

METABOLISM TRACKING DURING PREGNANCY: TOOLS FOR UNLOCKING OUR KNOWLEDGE OF THE PLACENTA

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HANDHELD METABOLISM TRACKING

Metabolism changes greatly during pregnancy. Despite an increased need for calories, excessive gestational weight gain affects many women, contributing to adverse maternal and child health outcomes. Real-time tracking of health parameters may improve prenatal health.

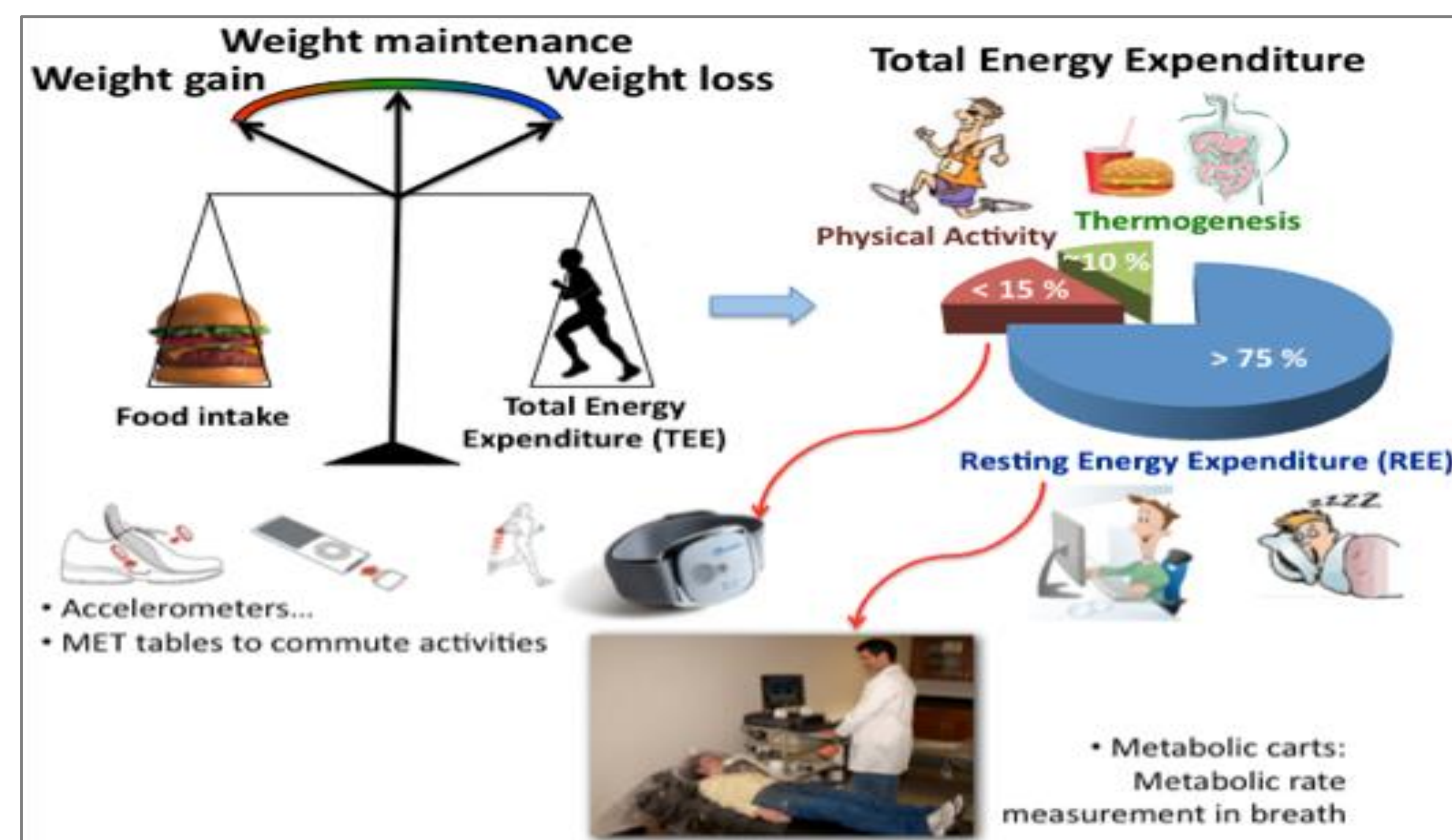
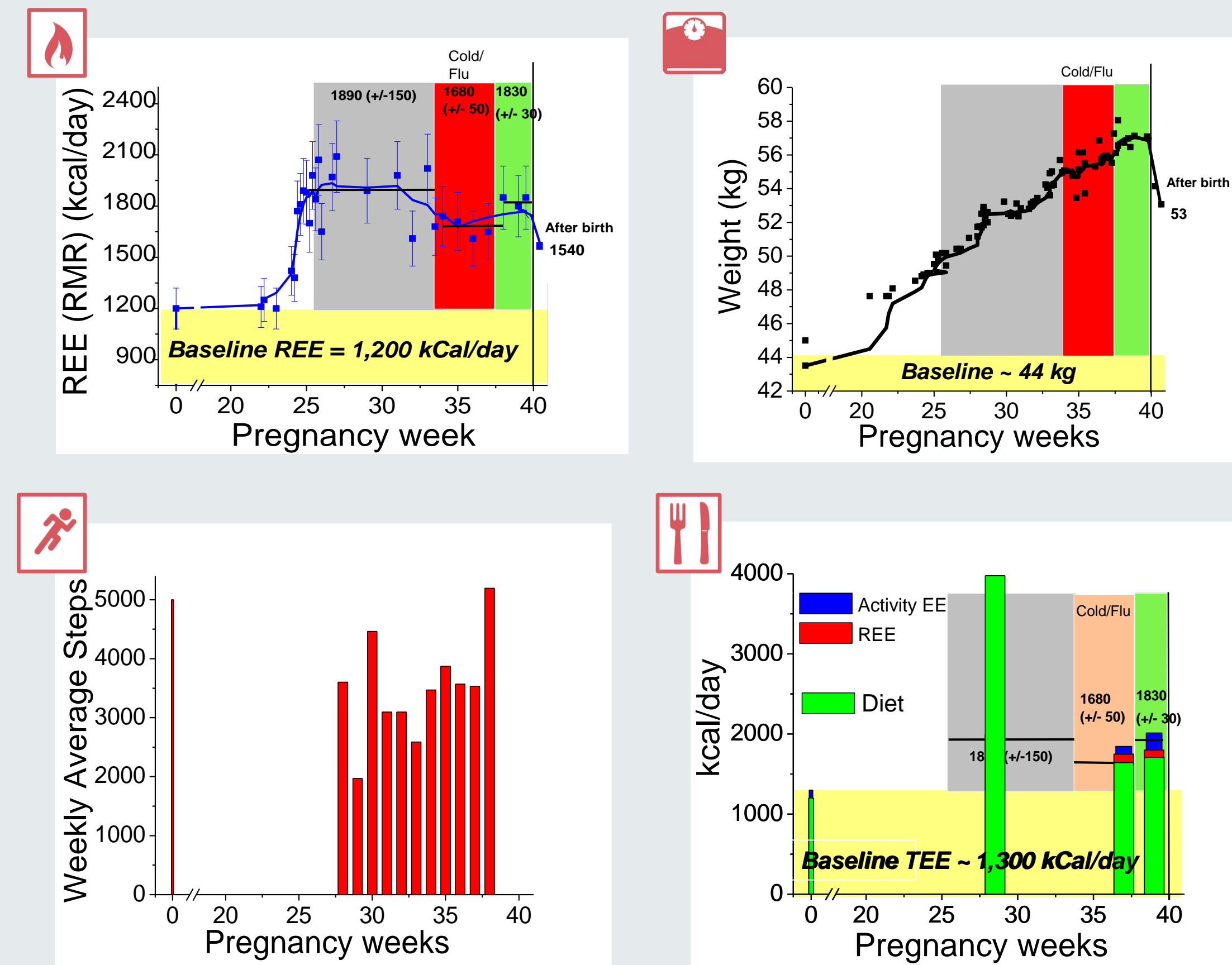


