

Short-term intestinal parasite infection triggers specific cytokines that can prevent the development of type 1 diabetes

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(Medical Xpress) -- Short-term infection with intestinal worms may provide long-term protection against type I diabetes (T1D), suggests a study conducted by William Gause, PhD, and colleagues at the University of Medicine and Dentistry of New Jersey-New Jersey Medical School. The research has been published in the journal *Mucosal Immunology*.

The incidence of T1D—a form of the disease in which the body's own immune [cells](#) attack the insulin-producing islet cells of the pancreas—is relatively low in developing countries. One explanation for this phenomenon is the prevalence of chronic intestinal worm infections, which dampen the self-aggressive T cells that cause [diabetes](#) and other autoimmune diseases. Understanding how T cells are tamed during worm infection could lead to new strategies to control these inflammatory diseases.

Dr. Gause's team, including Pankaj Mishra, PhD, in his laboratory, and David Bleich, MD, now shows that a two-week infection with the intestinal worm *H. polygyrus* (cured using oral drugs) prompted T cells to produce the cytokines interleukin (IL)-4 and IL-10, which acted independently to provide lasting protection against T1D in mice. A similar approach using eggs from another parasitic worm, *Trichuris suis*, is currently being tested in clinical trials in patients with Crohn's disease and multiple sclerosis. The studies presented in this paper now provide

potential mechanisms explaining the potency of parasite-induced control of inflammatory diseases.

Provided by University of Medicine and Dentistry of New Jersey

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