



Er overvægt et problem i obstetrik?

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Agenda 6. september 2022

- Tal og statistik
- Komplikationer under graviditet, fødsel og puerperium
- Vægtøgning i graviditeten
- Klinisk håndtering af gravide med overvægt
- Forebyggende indsatser og forskningsprojekter

The background of the slide is a circular BMI calculator. It features two concentric rings. The outer ring is labeled 'WEIGHT' and has markings for 40kg, 50kg, 60kg, 70kg, 80kg, 90kg, 100kg, 110kg, and 120kg. The inner ring is labeled 'HEIGHT' and has markings for 1.4m, 1.5m, 1.6m, 1.7m, and 1.8m. At the bottom, there is a section labeled 'METRIC' with arrows pointing to 'OVERWEIGHT' and 'HEALTHY' regions. The text 'BMI CALCULATOR' is prominently displayed at the bottom, with instructions: 'Instructions: Align height against weight and read BMI in window'.

BMI = vægt (kg) / højde (m)²

Undervægt

BMI < 18,5

Normalvægt

BMI 18,5 - 24,9

Overvægt

BMI 25 – 29,9

Svær overvægt/fedme

BMI ≥ 30

Fedme grad 1 : 30 – 34.9

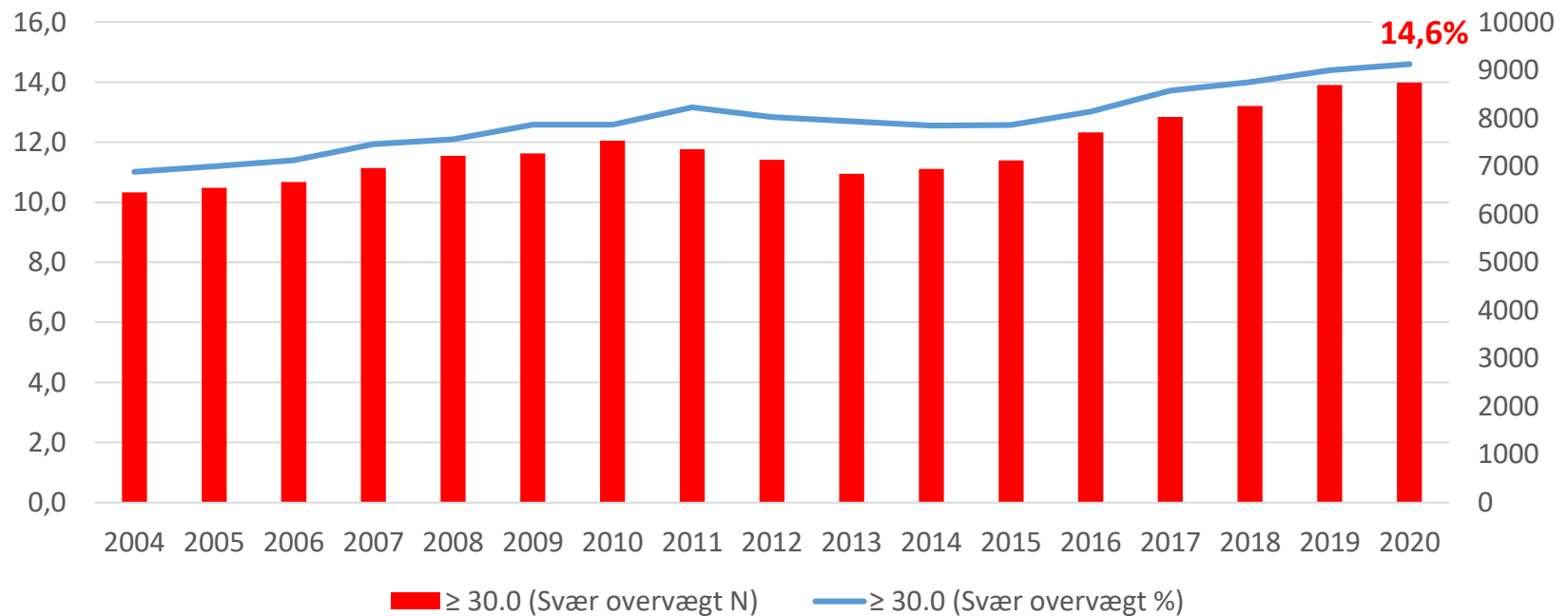
Fedme grad 2 : 35 – 39.9

Fedme grad 3 : > 40

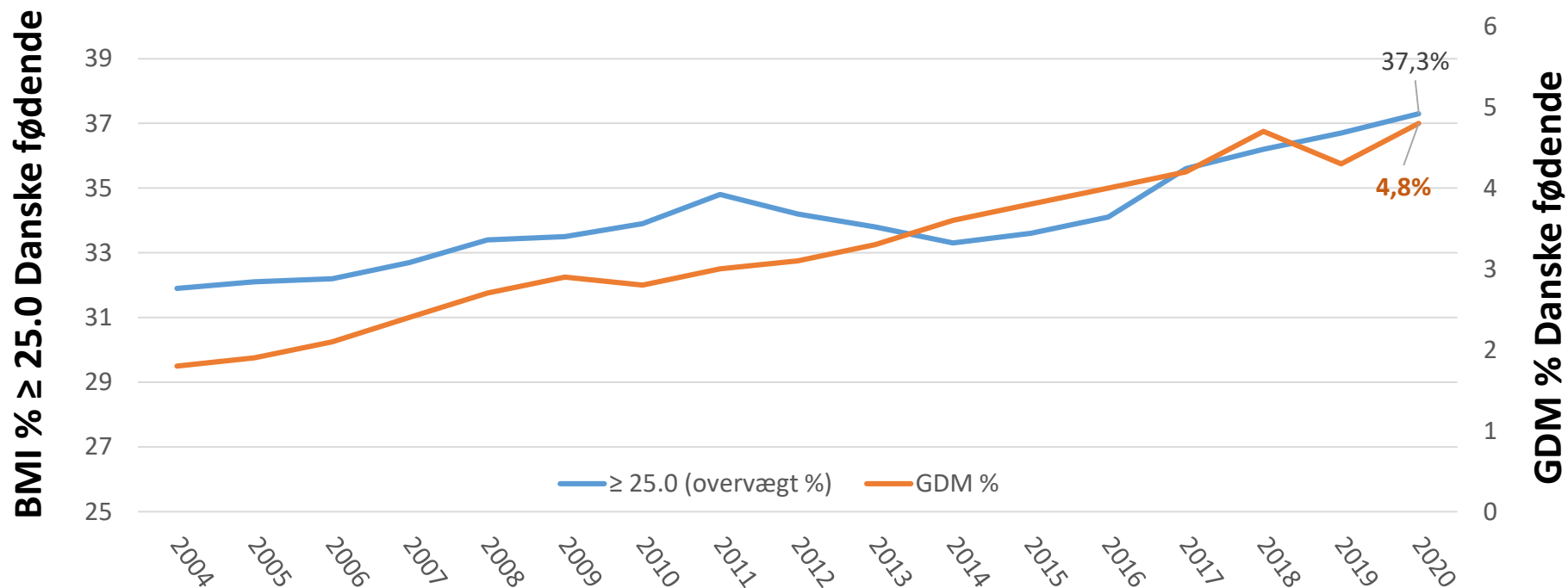
Sundhedsstyrelsen

Maternel præ-graviditets vægt i Danmark 2004-2020

BMI ≥ 30 (% & number) (1.039.010 fødsler)



