

Altered Gut Microbiota Contributes to the Onset of Psoriasis and Autoimmune Diseases

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Psoriasis is a chronic autoimmune disease that results in scaly and itchy areas of the body. The underlying pathomechanism of psoriasis remains unclear, but it is known to involve a complex interaction between the innate and adaptive immune system, wherein white blood cells interact with dendritic cells, macrophages, and keratinocytes, resulting in the overproduction of secreted cytokines. These cytokines result in the production of various antibodies, leading to the hyperproliferation of skin cells. Psoriasis affects patients beyond the skin's barrier, as they are at increased risk of developing numerous autoinflammatory and autoimmune diseases including type 2 diabetes, cardiovascular disease, and hypertension. Dysbiosis is the disruption in homeostasis and longevity of the gut lumen, compromising skin physiology. To understand the potential relationship between dysbiosis and psoriasis, this review argues that it is important to consider the immune response of the body. We found that healthy skin and psoriatic skin vary in their bacterial composition. However, studies showed that psoriatic lesions have an abundance of "bacterial load" compared to controls, that is the presence of bile, pancreatic fluids, immunoglobulin A, and the prevalence of gut-associated lymphoid tissue. In sum, we find a connection between autoimmune diseases like psoriasis and gut microbiota, suggesting that innovative therapies, such as fecal microbiota transplants and probiotics administration which can restore the bacteria in the gut, might be effective in treating autoimmune diseases.