

The gut microbiome in polycystic ovary syndrome and its association with metabolic traits

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University of Tartu researchers and their collaborators from Finland and Spain investigated the relationship between the gut microbiome and polycystic ovary syndrome. Their study revealed that women with polycystic ovary syndrome in their late reproductive years have significant microbial changes in the gut related to their metabolic health.

Polycystic ovary syndrome is a complex hormonal disorder affecting up to 18% of women in reproductive age. Women with polycystic ovary syndrome often have irregularities in their [menstrual cycle](#), excess of male sex hormones and polycystic ovarian morphology. It is associated with a variety of metabolic derangements, including obesity, insulin resistance and type 2 diabetes. The exact cause of polycystic ovary syndrome is unknown but it is believed to be multifactorial where genetics, lifestyle and possibly the [gut microbiome](#) could have a role.

This study aimed to assess whether the gut microbiome is associated with polycystic ovary syndrome in late fertile age women. "Our study population consisted of a subset of females from the longitudinal Northern Finland Birth Cohort 1966, which includes all expected births in 1966 in the two northernmost provinces of Finland," said the first author of the paper Kreete Lüll.

Results show that there are no significant differences in gut microbiome between women who have polycystic ovary syndrome and healthy women in their late fertile age. "Yet, we found differences between the microbial diversity and hormones," said Lüll. Furthermore, the results show that there are differences in microbiome profile in [women](#) with

polycystic ovary syndrome in a pre-diabetic state compared to those with normal glucose tolerance.

"Although this study shed some light on the causes of polycystic ovary syndrome, further research with a larger sample set among [younger women](#) is needed in order to clarify the possible link between the gut microbiome, metabolites and development of [polycystic ovary syndrome](#)," added the last author, Senior Research Fellow of Molecular Biomedicine Elin Org.

More information: Kreete Lüll et al, The Gut Microbiome in Polycystic Ovary Syndrome and its Association with Metabolic Traits, *The Journal of Clinical Endocrinology & Metabolism* (2020). [DOI: 10.1210/clinem/dgaa848](#)

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