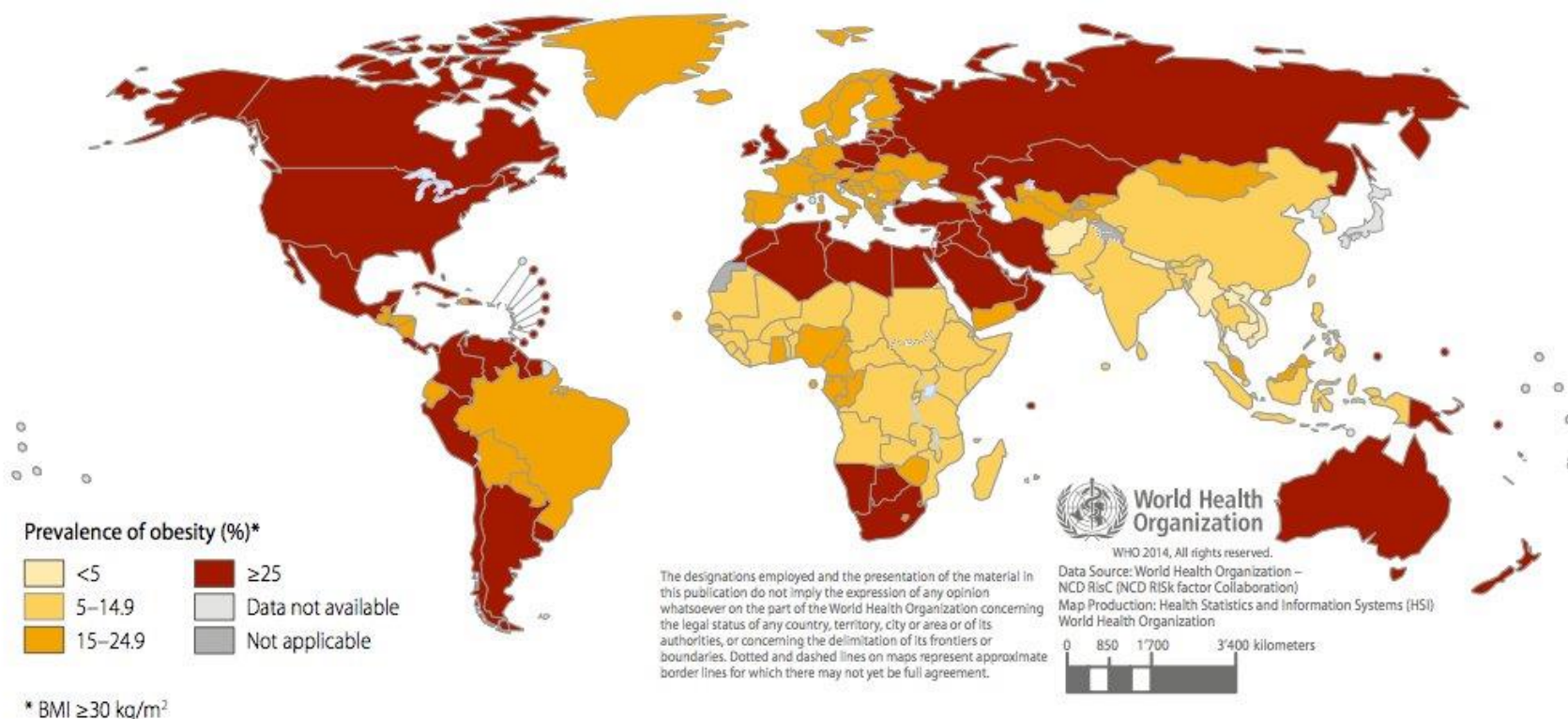
Gestational Diabetes Mellitus (GDM) og BMI ≥ 25 Danmark 1.039.010 graviditeter 2004-2020 (%)



Sundhedsdatastyrelsen 2021

GLOBESITY

Age-standardized prevalence of obesity in women aged 18 years and over (BMI ≥ 30 kg/m²)



“Globesity”



**650 million
voksne**

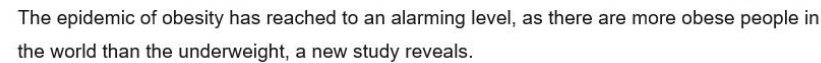
340 million unge

**39 million
børn**

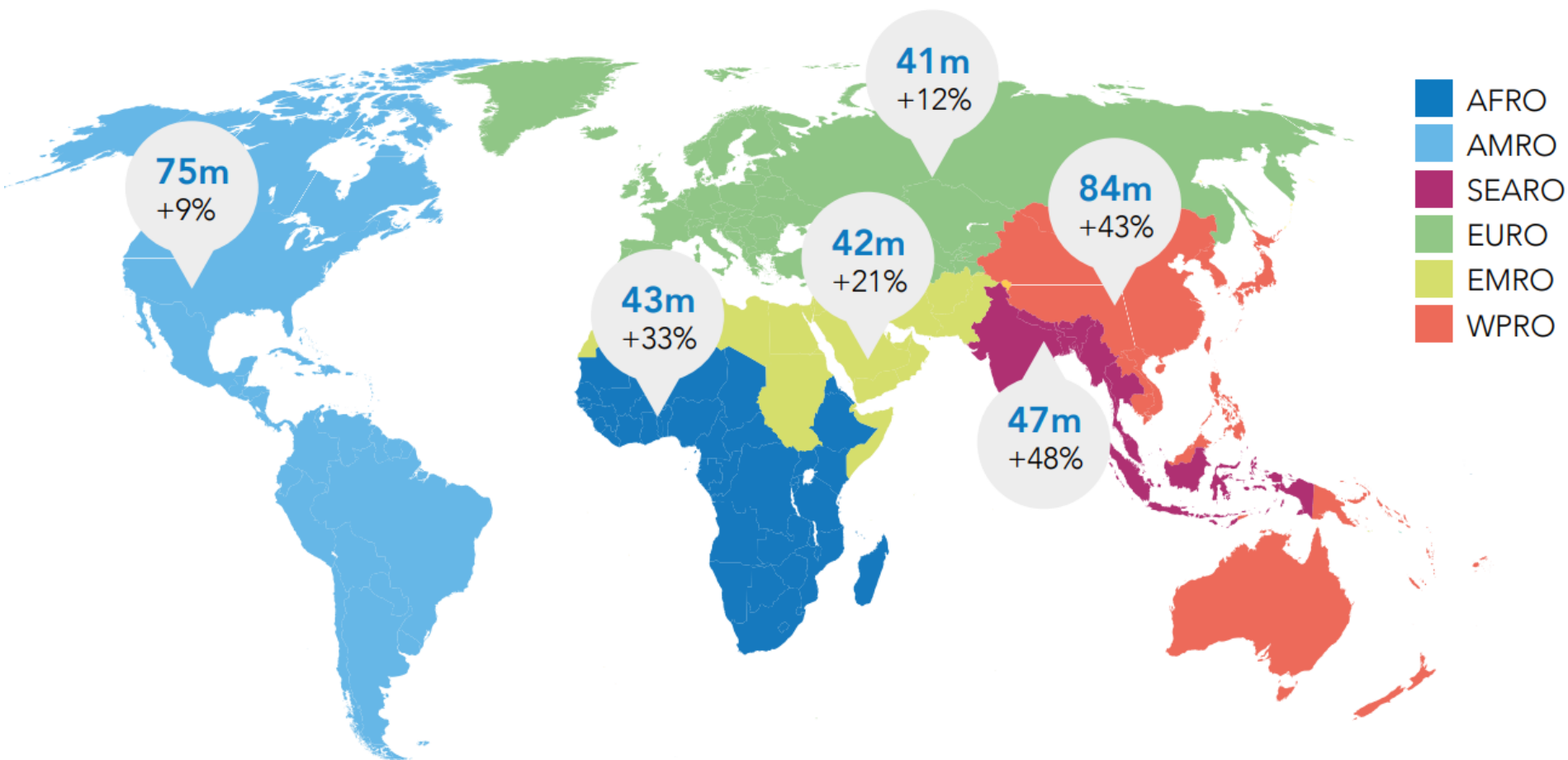


**World Health
Organization**

 Ali Ahmed April 1, 2016



Number of children aged 5-19 living with overweight or obesity in 2016, and the increase in prevalence from 2010 to 2016



