# FELICITY Studie

## Epigenetic Alterations

- **Prenatal Stress**
  - Immune
  - Nervous
  - Endocrine

## Preterm Birth

- **Metabolic Disturbance**

## Altered Behaviour

### Study Design

<table>
<thead>
<tr>
<th>Event</th>
<th>Days of Experiment</th>
<th>Stages of Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>0</td>
<td>28-40 weeks</td>
</tr>
<tr>
<td>End</td>
<td>548</td>
<td>2-7 and 180</td>
</tr>
</tbody>
</table>

### Measurements of Fetal/Infant Health

<table>
<thead>
<tr>
<th>Group</th>
<th>0: Cortisol in hair</th>
<th>1: Maternal blood</th>
<th>0: Cord blood</th>
<th>0: Saliva</th>
<th>0: Stool</th>
<th>0: Placenta</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Healthy&quot; (n=65) or &quot;stressed&quot; (n=65) feto</td>
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</tbody>
</table>

### Outcomes

- 25% drop out -> n=49
- 25% drop out -> n=37

- **fECS/CTG or Fingros**: ↑
- **QIN breastfeeding/depression symptoms**: ↑
- **BSID**: ↑

**Notes:**
- PSS-10: Cohen perceived stress scale
- fECS: fetal electrocardiogram
- CTG: cardiotocography
- QIN: questionnaire
- BSID: Bayley scales of infant development
Prospective clinical cohort.

- t-a fECG: transabdominal fetal electrocardiogram (ECG, intermittently throughout the study)
- mECG: maternal ECG (intermittently throughout the study, see arrows)
- Psychological profiling in mothers will consist of
  - Prenatal stress test PSS-10 (Cohen perceived stress scale, 30-34 weeks of gestation)
  - State-Trait Anxiety Inventory (STAI) 2-4 weeks later (prior to birth)
  - STAI and Edinburg Postnatal Depression Scale test (2nd and 3rd observations)
- BSID-III: Bayley Scale III of Infant Development test (3rd observation)
- Cord blood: arterial or venous umbilical cord blood (at birth)
- Saliva: saliva sample for DNA extraction and epigenetic analyses (at birth and 3rd observation)
- Placenta: IHC, microbiome: 16S rDNA and metagenomics (at birth)
- Stool: meconium, first stool (at birth)