

INTERNATIONAL SYMPOSIUM ON
**Understanding the Double Burden of
Malnutrition for Effective Interventions**

Consequences of maternal malnutrition

Shane Norris

University of the Witwatersrand, Johannesburg,
South Africa

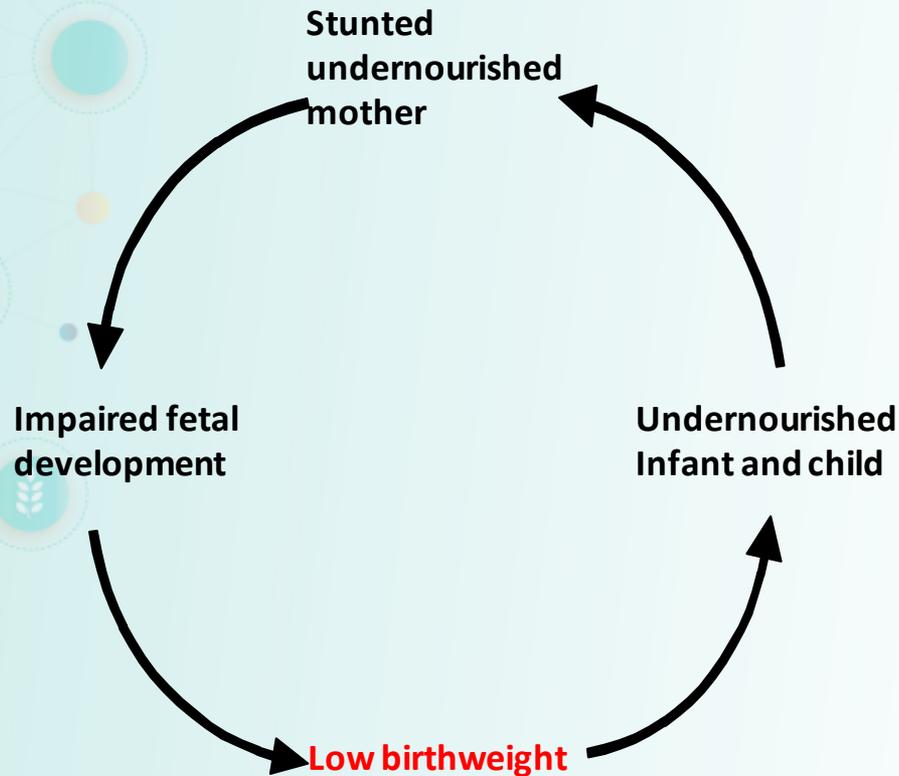


MRC/Wits Developmental
Pathways for Health Research Unit

CAPITAL

- **A country's wealth** goes hand in hand with its **Gross Domestic Product** = market value of goods and services over a defined time
- **Several types of capital** available to a country = manufactured, natural, financial, social and human capital
- **Human capital** = people's health, education, skills, motivation & inclusion
- **Social capital** = institutions and organisations that help develop human capital (families, communities, businesses, and the like)
- **World Bank** concluded that 2/3 of the wealth difference between countries can be attributed to variations in human capital. It found that human capital accounts for 70% of wealth in high-income countries, whereas natural capital remains the biggest asset in low-income countries
- **Human capital starts early in life**

MATERNAL UNDERNUTRITION



**Children born into these conditions
start with lead on their feet
Richter et al. Lancet 2017**

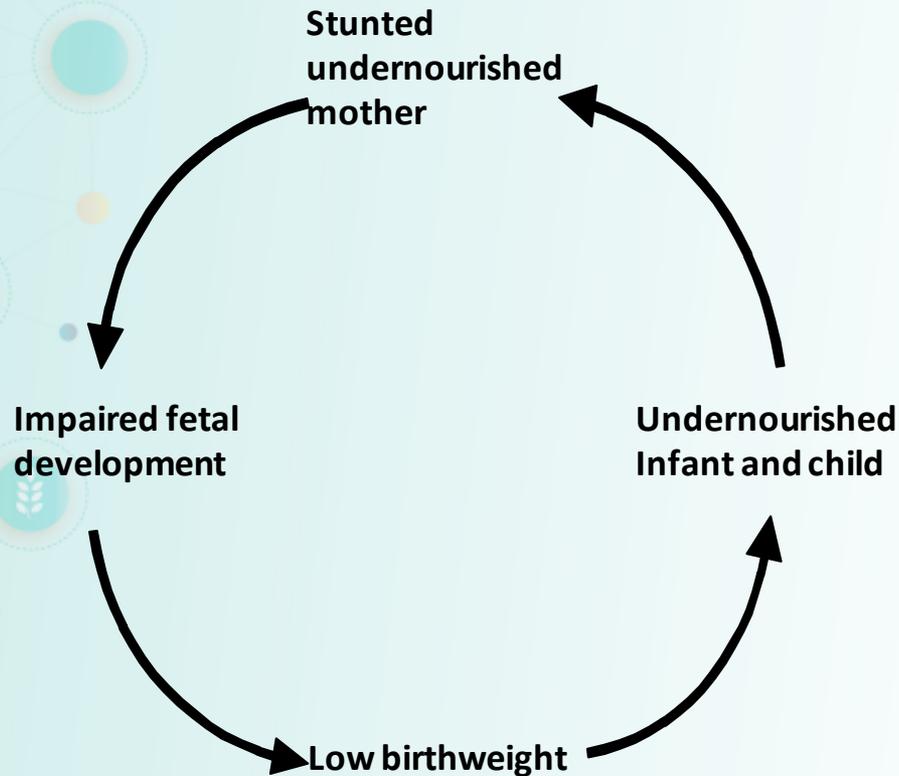
Consequences:

- Poorer physical growth
- Poorer health (including obesity)
- Less learning & schooling
- Lower prospects of work
- Poorer wages
- Increased social risks

Long-term studies (COHORTS):

- maternal undernutrition translates into an average loss of adult income of 26% in the her children

MATERNAL UNDERNUTRITION

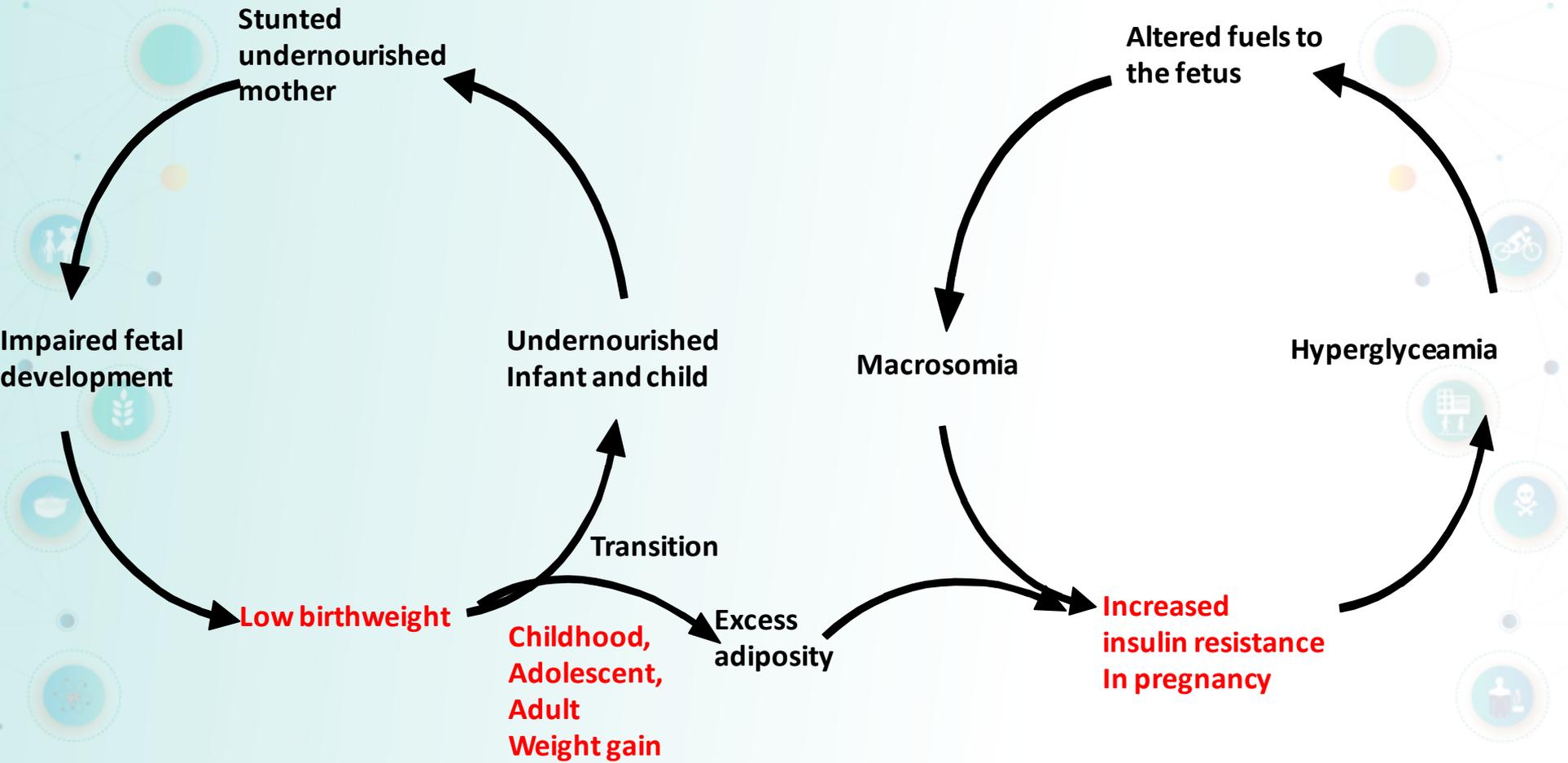


Maternal micronutrient deficiencies during pregnancy?