Source: NCD-RisC (2017)³

Maternal obesity and clinical complications

Fertility



Infertility

Embryo



Miscarriage
Congenital anomalies

Fetus



Stillbirth
Fetal growth
Monitoring

Pregnancy



GDM
Preeclampsia
Preterm delivery
Thromboembolism

Delivery



Induction of labour
Instrumental delivery
Cesarean delivery
Anaesthetic compl.
Intrapartum monitoring

Postpartum



Infections
Thromboembolism
Low breastfeeding rate
Weight retention

Childhood



High birth weight
Childhood obesity

Adulthood



Obesity
Metabolic syndrome

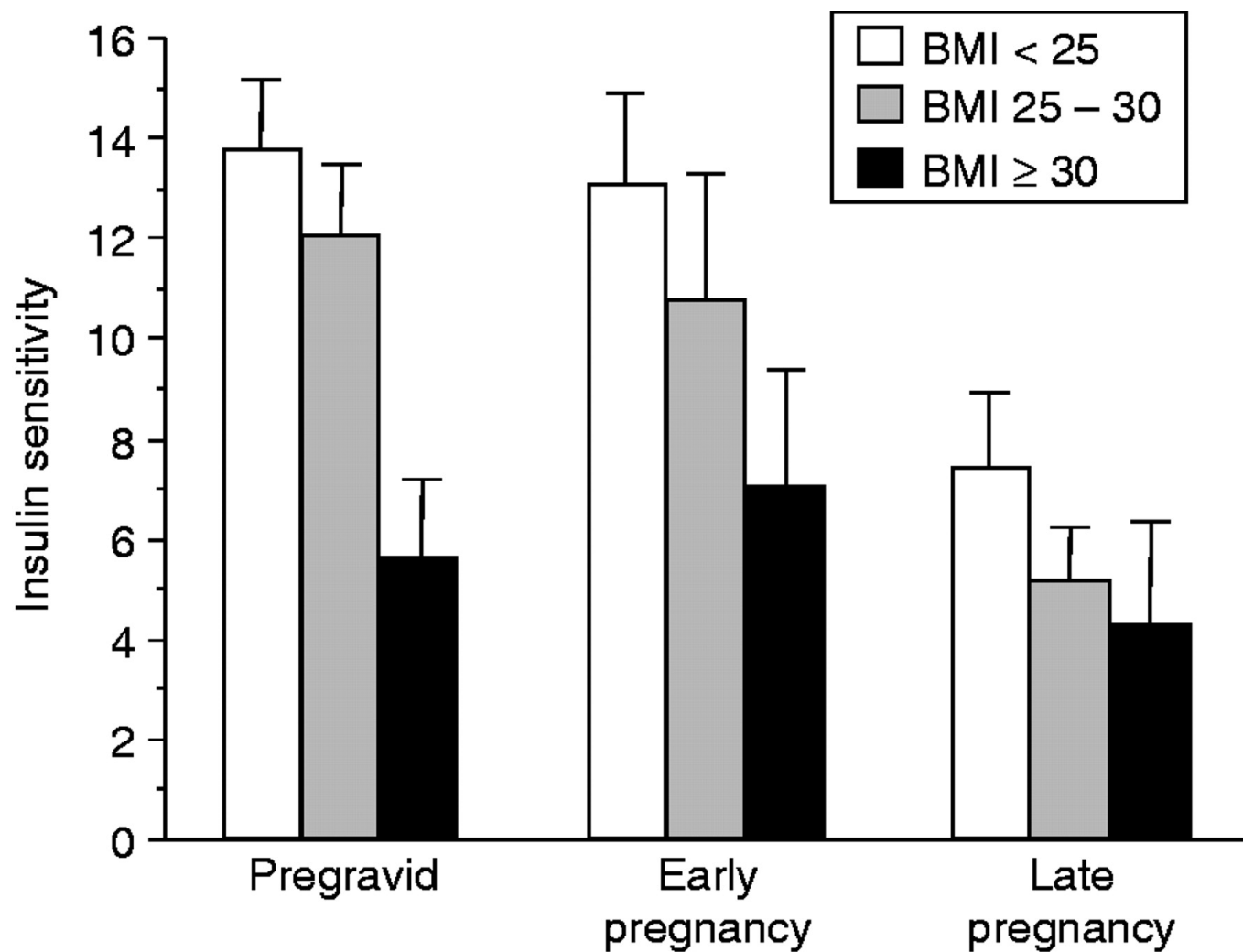


Childhood obesity starts in the womb

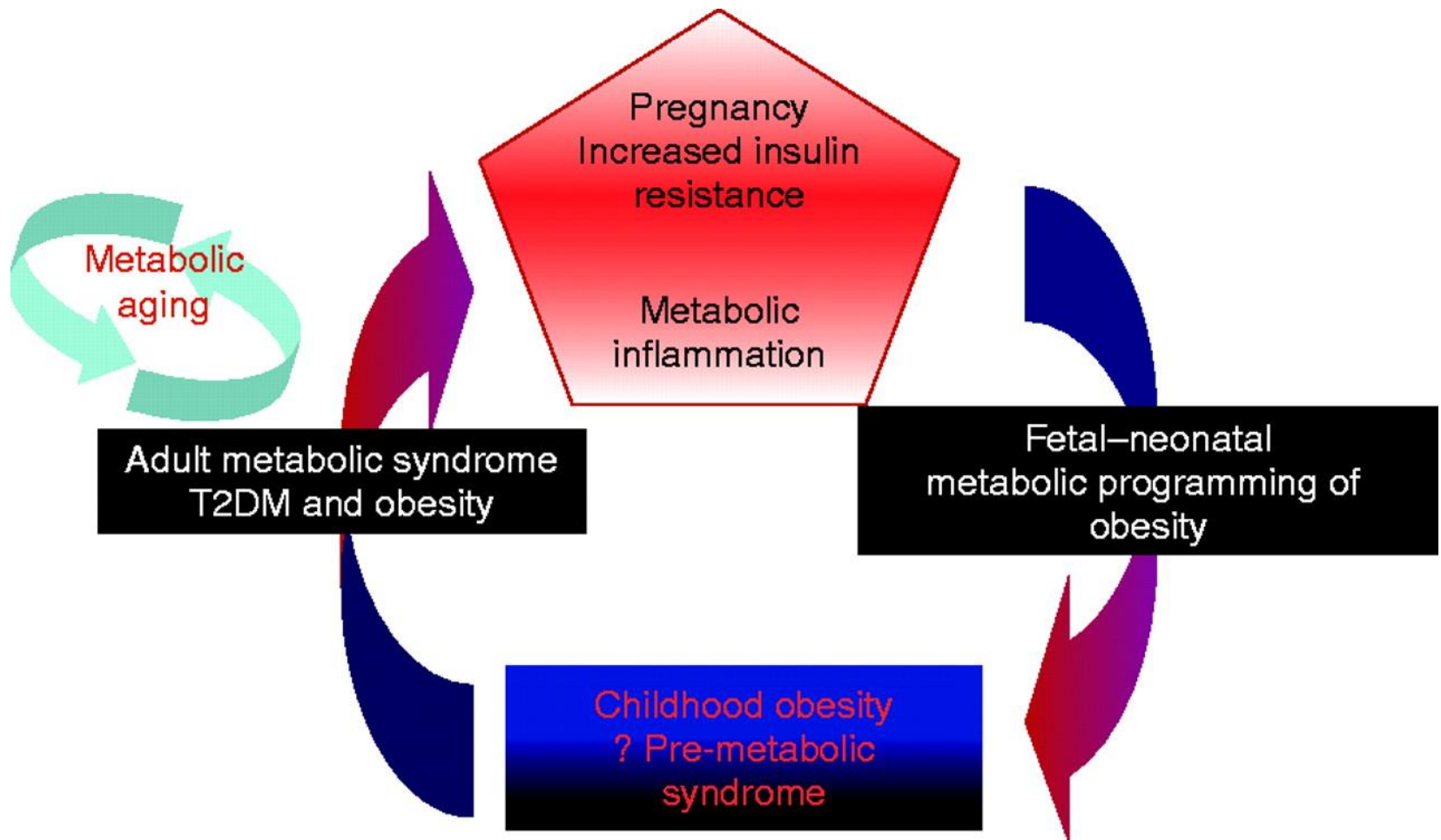


Fetal life, infancy and childhood are critical moments in which key metabolic changes occur with health effects later in life

The longitudinal changes in insulin sensitivity in average (BMI<25), overweight (BMI 25–30), and obese (BMI>30) women over time.



