

T cell discovery shows promise for Type 1 diabetes treatment

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A research team from the University of British Columbia and the Child & Family Research Institute (CFRI) at BC Children's Hospital has identified the role of a type of T cell in type 1 diabetes that may lead to new treatment options for young patients.

Also known as juvenile diabetes, type 1 diabetes is an autoimmune disease primarily affecting children and young adults. In patients with type 1 diabetes, the body attacks itself by destroying insulin-producing cells in the pancreas that regulate glucose, or blood sugar.

Led by Rusung Tan, a Pathology professor in the UBC Faculty of Medicine and co-head of the Immunity in Health and Disease research cluster at CFRI, the research team has identified the increased presence of Th17 cells, a type of T cell discovered in 2005, in children newly diagnosed with type 1 diabetes.

"[T cells](#) are white blood cells and key members of the immune system that control infections," says Tan, who is also a member of the Department of Pathology & Laboratory Medicine at BC Children's Hospital and a senior scholar of the Michael Smith Foundation for Health Research. "In healthy individuals, Th17 cells provide a strong defence against bacteria and viruses by guiding the immune system to strongly attack infected targets within our bodies."

However, Th17 has been associated with other autoimmune diseases such as Crohn's disease, which suggests they can play a harmful role.

Treatments designed to block Th17 cells are in clinical trials for these diseases.

"The elevated levels of Th17 cells in [type 1 diabetes](#) patients suggest that these cells may also play a key role in the early development of this disease in young patients," says Tan. "This discovery opens the door to new treatments for childhood [diabetes](#) that target Th17 [cells](#)."

More information: The findings are published in the current issue of the *Journal of Immunology*.

Provided by University of British Columbia

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