Consequences:

- Black et al. (Lancet 2013) demonstrated a causal link between maternal iron deficiency and adverse outcomes
- Maternal anaemia is associated with poorer development & educational attainment in adulthood
- Less clear effects of deficiencies of zinc, copper, magnesium and selenium have been reported

MATERNAL MALNUTRITION

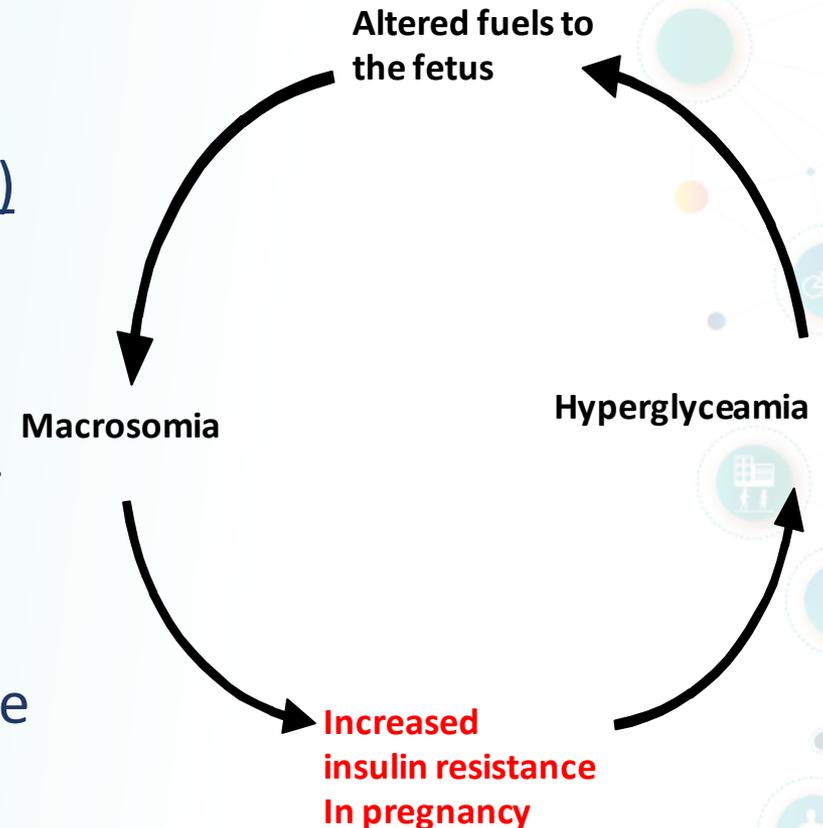


MATERNAL OBESITY

Maternal hyperglycaemia:

The Hyperglycaemia and Adverse Pregnancy Outcome Study (HAPO) Follow-up

- 19.1% of children born to GDM mothers were obese compared to 9.9% of children born to non-GDM mothers
- Greater adiposity in girls
- Higher rates of abnormal glucose tolerance (4.7% vs 1.7%)



SOUTH AFRICA

2018 edition of the South African Child Gauge

- More than 60% of children live in poverty.
- This means most children in South Africa live in households where the income is less than R1,138 per person per month (\$88)
- 12% of children live in households where they go hungry
- Approx. 20% of children younger than 5 years old show stunted physical growth.
- Fewer than half of young people end up obtaining a school-leaving certificate

SOUTH AFRICA

Complex maternal malnutrition burden

- Legacy of severe undernutrition and stunted adults
- Low-rate of underweight during pregnancy
- 67% of pregnant women are overweight or obese
- 30% of pregnant women are anaemic
- 10% gestational diabetes (screening study; no universal screening)
- Other micronutrient deficiencies?
 - Some evidence of vitamin D

Women exhibit multi-malnutrition markers

WHAT CAN BE DONE?

Governments must recognise that it cannot develop human potential on its own. .

- Families must be provided with quality services that match their investment in their children.

Families must recognise that the state cannot develop their children's potential on its own.

- Even the best schools and health services will not make or keep their children healthy, educated and well-adjusted without their families' deep commitment and engagement

CONCLUSION

Maternal malnutrition impacts multiple pathways of of children's development, health, and human capital

“Families and the state are equal partners in ensuring that the most critical element of our wealth and our future - human capital – is nurtured and fostered from young, and throughout life. In this way, human wealth can be shared by us all and handed on with interest”
Linda

Richter

INTERNATIONAL SYMPOSIUM ON
**Understanding the Double Burden of
Malnutrition for Effective Interventions**

THANK YOU!