**Proposed model of fetal programming of offspring of women with
Abnormal metabolic environment (increased insulin resistance)**

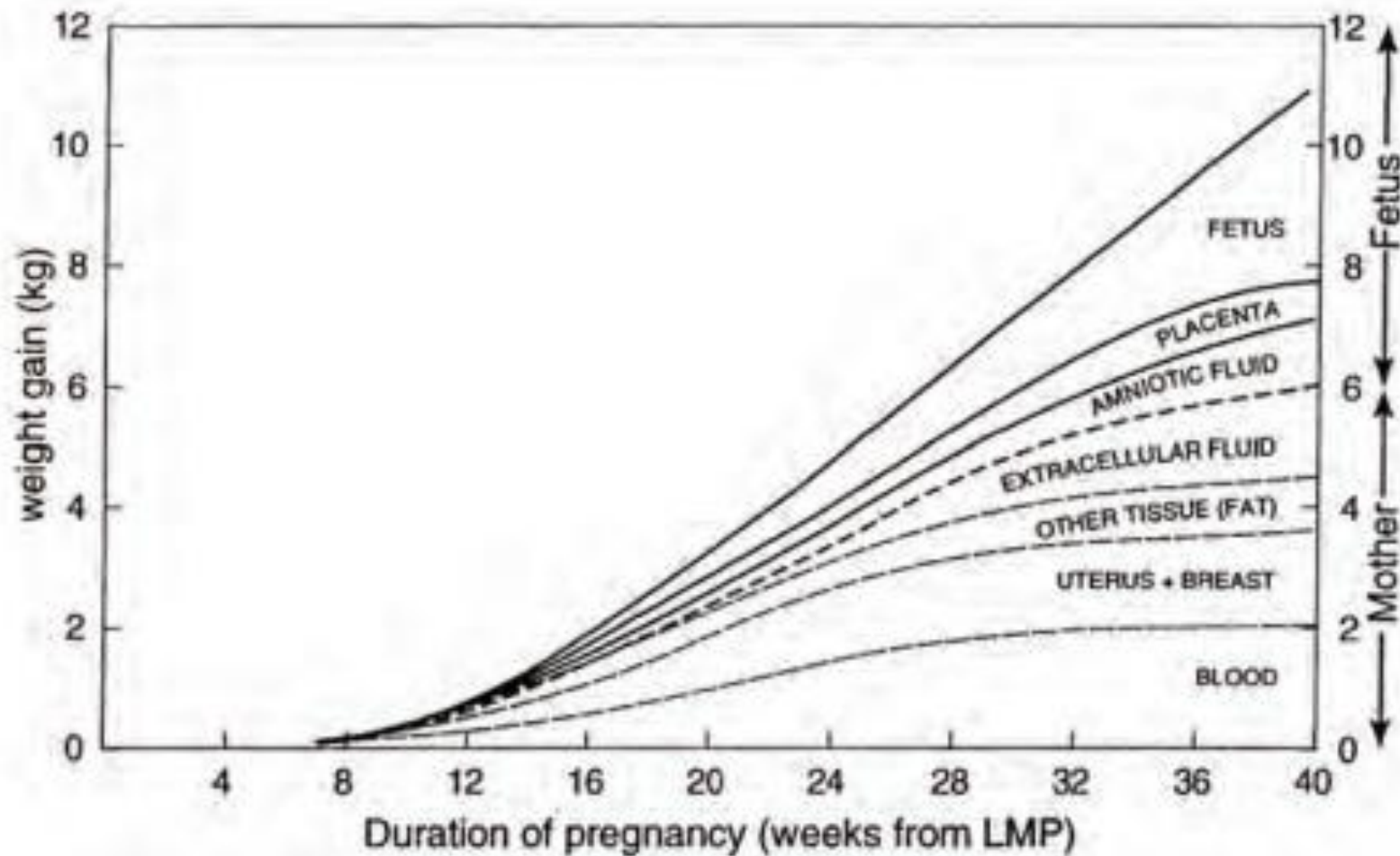


Vægtøgning i graviditeten



" Don't step on it... It makes you cry "

Komponenter af vægtøgning i graviditeten



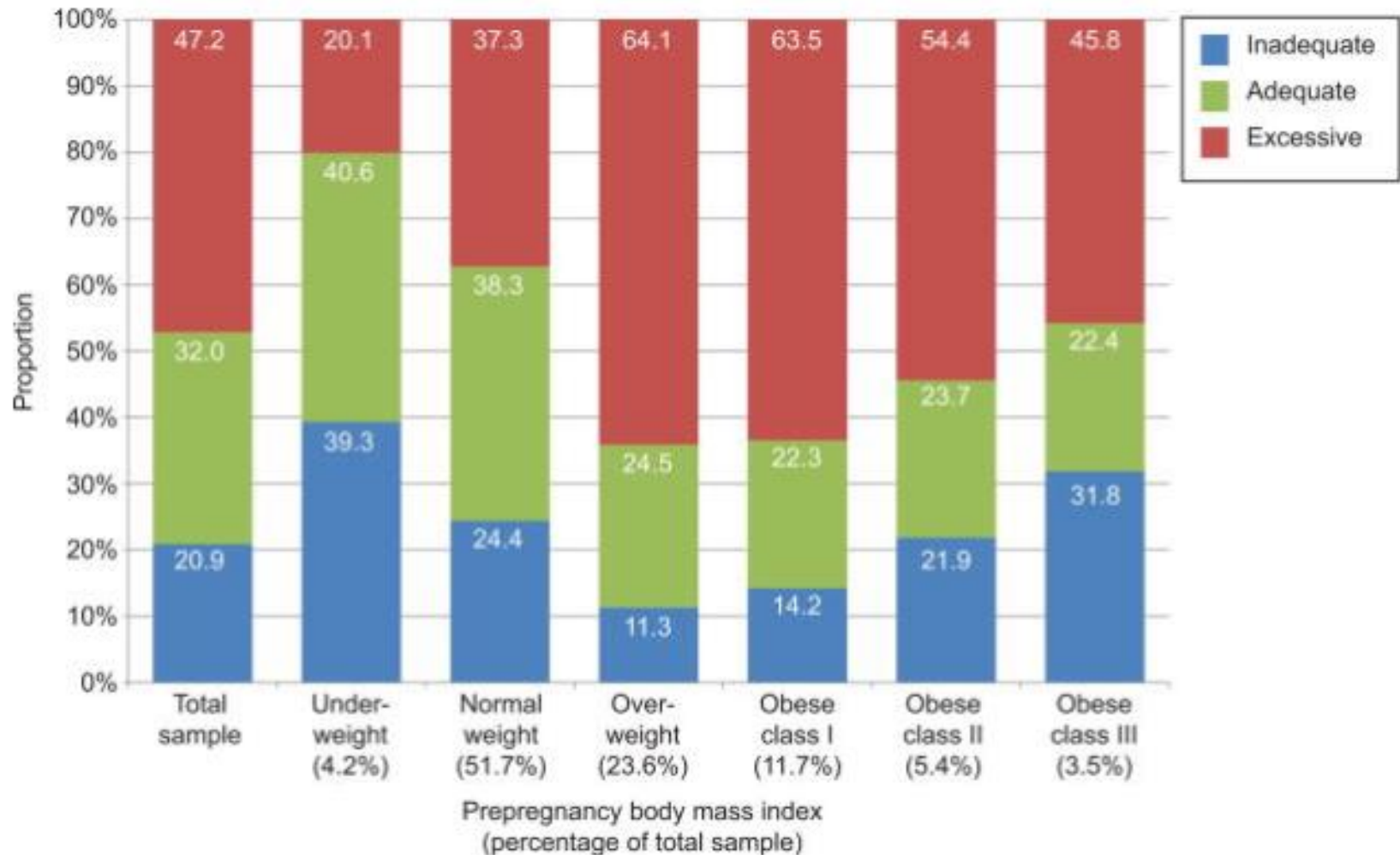
Gestational Weight Gain

(Institute of Medicine 2009)