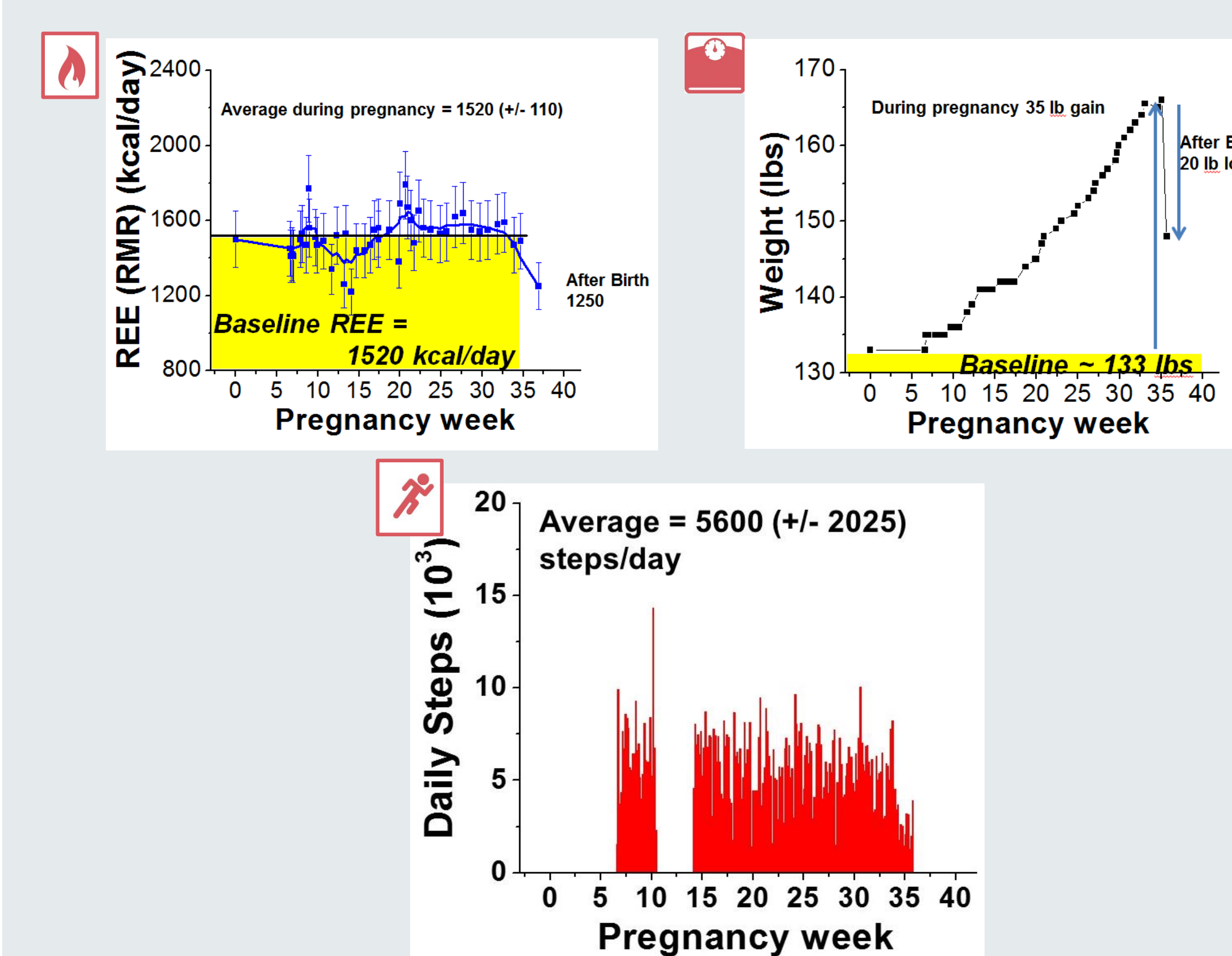
Fig. 1. Weight control: balance between calorie intake and energy expenditure. Resting energy expenditure (REE) constitute >75% of total energy expenditure, which cannot be measured by the existing accelerometer-based devices. Current REE measurement technologies are bulky, complicated and expensive, which are available only in clinical and research labs.

