**Patient identification:**

- **Included:**
  - BMI at or above 29, singleton pregnancy, aged 18 years or more

Baseline / screening measurement + consent
Until 19+6 days gestation

Randomisation

- Vitamin D Intervention (1600 IU/day)
- Lifestyle coaching intervention

- Measurement 2 + ultrasound
  - 24-28 weeks
  - +1-3 weeks F2F
  - +2-4 weeks F2F
  - \( \approx 30 \) weeks F2F

- Measurement 3 + ultrasound
  - 35-37 weeks
  - +2-4 weeks F2F

- Excluded:
  - [1] pre-existing diabetes; [2] not able to walk at least 100meters safely; [3] require complex diets; [4] have chronic conditions; [5] have significant psychiatric disease; [6] are unable to speak major language of the country of recruitment; [7] past or current abnormal calcium metabolism*

- Included:
  - BMI at or above 29, singleton pregnancy, aged 18 years or more

- Excluded:
  - GDM, hypercalciuria*, hypercalcaemia*