Prepregnancy BMI category	Total weight gain
Underweight ($< 18.5 \text{ kg/m}^2$)	12.5-18 kg
Normal-weight ($18.5\text{-}24.9 \text{ kg/m}^2$)	11.5-16 kg
Overweight ($25.0\text{-}29.9 \text{ kg/m}^2$)	7-11.5 kg
Obese ($\geq 30.0 \text{ kg/m}^2$)	5-9 kg

Prevalence of GWG Adequacy by Pre-Pregnancy BMI



Longitudinal Study of Maternal BMI in Successive Pregnancies

Ciara M. E. Reynolds ¹, Brendan Egan², Eimer G. O'Malley¹, Léan McMahon¹, Sharon R. Sheehan¹, and Michael J. Turner¹

- Longitudinal observational study
- 9724 women, first and second pregnancy 2009-2017
- Obesity 11.6% → 16%
- Median BMI change +0.6kg/m²
- >20% overweight → obesity category

Longer interpregnancy interval

Formula feeding at discharge

Taking antidepressants/anxiolytics

Postnatal depression

Interpregnancy weight change and risk of adverse pregnancy outcomes: a population-based study

Findings: Compared with women whose BMI changed between -1.0 and 0.9 units, the *adjusted odds ratios* for adverse pregnancy outcomes for those who gained 3 or more units (~ 10 kg) during an average 2 years were:

• Pre-eclampsia 1.78 (95% CI 1.53–2.08)

The associations were all linearly related to the amount of weight change and were also noted in women who had a healthy prepregnancy BMI for both pregnancies

• Caesarean delivery 1.52 (1.22–1.44)

• Stillbirth 1.63 (1.20–2.21)

• LGA infants 1.87 (1.72–2.04)

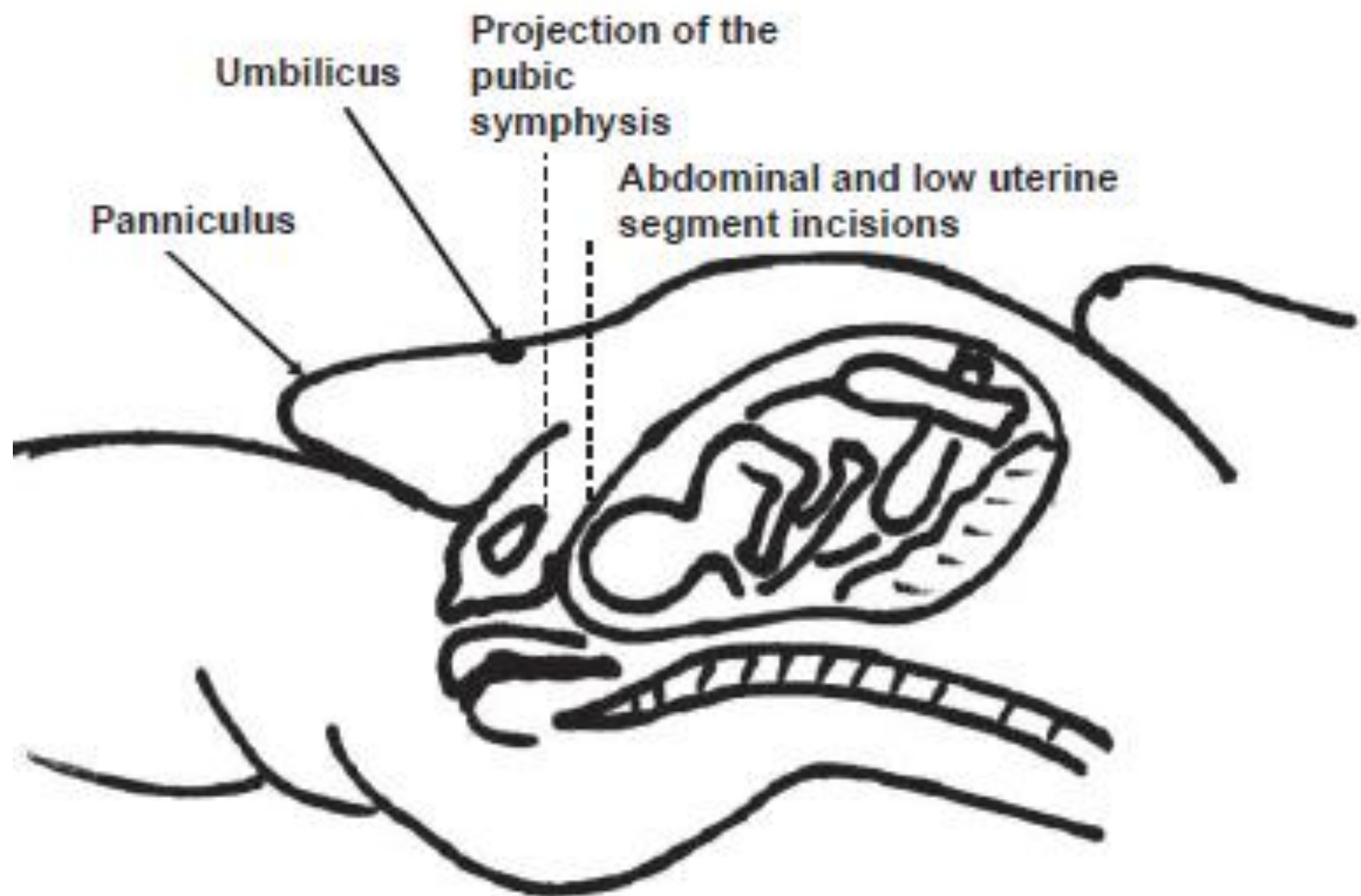
Obstetrisk forløb til gravide med overvægt

Dansk Selskab for Obstetrik og Gynækologi (DSOG) guideline

- Livsstil: Kostvejledning, motion, vægtkontrol, motiverende samtale
- Special jordemoderkonsultation, obstetriker
- Screening for gestationel diabetes
- UL i uge 37 mhp vægtvurdering/lejring af foster
- Planlægge fødslen
- Anæstesitilsyn
- Igangsættelse af fødslen senest uge 41+0
- Tidlig epidural
- Monitorering intrapartum
- Tromboseprofylakse
- Støtte til amning
- Postpartum vægttab



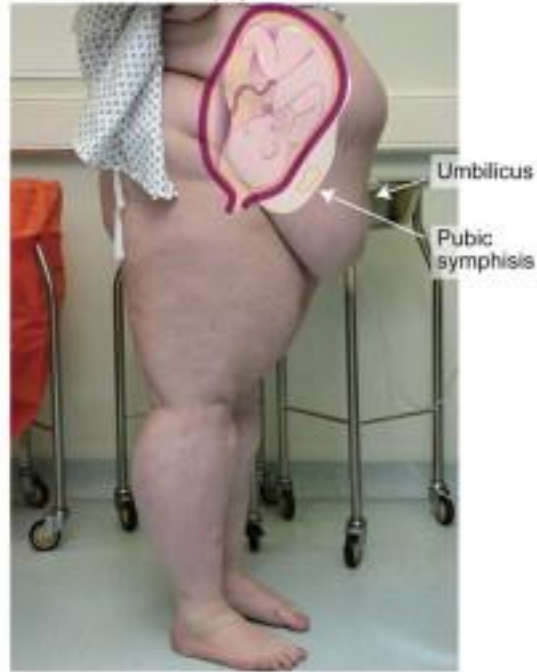




(a)



