

T cell population altered in patients with type 2 diabetes and/or obesity

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As obesity rates rise, so does the incidence of type 2 diabetes (T2D). In obese individuals and those with obesity-induced T2D, there is an accumulation of immune cells within adipose tissue that results in a low level of chronic inflammation. Gut microbial populations are also altered in these individuals. Weight loss, either through diet or gastric bypass, improves T2D-associated symptoms and shifts the gut microbiota.

A new study in the *Journal of Clinical Investigation* reports that a population of T cells known as mucosal-associated invariant T (MAIT) cells is altered in patients with T2D and/or severe obesity. MAIT cells are an innate-like T [cell population](#) that recognizes bacterial ligands and is enriched in mucosal and inflamed tissues. Agnès Lehuen and colleagues found that compared to healthy controls, the circulating MAIT cell population is dramatically reduced in individuals with T2D and those that are severely obese.

However, MAIT cells were abundant in adipose tissues of these patients and exhibited an inflammatory phenotype. In obese patients, bariatric surgery-induced [weight loss](#) restored circulating MAIT cells and reduced inflammatory cytokine production in these cells.

The results of this study suggest that MAIT cell abnormalities may contribute to obesity-associated metabolic alterations.

More information: Mucosal-associated invariant T cell alterations in obese and type 2 diabetic patients, *J Clin Invest.* [DOI: 10.1172/JCI78941](https://doi.org/10.1172/JCI78941)

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