CASE STUDIES – RESTING ENERGY EXPENDITURE AND WEIGHT GAIN

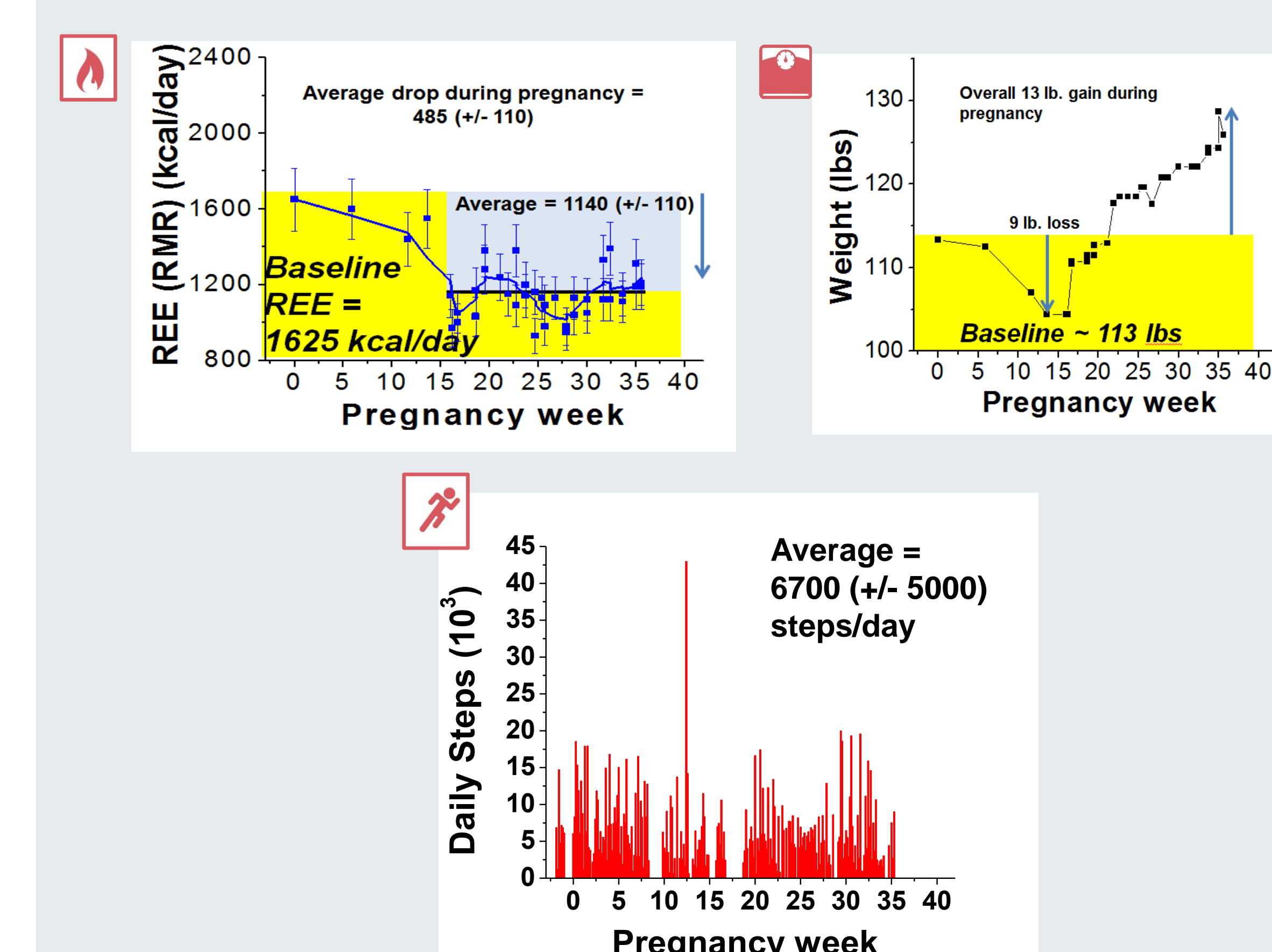
CASE ONE:
REE increased during second trimester and remained relatively stable through delivery



