

Understanding Recurrent Miscarriage: Identification of Root Causes

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Prevalence of miscarriage

23M

miscarriage cases globally^[1]

1 in 5

pregnancies end in miscarriage^[1]

200-250k

cases annually in the UK^[1]

Many cases go **unrecorded** due to **system gaps** and **cultural stigma**^[1]

Clinical challenges

Miscarriage lacks a clear definition, yet it's treated as **binary disorder**^[2,3]

5 – 8 % ↑ increased risk of future loss after each additional miscarriage^[1-3]

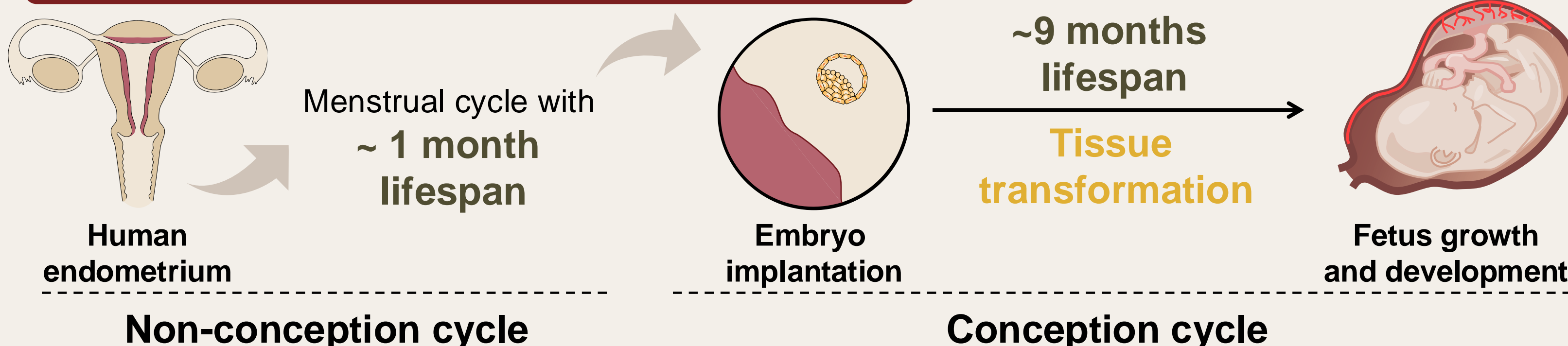
Limited evidence-based tests and treatments^[1,2]

The recurrent miscarriage risk remains **UNKNOWN**

Impacts on individuals and society

- **Emotional distress:** grief, anxiety & depression^[1,2]
- **Physical health risk:** increased risk of obstetrical complications^[1,2]
- **£471M** per year for short-term national economic cost^[1]

