders

**Reza Nassiri**

Michigan State University, USA

The research and clinical interests for microbiota formerly called the normal flora has grown tremendously in the recent years. The large-scale dynamics of the microbiome can be described by many of the tools and observations used in the study and management of chronic disorders. Microbiome and metagenome have important functions in health and disease; their exploration is continuous to better understand human health and genetics, especially the announcement made by the U.S. National Microbiome Initiative. It is now understood that complex microbial communities can influence the pathology chronic diseases, which may have implications for disease diagnosis, management and prognosis. Currently, studies focus on investigations of variant microbiome communities such as cutaneous, gastric, colonic/colorectal, inflammatory bowel diseases, obesity and metabolic disease just to list few. The key in application of microbiome in chronic disorders is the microbial restoration, which is an appropriate extension of the probiotic strategy; the microbial transplantation has received much interest in the recent years aiming at generating intact microbial community in a diseased person. *C. difficile* recurrent infections and microbial restoration is a remarkable example of the application of microbial transplantation. Therefore, it appears the future of microbiome therapeutic modalities is a targeted approach which may become embedded in the precision management chronic disorders. Such an approach relies on host factors that may influence the overall individual health as well as response to treatment modalities (e.g., microbial restoration). However, another key factor to such a response is host genetics. Advances in technology especially in nucleic acid sequencing and cultured based microbiology has helped the scientific community to better examine the new roles of microbes in both health and diseases. In summary, advances in microbial phenol-typing and metabolic profiling provide a new insight for developing novel therapies for chronic disease conditions. Application of the plantation of microbiome communities may also help to prevent a range of chronic disorders.

Reza.Nassiri@hc.msu.edu