CASE TWO:
REE stayed the same throughout pregnancy



CASE THREE:
REE decreased with nausea and remained low later in pregnancy



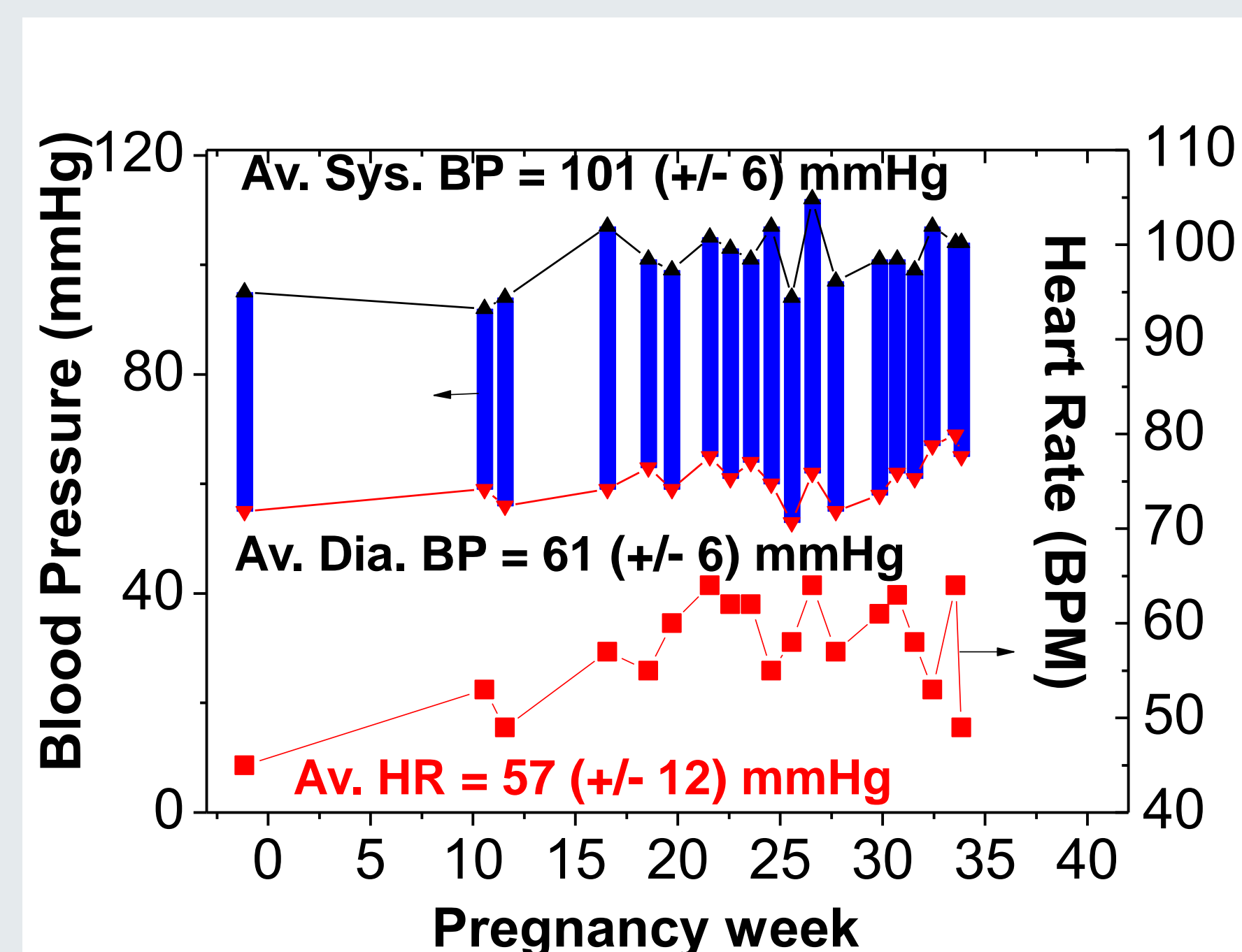
CONCLUSIONS:

- REE is unique for each individual, and it is a complex variable that depends on several factors.
- It can increase, remain constant or decrease during pregnancy, and therefore is necessary to track it

