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**Landscape of the gut mycobiome dynamics during pregnancy and its relationship with host metabolism and pregnancy health**

Fu Y, Gou W, Wu P, et al. [Landscape of the gut mycobiome dynamics during pregnancy and its relationship with host metabolism and pregnancy health.](https://gut.bmj.com/content/73/8/1302) Gut 2024; 73: 1302-1312. doi: 10.1136/gutjnl-2024-332260.

Pregnancy involves several physiological changes, including immunological, metabolic, and endocrine system alterations. With growing scientific interest in microbiota, studies have shown dynamic changes in the gut microbiological profile during pregnancy.

This prospective cohort study, conducted in the Tongji-Huaxi-Shuangliu Birth Cohort with 4800 patients, examined the dynamic composition of the mycobiome during pregnancy across various trimesters and the complex interplay between gut mycobiome, pregnancy health, and host metabolomics.

Results indicated that age, parity, antibiotic use, and dietary factors (steamed bread, egg, fruits, and tea consumption) significantly impacted mycobiome composition. The three most commonly seen fungal enterotypes were Aspergillus, Saccharomyces, and Candida. The predominance of these phenotypes was also influenced by dietary intake. There is a global shift in the mycobiome as pregnancy progresses, contrasting with the relatively stable gut bacterial composition. These changes are more pronounced in women with preconceptual obesity. Generally, there is a loss of fungi as pregnancy progresses. Similar to the mycobiome, the metabolome undergoes significant changes during pregnancy, closely associated with mycobiome composition and affected by preconceptual weight status.

The gut mycobiome also affects pregnancy outcomes. The study showed positive associations between Mucor and gestational diabetes mellitus (GDM), and Wallemia and pregnancy-induced hypertension. Mucor was also identified as a risk factor for macrosomia, independent of GDM.

This study provides remarkable insights into the gut mycobiome and its impact on maternal homeostasis during pregnancy. It paves the way for future research and interventions that may positively alter pregnancy outcomes, emphasizing the importance of maintaining a healthy preconceptual weight.