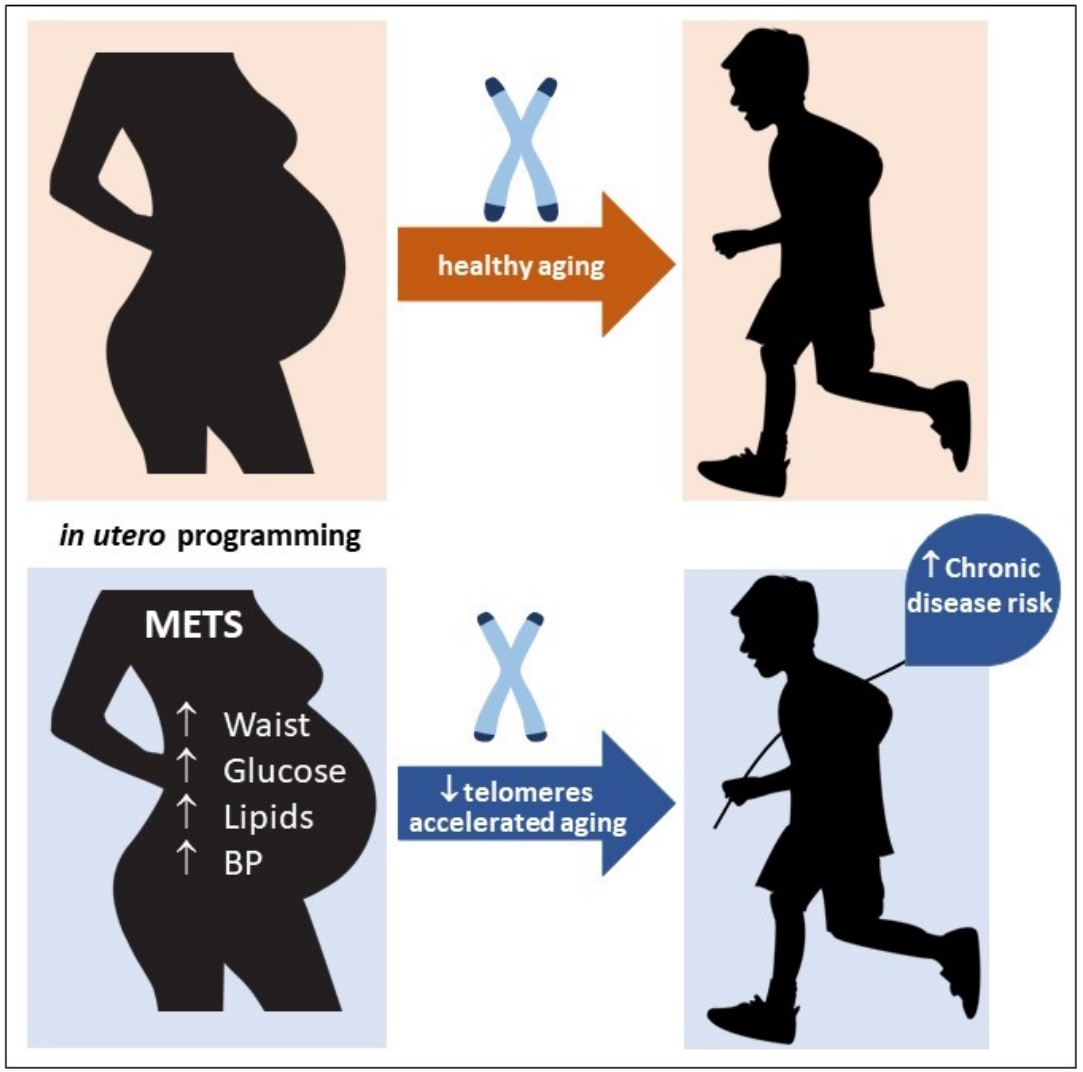
CRE HiPP BITE

Brokering Innovation Through Evidence

A bite-sized summary of a piece of research supported by CRE HIPP



Do children of mothers who had metabolic syndrome in pregnancy have shorter telomeres, a biomarker of aging, than children of mothers without metabolic syndrome?