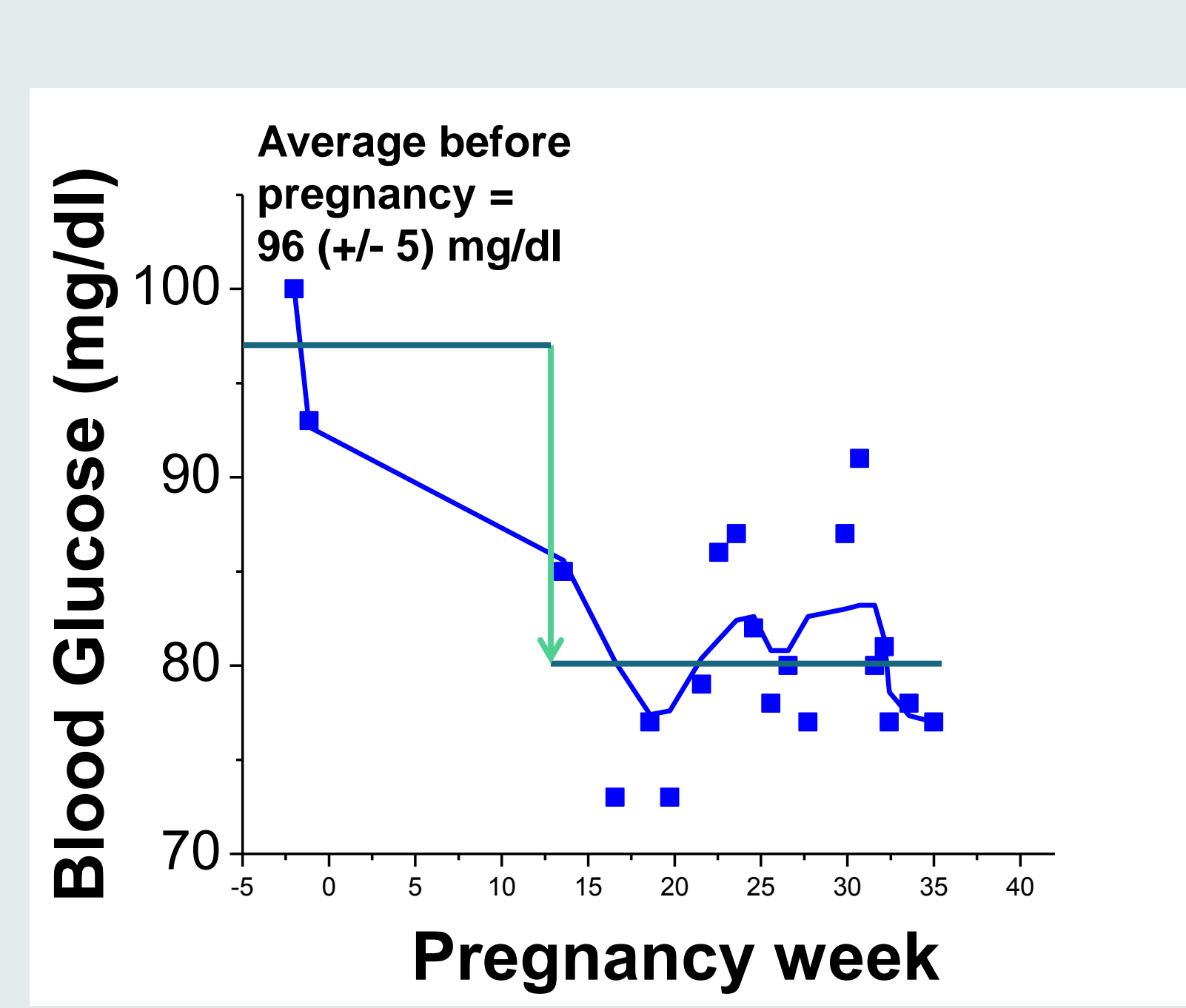


WHAT ELSE TO TRACK DURING PREGNANCY TO IMPROVE HEALTH AND UNDERSTAND PLACENTAL FUNCTION

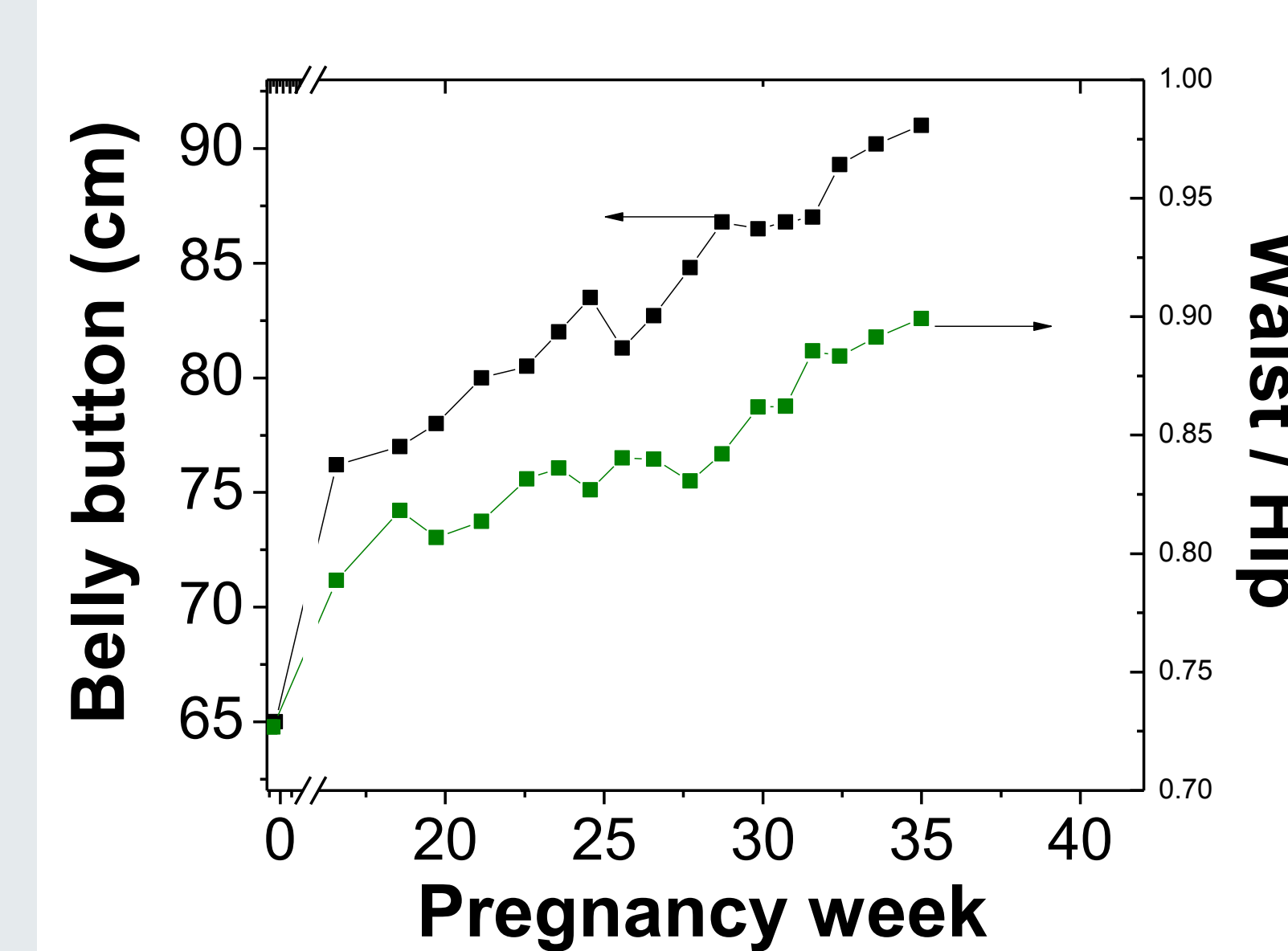
HEART RATE / BLOOD PRESSURE



BLOOD GLUCOSE



PHYSICAL DIMENSIONS / ANTHROPOMETRICS



CARDIAC OUTPUT



Point Of Care device for real-time monitoring of cardiovascular parameters for clinical and home use. The device comprises a mouthpiece integrated with a heart rate sensor with breath carbon dioxide analysis for non-invasive assessment of cardiovascular functions, and wireless communication with professionals.