(b)



(c)





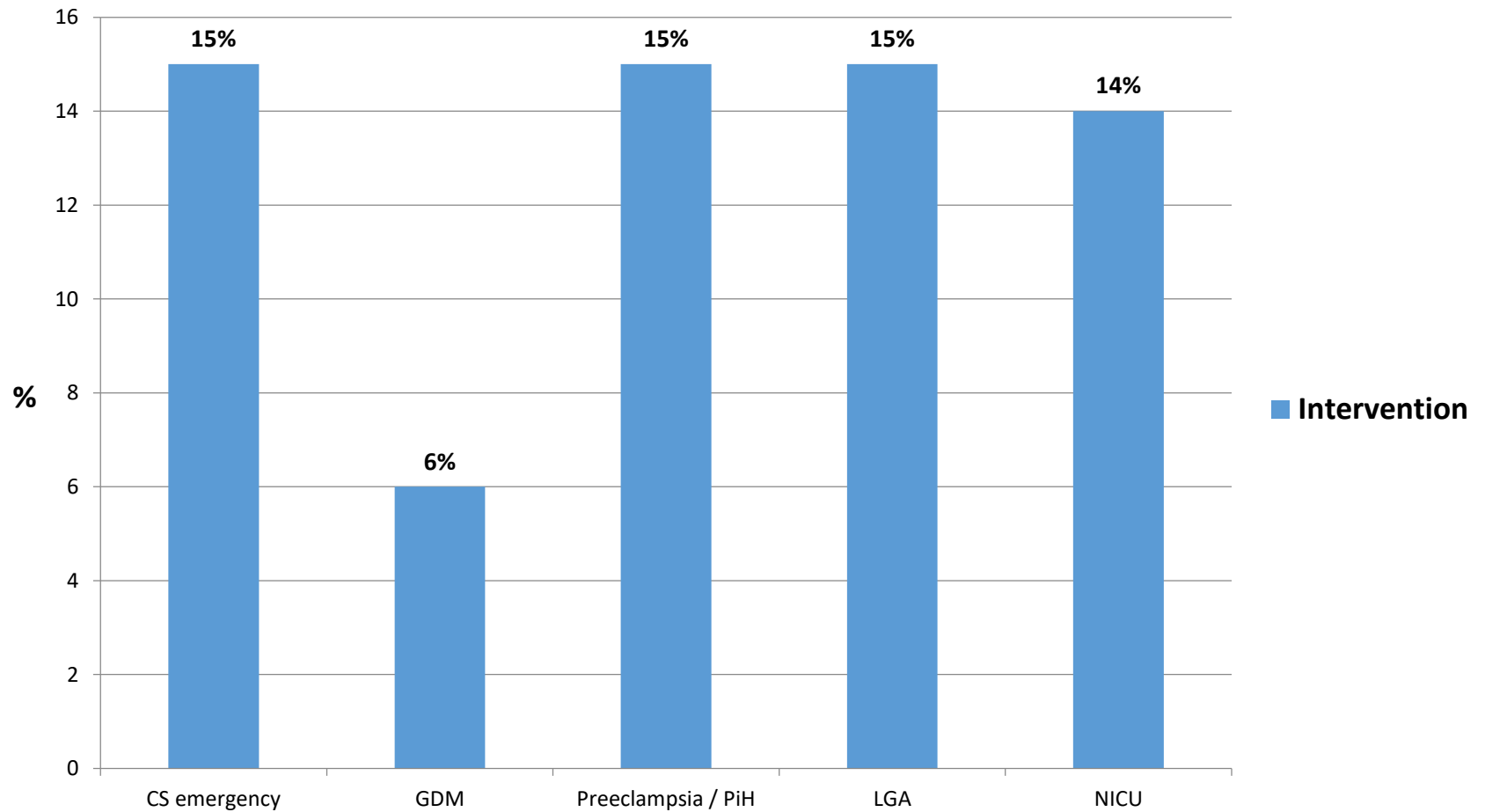
BREAKING THE VICIOUS CYCLE OF OBESITY

The LiP (Lifestyle in Pregnancy) Study: A randomized controlled trial of lifestyle intervention in 360 obese pregnant women.

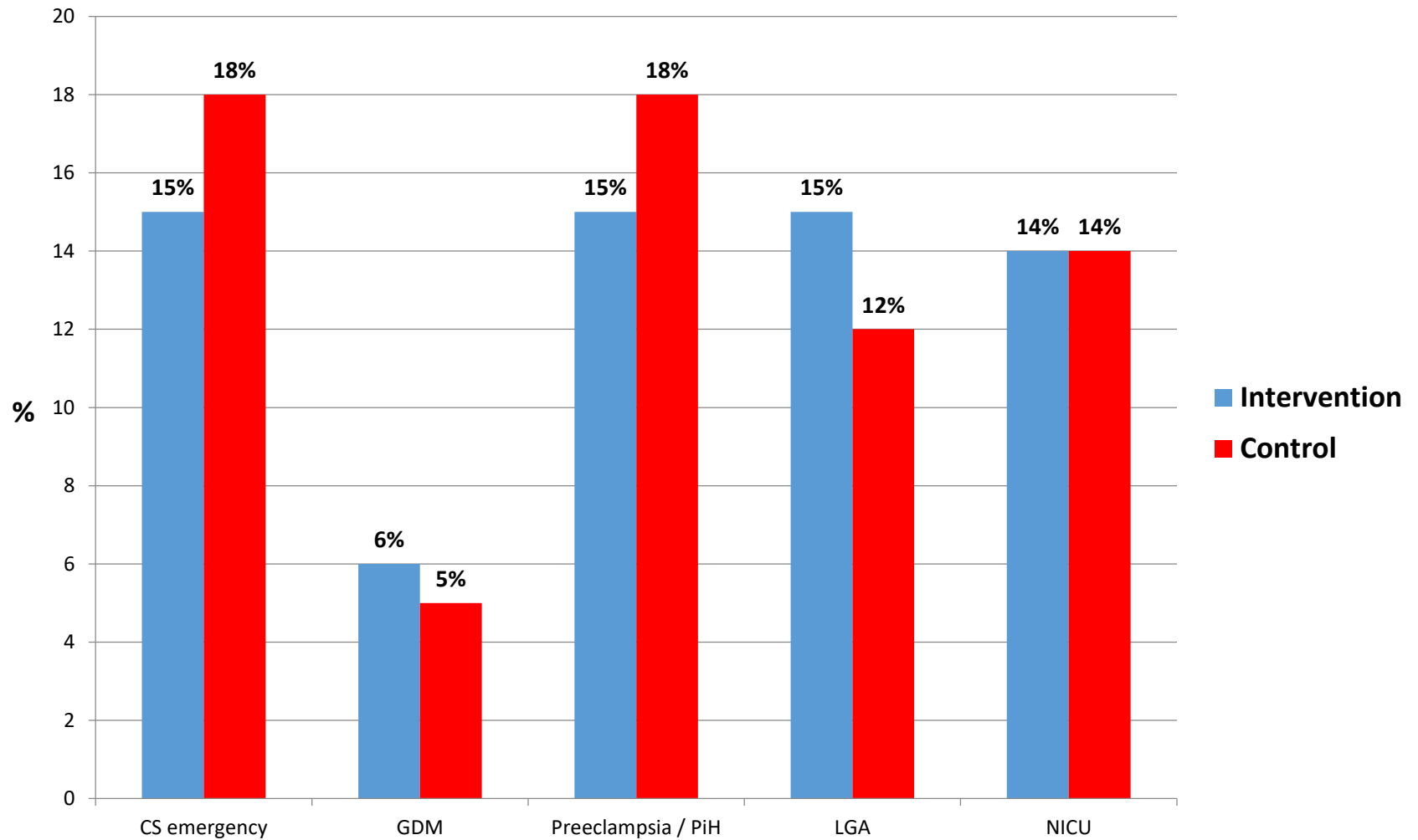


Vinter C et al., Diabetes Care, 2011

Maternelle og neonatale outcomes



Maternal and neonatal outcomes



Gestational Weight Gain (GWG)

