

Biodiversity intervention enhances immune regulation and health-associated commensal microbiota among daycare children ^[1]

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AVAILABILITY

Access online ^[2]

Excerpts from abstract

As the incidence of immune-mediated diseases has increased rapidly in developed societies, there is an unmet need for novel prophylactic practices to fight against these maladies. This study is the first human intervention trial in which urban environmental biodiversity was manipulated to examine its effects on the commensal microbiome and immunoregulation in children. We analyzed changes in the skin and gut microbiota and blood immune markers of children during a 28-day biodiversity intervention. Children in standard urban and nature-oriented daycare centers were analyzed for comparison. The intervention diversified both the environmental and skin Gammaproteobacterial communities, which, in turn, were associated with increases in plasma TGF- β 1 levels and the proportion of regulatory T cells. The plasma IL-10:IL-17A ratio increased among intervention children during the trial. Our findings suggest that biodiversity intervention enhances immunoregulatory pathways and provide an incentive for future prophylactic approaches to reduce the risk of immune-mediated diseases in urban societies.

Related link: A forest-based yard improved the immune system of daycare children in only a month ^[3]

Region: Europe ^[4]

Tags: health and safety ^[5]

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Source URL (modified on 10 Nov 2020): <https://childcarecanada.org/documents/research-policy-practice/20/11/biodiversity-intervention-enhances-immune-regulation-and>

Links

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