Biology of the endometrium and hypothesis

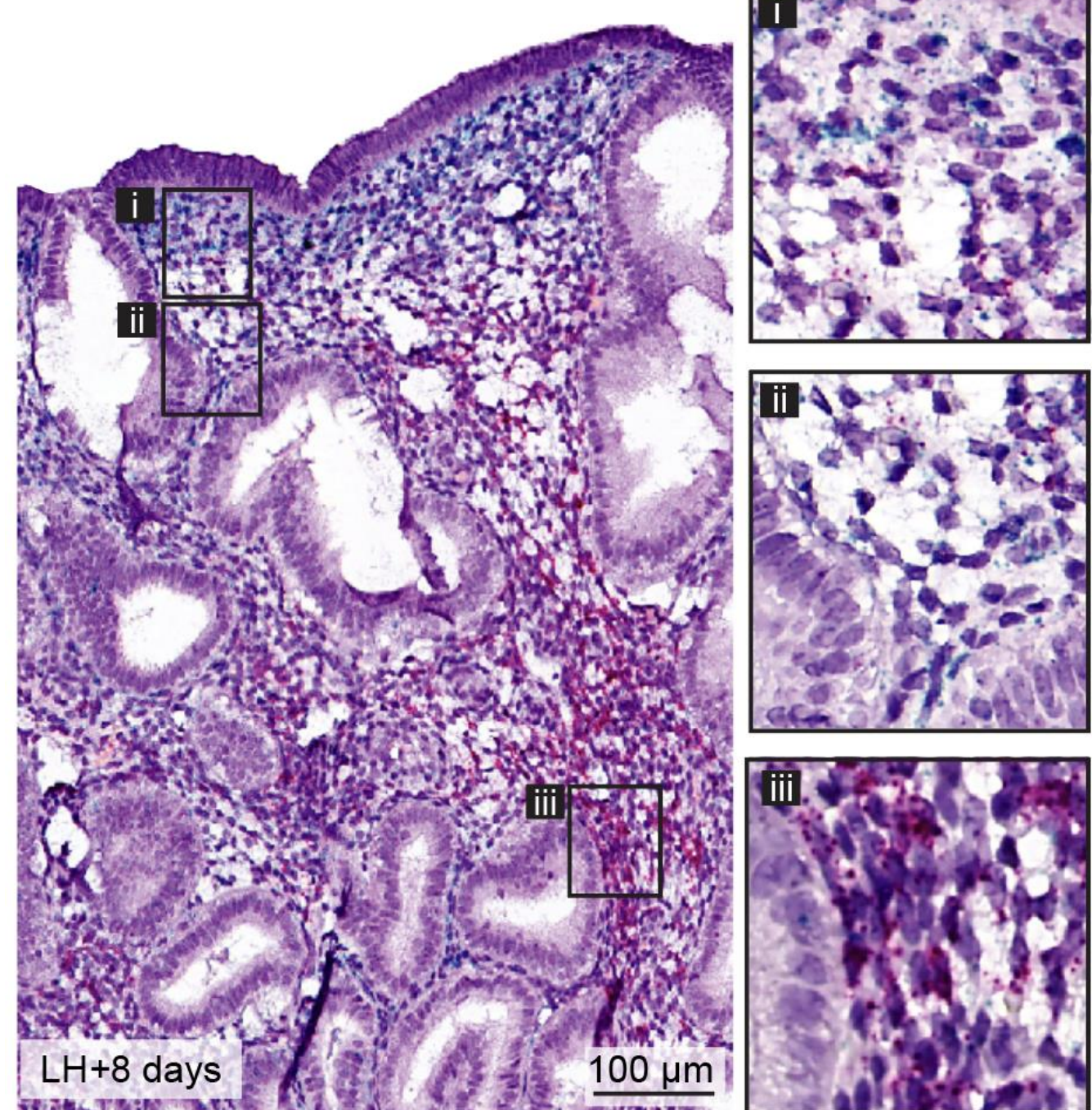
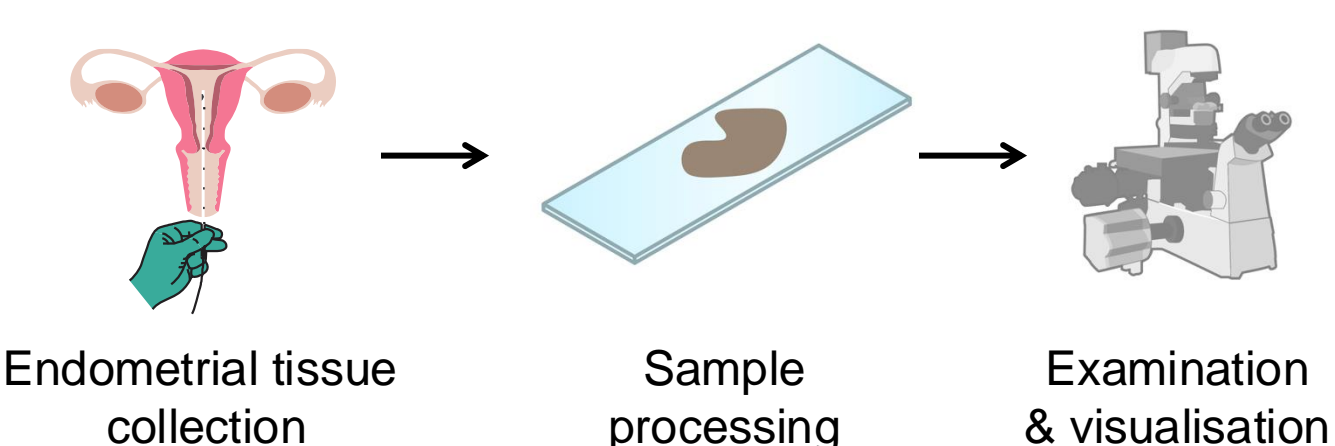


We suggest that **defective tissue transformation process causes miscarriage.**

“We aim to develop a novel pre-pregnancy diagnostic to identify defective tissue transformation process.”