BACKGROUND

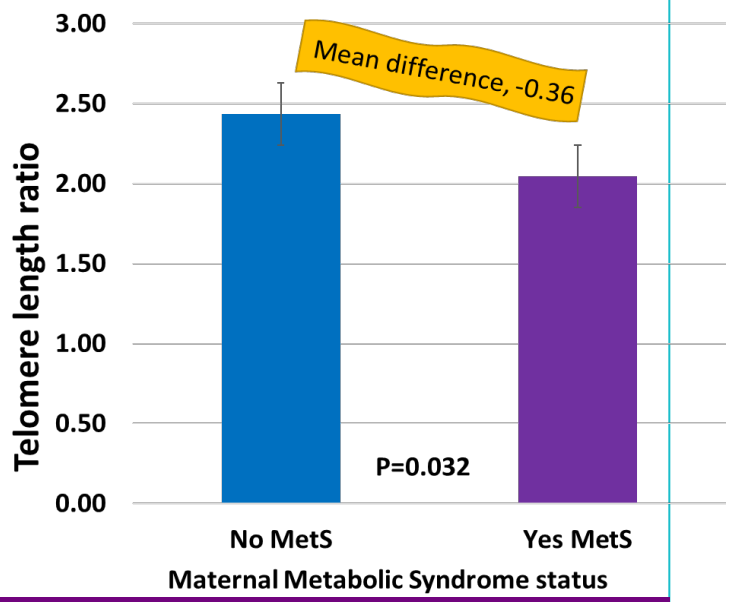
- Telomeres are repeating DNA sequences located at the ends of chromosomes; they progressively shorten with each round of cell division.
- Shorter telomeres in adults associate with increased future risk of chronic diseases, and all cause mortality.
- Antenatal determinants are a particularly important factor of telomere length; maternal stress or smoking is associated with shorter telomeres measured in cord blood.
- In childhood, there is less information on how maternal exposures might influence child biological aging.

- This study aimed to determine whether metabolic syndrome, a clustering of cardiovascular risk factors, in pregnancy associates with child telomere length, anthropometry, and blood pressure at 10 y of age.

Children of mothers with metabolic syndrome in pregnancy have shorter telomeres

FINDINGS

- 255 women and her 10 year old children were included
- 20% (n = 51) of the women had metabolic syndrome in pregnancy
- Children were ~9.6 years old, and weighed ~35 kilograms
- Children of mothers who had metabolic syndrome in pregnancy had 14% shorter telomeres than children of mothers who did not have metabolic syndrome
- Height- and weight for age z scores, BMI z scores, and blood pressure, were similar in children from mothers who did and did not have metabolic syndrome in pregnancy



The metabolic syndrome in pregnancy and its association with child telomere length. McAninch D, Bianco-Miotto T, Gatford KL, Leemaqz SY, Andraweera PH, Garrett A, Plummer MD, Dekker GA, Roberts CT, Smithers LG, Grieger JA. Diabetologia. 2020 Oct;63(10):2140-2149. doi: 10.1007/s00125-020-05242-0.

RECOMMENDATIONS FOR PRACTICE

In children, biological/molecular aging may be occurring before phenotypical changes are observed

Early assessment of telomere length in children may provide insight into their potential future chronic disease risk

What is CRE HiPP

The Centre of Research Excellence in Health in Preconception and Pregnancy (CRE HiPP) is an innovative, passionate, multi-disciplinary team of researchers, clinicians, students and consumers.

We aim to refine and implement health promotion, lifestyle improvement, and obesity prevention strategically targeting women preconception and during pregnancy, to improve the health of women and the next generation.

Find out more about CRE HiPP on our website hipp.org.au.

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