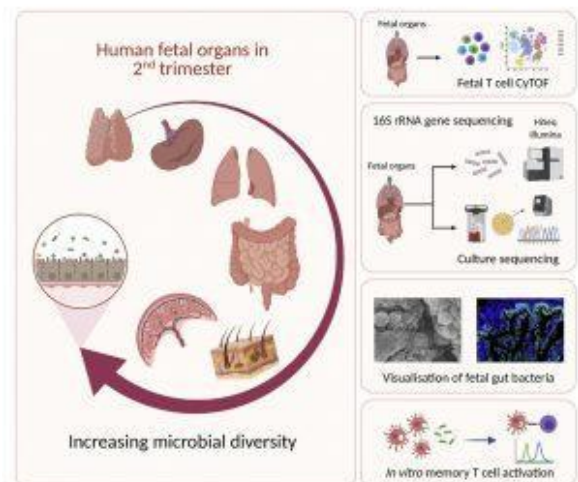
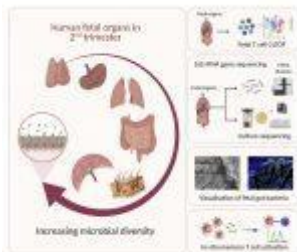


# Microbes prime foetal immune cells during early human development



Graphical Abstract:  
Microbial exposure during early human development primes fetal immune cells  
(Source Mishra, A. et al)

The human immune system develops early in gestation, however, not much is known about how foetal immune responses are primed.

Researchers studied foetus' exposure to microbial agents in utero and how they contribute to activation of memory T cells in tissues.

Mishra, A. et al, “*profiled microbes across fetal organs using 16S rRNA gene sequencing and detected low but consistent microbial signal in foetal gut, skin, placenta, and lungs in the 2nd trimester of gestation*”. They found live bacterial strains including *Lactobacillus sp.* and *Staphylococcus sp.* which activated memory T cells in the foetal mesenteric lymph nodes. This suggests that microbes do play a role in foetal immune-priming.

The researchers also “*visualized discrete localization of bacteria-like structures and eubacterial-RNA within 14th weeks fetal gut lumen*” using SEM and RNA- in situ hybridisation. These results indicate that live microbes are detectable in foetal organs during the second trimester of pregnancy.

In summary, the study suggests that microbes prime the foetal immune system which has implications on how the immune system develops and may be essential to neonatal and adult pathogenic protection.

Find out more– [Immune Regulation in Pregnancy](#)

**Journal Article: Mishra et al. 2021. [Microbial exposure during early human development primes fetal immune cells](#). Cell.**

*Summary by Bonamy Holtak*