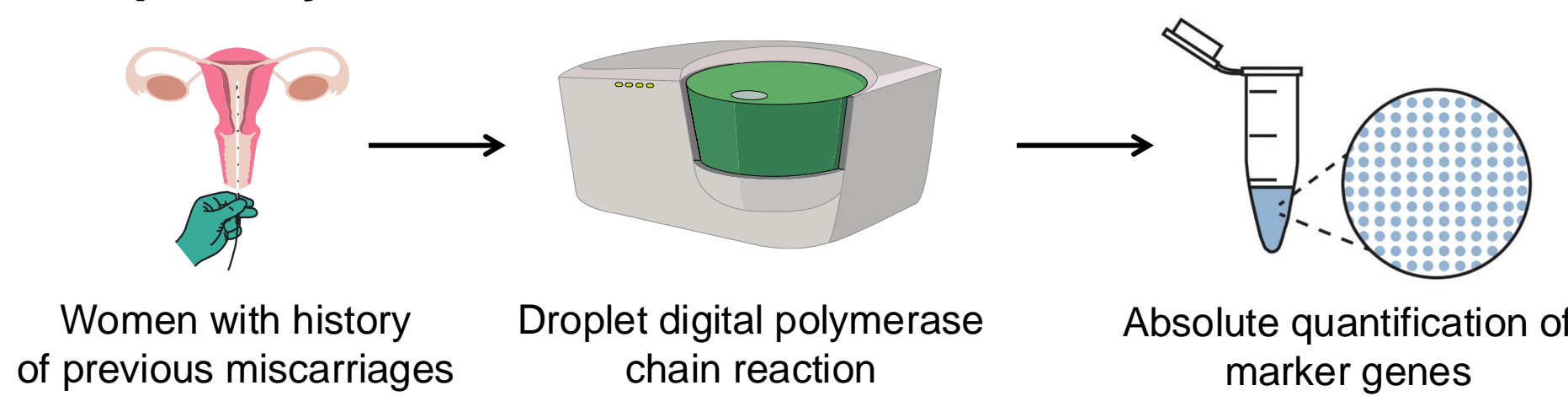
Our solution and findings

A Biomarker identification

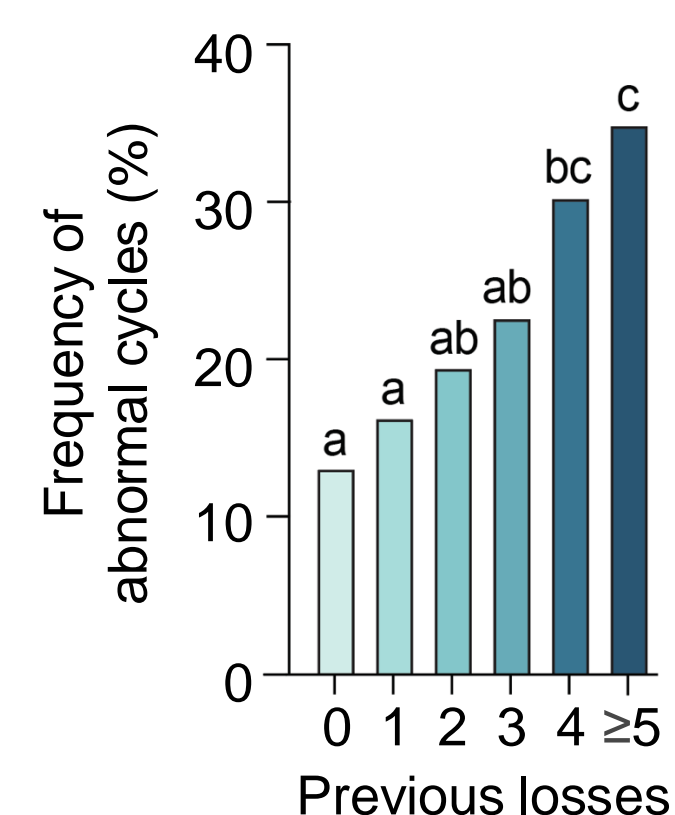


Spatially distributed supporting cells and embryo-implantation supporting cells in the endometrium.

