



## Regulation of autoimmune diabetes by gut microbiota

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**Introduction:** Autoimmune diabetes (AD) is an insulin deficiency disorder resulted from cell-mediated damage of islet beta-cells. Prevalence of AD has been rapidly increased in past years. The role of gut microbiota in pathogenesis of diabetes has been shown. In this Study effects of the gut microbiota on AD have been investigated.

**Methods:** Papers published between years 1970 and 2016 were investigated and studied regularly in Medline. The key words "Autoimmune, diabetes, gut and microbiota" were used. The correlated articles were reviewed and summarized.

**Results:** Various factors existing in gut like enteroviral infections, nutrients, prenatal and early life interaction to peripheral contaminants like air toxins and dioxins which have adversarial effects on the immune system could cause AD. Furthermore a strong association between some gut immunomodulatory microbiomes and AD was shown. Regulatory T cells and macrophages could inhibit lipopolysaccharide-induced inflammation in the intestine with reductions of inflammatory mediators. Besides the anti-diabetic properties of proanthocyanidins (PAs), the utmost rich flavonoids in the human diet has been attributed to its immune cells modification. Important differences in the gut microbiome between autoimmune and healthy children have been determined.

**Conclusion:** Gut microbiome has a key effect on immune cells in intestinal lamina propria. Restoration of gut microbiome composition and products, such as lipopolysaccharides, alimental interferences and immune regulation may be promising therapeutic ways in AD patients. Regulation of gut immune system by re-establishment of gut microbiome might be of prospective inventive therapy for AD.



## تأثیر فلور میکروبی روده بر دیابت خود ایمن

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محور: دیابت

**زمینه و هدف:** Autoimmune diabetes (AD) is an insulin deficiency disorder resulted from cell-mediated damage of islet beta-cells. Prevalence of AD has been rapidly increased in past years. The role of gut microbiota in pathogenesis of diabetes has been shown. In this Study effects of the gut microbiota on AD have been investigated.

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**نتیجه گیری:** Gut microbiome has a key effect on immune cells in intestinal lamina propria. Restoration of gut microbiome composition and products, such as lipopolysaccharides, alimental interferences and immune regulation may be promising therapeutic ways in AD patients. Regulation of gut immune system by re-establishment of gut microbiome might be of prospective inventive therapy for AD.

کلمات کلیدی: Autoimmune, Diabetes, Gut, Microbiota