GA 35	Intervention n=144	Control n=148	P
GWG (kg)	7.0 (4.7-10.6)	8.6 (5.7-11.5)	0.014
GWG \leq 5 kilos	41 (28.5%)	30 (20.3%)	0.102
GWG \leq 9 kilos	93 (64.6%)	79 (53.4%)	0.052

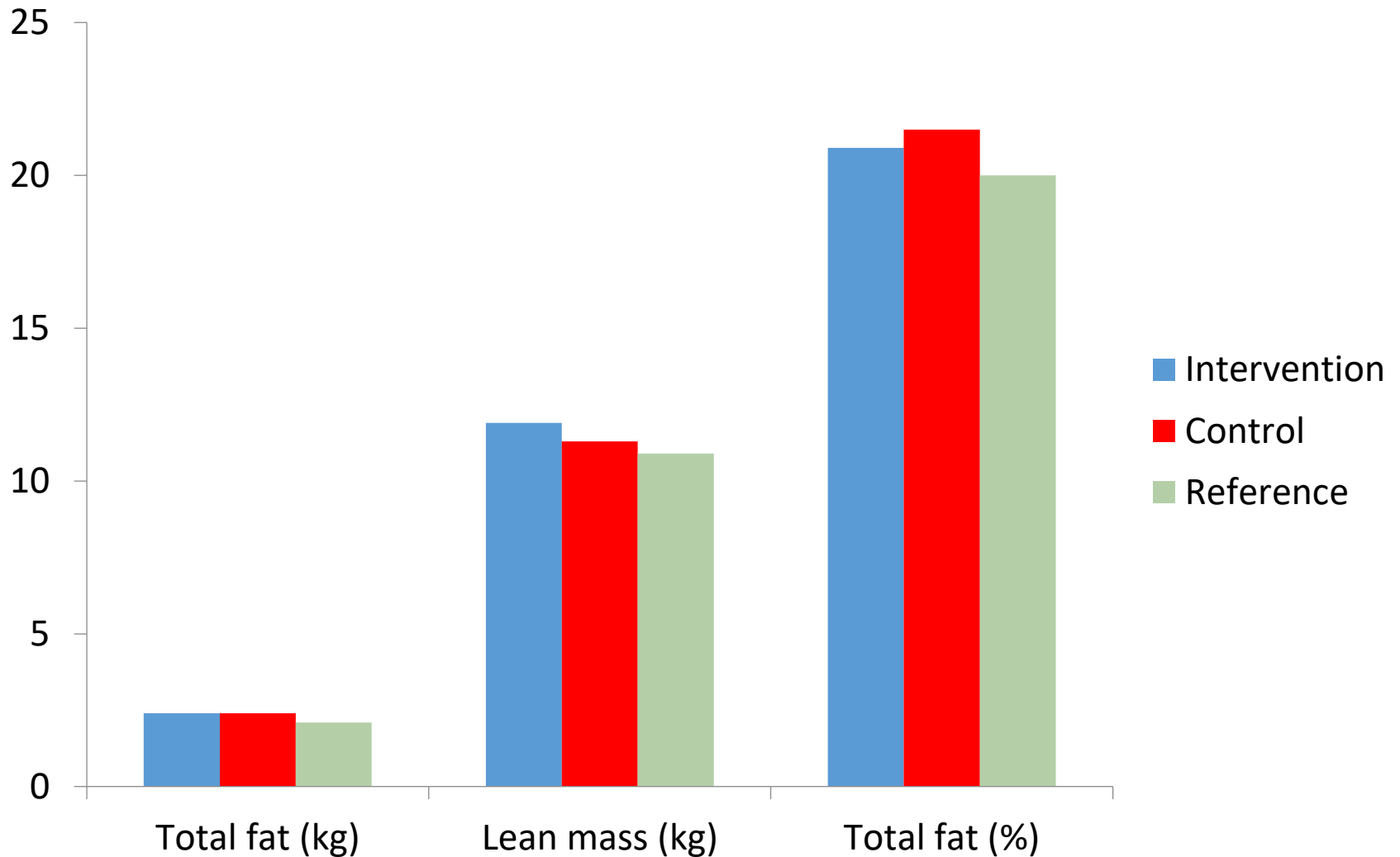
The Lifestyle in Pregnancy and Offspring (LiPO) Study



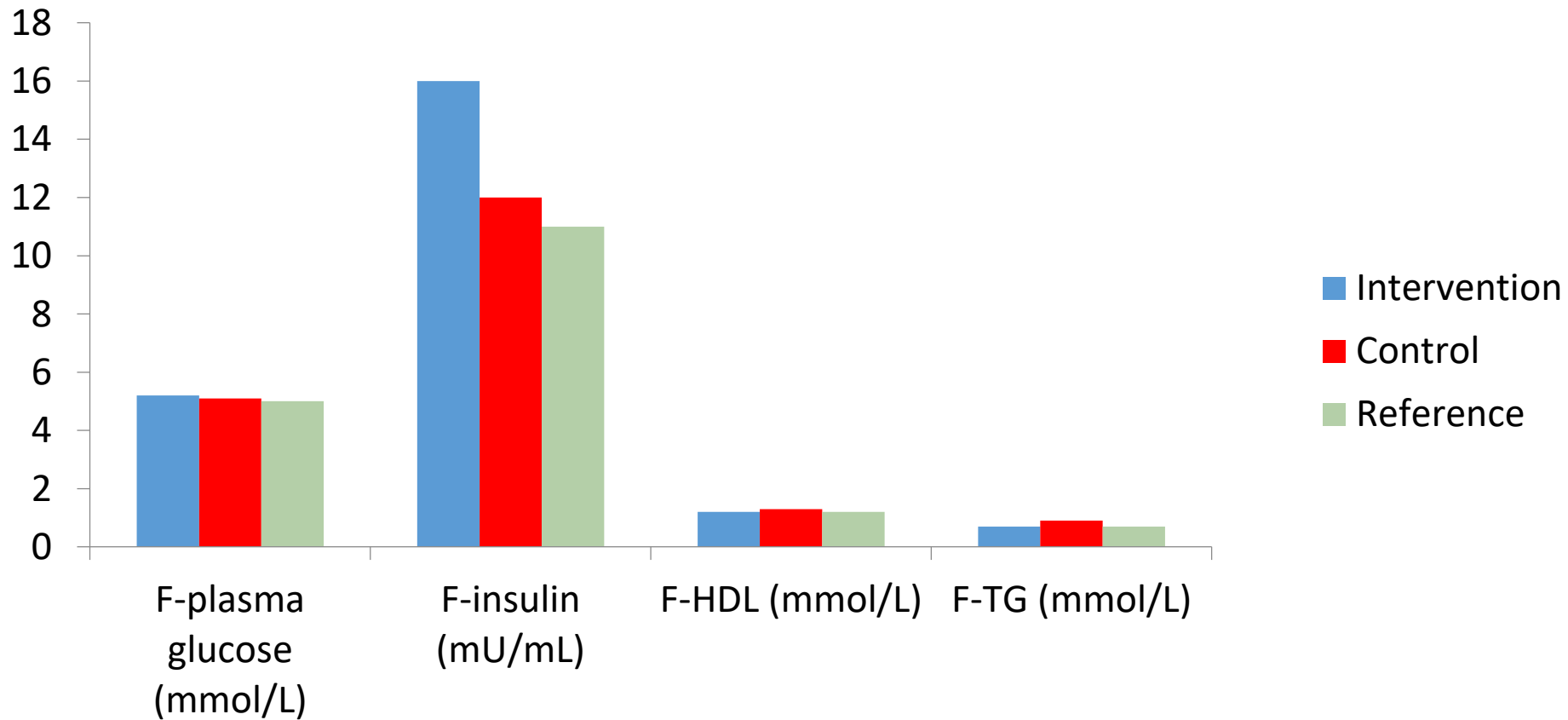
Aim

To study the effect of lifestyle intervention during pregnancy among obese women on offspring body size and metabolic risk factors in 2.5-3 year old offspring

