

## Theory of Negative Trigger: The Contract between Oral Probiotics and Immune System

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**Abstract :** Identifying the direct allergy cause that can be easily mitigated is the foundation to stop the allergy epidemic that has been started in the seventies. It has confirmed that the personal and social hygiene practices are associated with the allergy prevalence. But direct causes have been found, and proposed translational measures have not been effective. This study, assisted by a particular case of allergies, has seen the direct cause of allergies, developed a valid test resulted in lasting relief for allergies, and constructed theory describing general relationship between microbiota and host immune system. Saliva samples were collected from a subject for three years during which time the person experienced yearlong allergy, seasonal allergy, and remission of allergy symptoms. Bacterial DNA was extracted and 16S rRNA genes were profiled with Illumina sequencing technology. The analyzing results indicate that the possible direct cause of allergy is the lacking probiotic bacteria in the oral cavity, such as genera Streptococcus and Veilonella, that can produce metabolites to pacify immune system. Targeted promotion of those bacteria with a compound designed for them, has led to lasting remissions of allergic rhinitis. During the development of the translational measure, the subject's oral biofilm was completely destructed by a moderate fever due to an unrelated respiratory infection. The incident not only facilitated the development of the heat based microbiota reseeding procedure but also indicated a possible natural switch that subsequently increases the efficacy of the immune system previously restrained by metabolites from microbiota. These results lead to the proposal of a Theory of Negative Trigger (TNT) to describe the relationship between oral probiotics and immune system, in which probiotics are the negative trigger that will release the power of immune system when removed by fever or modern lifestyles. This study could open doors leading to further understanding of how the immune system functions under the influence of microbiota as well as validate simple traditional practices for healthy living.

**Keywords :** oral microbiome, allergy, immune system, infection

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