

Diarrhea disorder Giardiasis caused by two different parasite species

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(PhysOrg.com) -- Researchers from Uppsala University and the Karolinska Institute have found major genetic differences between the human variants of the intestinal parasite *Giardia intestinalis*. Sequencing of the genomes using the latest technologies shows that people are infected by two different *Giardia* species, according to a study published in the journal *PLoS Pathogens* today.

Giardia intestinalis causes 250 million [diarrhea](#) cases in humans (Giardiasis) every year and a huge number of animals infections, but little is known about the disease. It is known that there are seven main genetic groups (A-G) of the parasite. New research indicates that the different variants can infect different hosts and lead to different symptoms.

Variants A and B can infect humans, and B is the most common in humans. The scientists sequenced the genome of a B parasite that has been used in experimental infections and compared that genome with a previously sequenced A variant. Major genetic differences were identified, above all in [genes](#) that are important for avoiding the immune defense system. Certain genes are specific to the respective variants, and differences have been found in most of the proteins in the variants. The differences are so great that the variants can be different species.

"The identification of such major genetic differences between *Giardia* [parasites](#) that infect humans changes how we regard the infection. This will be of great importance for the development of new methods for the

diagnosis and treatment of Giardiasis," says Professor Staffan Svärd at the Department of Cell and Molecular Biology, Uppsala University.

Provided by Uppsala University ([news](#) : [web](#))

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