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Maternal health and the placental microbiome

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1 **Review: Maternal health and the placental microbiome**

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13 Over the past decade, the role of the microbiome in regulating metabolism, immune function and
14 behavior in humans has become apparent. It has become clear that the placenta is not a sterile
15 organ, but rather has its own endogenous microbiome. The composition of the placental
16 microbiome is distinct from that of the vagina and has been reported to resemble the oral
17 microbiome. Compared to the gut microbiome, the placental microbiome exhibits limited
18 microbial diversity. This review will focus on the current understanding of the placental
19 microbiota in normal healthy pregnancy and also in disease states including preterm birth,
20 chorioamnionitis and maternal conditions such as obesity, gestational diabetes mellitus and
21 preeclampsia. Factors known to alter the composition of the placental microbiota will be
22 discussed in the final part of this review.

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25 **Key words:** placenta, microbiome, pregnancy, preterm delivery, probiotics

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