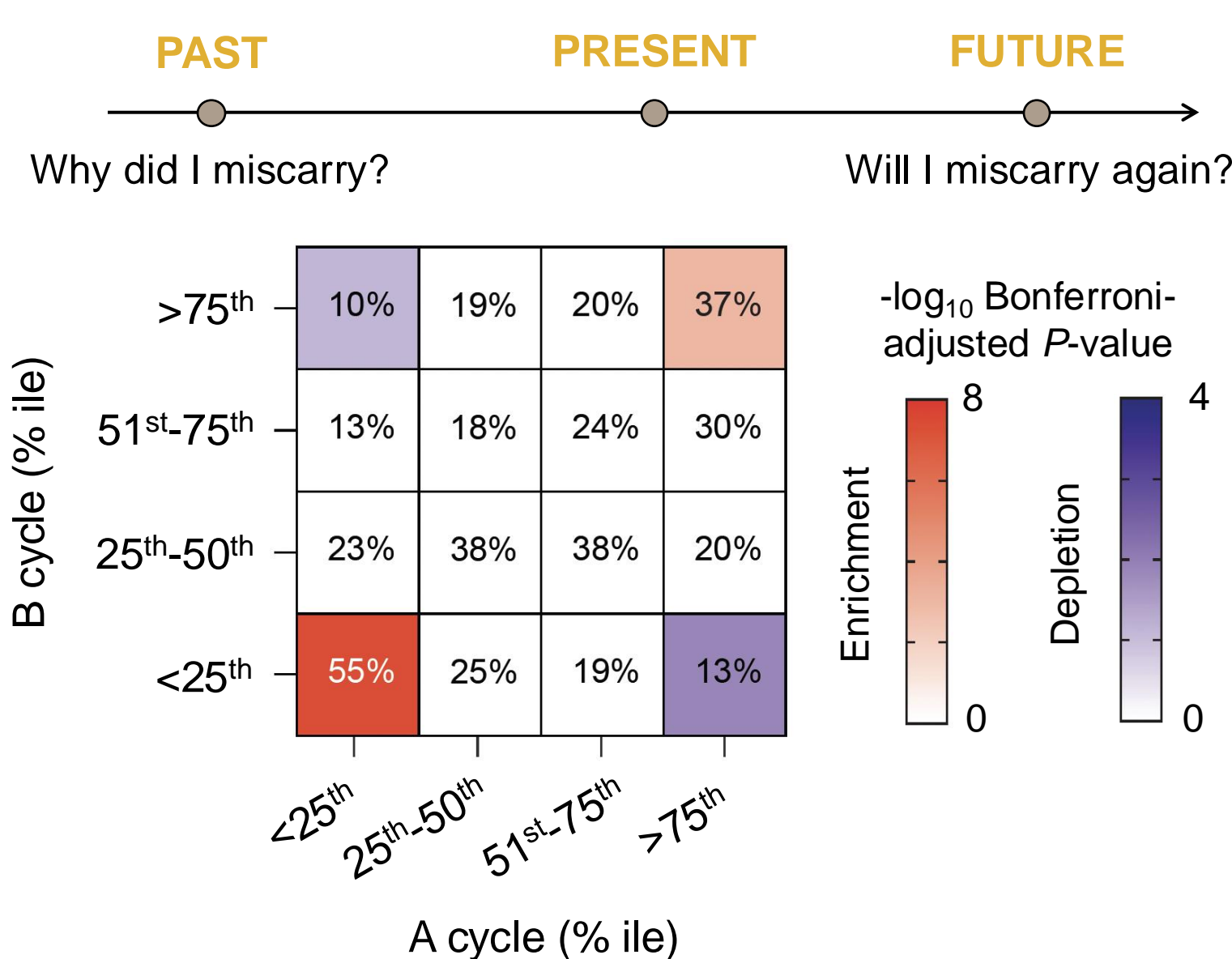
B Susceptibility risk test



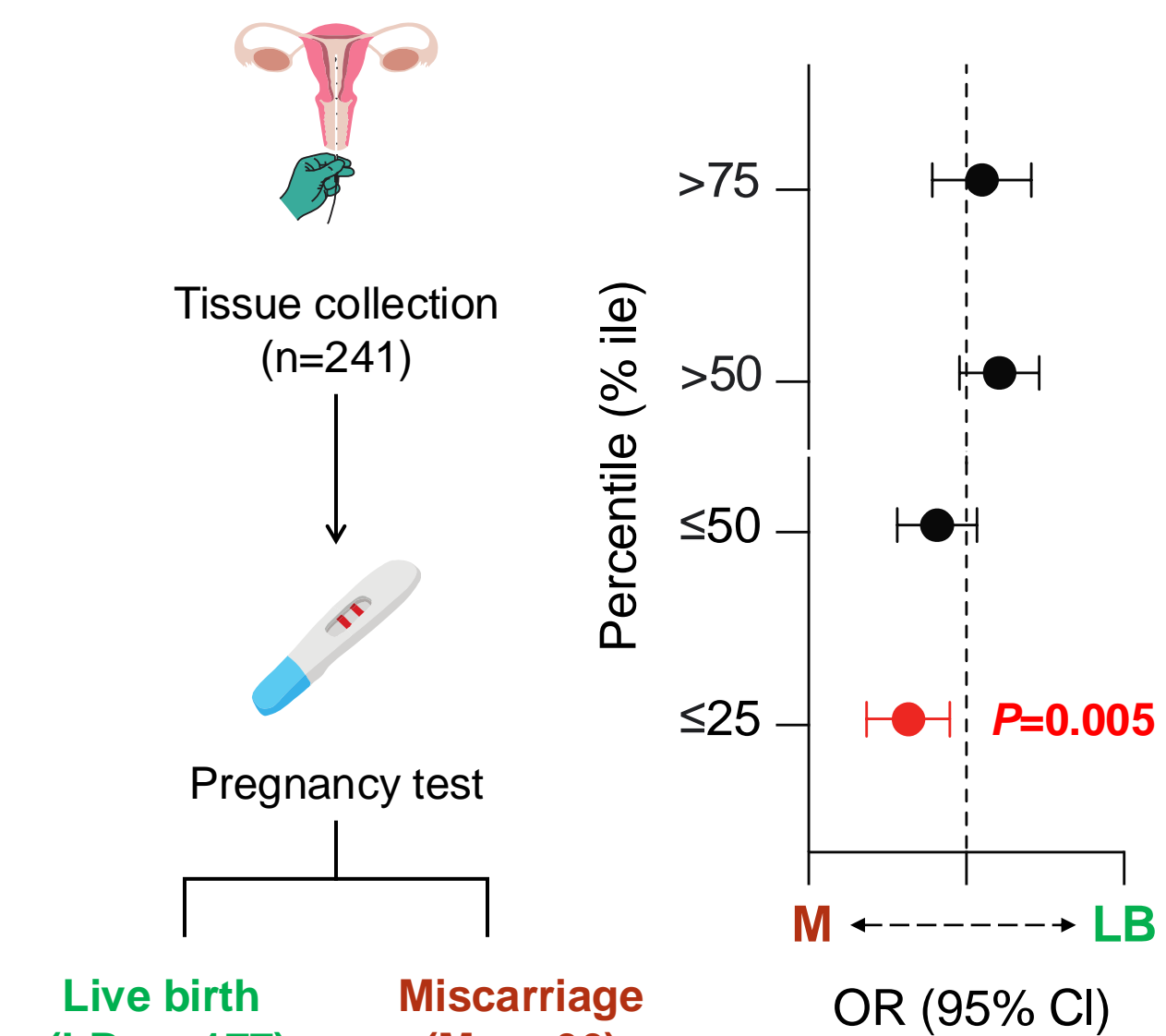
A step-wise increase of abnormal cycle frequency with an increased number of previous miscarriages.



C Cycle variability test



D Prognostic test



Clinical impact: We developed a world first diagnostic to assess endometrial transformation before conception.