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Does microbiota composition affect thyroid homeostasis?

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Abstract

The intestinal microbiota is essential for the host to ensure digestive and immunologic homeostasis. When microbiota homeostasis is impaired and dysbiosis occurs, the malfunction of epithelial barrier leads to intestinal and systemic disorders, chiefly immunologic and metabolic. The role of the intestinal tract is crucial in the metabolism of nutrients, drugs, and hormones, including exogenous and endogenous iodothyronines as well as micronutrients involved in thyroid homeostasis. However, the link between thyroid homeostasis and microbiota composition is not yet completely ascertained. A pathogenetic link with dysbiosis has been described in different autoimmune disorders but not yet fully elucidated in autoimmune thyroid disease which represents the most frequent of them. Anyway, it has been suggested that intestinal dysbiosis may trigger autoimmune thyroiditis. Furthermore, hypo- and hyper-thyroidism, often of autoimmune origin, were respectively associated to small intestinal bacterial overgrowth and to changes in microbiota composition. Whether some steps of this thyroid network may be affected by intestinal microbiota composition is briefly discussed below.

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