Body Composition by Dual Energy X-Ray



Results



i-WIP (*International Weight Management in Pregnancy*) Collaborative Network

Effect of diet and lifestyle interventions in pregnancy on
maternal and fetal outcomes
Individual Participant Data (IPD) meta-analysis



Chief investigator: Prof. Shakila Thangaratinam, QMUL, UK

Effect of diet and physical activity based interventions in pregnancy on gestational weight gain and pregnancy outcomes: meta-analysis of individual participant data from randomised trials

The International Weight Management in Pregnancy (i-WIP) Collaborative Group

[thebmj](#) | *BMJ* 2017;358:j3119 | doi: 10.1136/bmj.j3119

36 studies from 22 countries, n= 12.526

- Gestational weight gain
- Composite maternal outcomes
- Composite offspring outcomes

RESEARCH ARTICLE

Open Access

The effects of dietary and lifestyle interventions among pregnant women with overweight or obesity on early childhood outcomes: an individual participant data meta-analysis from randomised trials



Jennie Louise¹, Amanda J. Poprzeczny^{1,2}, Andrea R. Deussen¹, Christina Vinter^{3,4}, Mette Tanvig³, Dorte Moller Jensen^{3,4,5}, Annick Bogaerts^{6,7}, Roland Devlieger⁸, Fionnuala M. McAuliffe⁹, Kristina M. Renault^{10,11}, Emma Carlsen¹², Nina Geiker¹³, Lucilla Poston¹⁴, Annette Briley^{14,15}, Shakila Thangaratinam¹⁶ and Jodie M. Dodd^{1,2*}

IPD childhood follow-up

- Pre-school aged children born to women with overweight or obesity during pregnancy are themselves at risk of high BMI (30% having a BMI z-score above the 90th percentile)
- No evidence of an effect on childhood weight, adiposity, or dietary and physical activity patterns at 3–5 years of age



HERAFORTÆLLER

VEJLEDNING TIL FOREBYGGELSE
KROGEMAGADE 13
2000 LUNDENHUSE

VEJLEDNING
WWW.VEGGAARDEN.DK

FOREBYGGELSE AF OVERVÆGT BLANDT BØRN OG UNGE

42

JENS HOLTGAARD-ØRSKOV
LISE GELDERHOLM
PERNILLE DALS
BERIT LUNTHAL HERNIMAN

TERESA VICTORIA JENSEN
LENE HERNIMAN
BIBI LUNDHOLM
CAROLINA LUNDHOLM

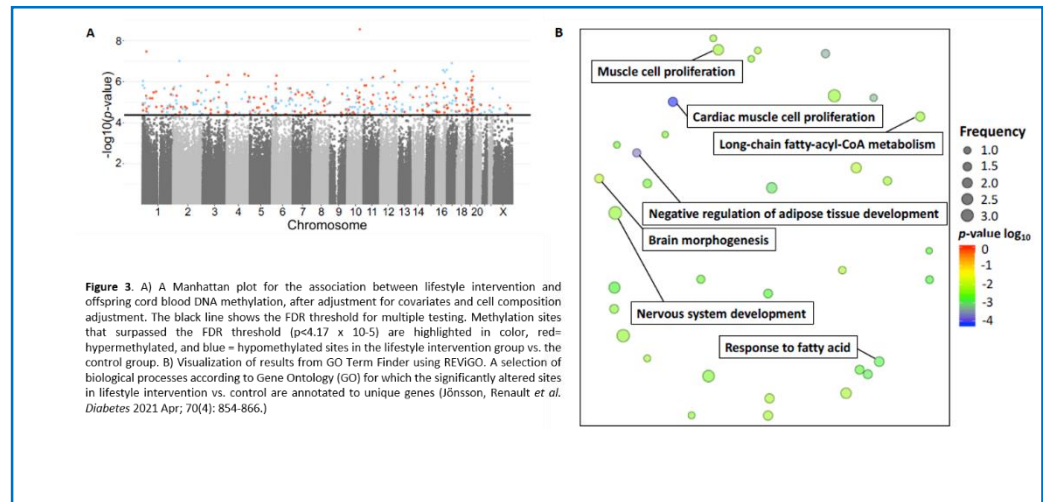
MARIE LUNDHOLM
THOMAS LUNDHOLM
ULLA TØRT
JENS NATHAN LUNDHOLM

- Forskere har ingen ide om hvordan overvægt hos børn kan forebygges
- Vi skal tænke nye veje

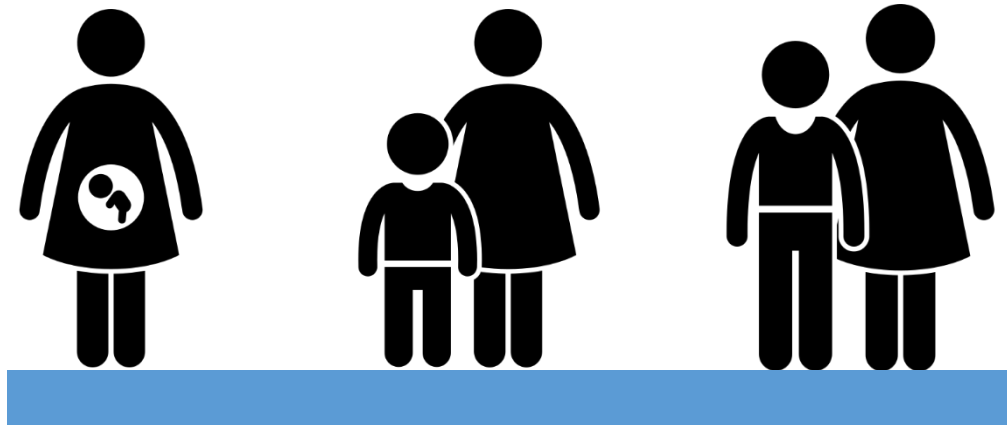
TOP-study - Epigenetics

Lifestyle intervention in obese pregnant women was associated with :

- 379 epigenetic cord blood DNA methylation changes
- genes linked to SNPs associated with birth weight, obesity, adiposity, and type 2 diabetes by GWAS have been also annotated to sites that have altered DNA methylation
- offspring to mothers included in the lifestyle intervention were born with more lean mass
- methylation at 17 sites partially mediates the effect of the lifestyle intervention on lean mass in the offspring.



LiP-TOP-Fit study



*Sustainability of lifestyle intervention in pregnancy
to prevent obesity in two generations*

Primary outcome: Fat Mass Index



CHRISTINA VINTER

KRISTINA RENAULT

GRETE TEILMANN

Pre-conception intervention trials

The PRE-STORK-trial

Healthy lifestyle before and during pregnancy to prevent childhood obesity

- Pre-pregnancy intervention in women with BMI > 27 planning pregnancy
- RCT
- Calorie restriction 8 weeks
- Maintenance lifestyle intervention until and during pregnancy
- Primary outcome: Neonatal adiposity (total fat mass)

PREPARE CHILD

PRE-Pregnancy weight loss And REducing CHILdhood overweight – a randomized controlled study

- Inter-pregnancy and pre-pregnancy intervention
- RCT

Take-home messages

Er overvægt et problem i obstetrikken?

- Mere end hver 3. gravid er overvægtig
- Der er dosis-respons sammenhæng mellem maternel BMI og komplikationer i graviditeten
- Øget vægt før, under og mellem graviditeter har stor betydning for risici
- Maternal overvægt øger risikoen for overvægt i børnealderen
- Begrænset succes fra livsstilssintervention i graviditeten
- Vægttab *før* graviditet er en vigtig strategi for at reducere komplikationer samt overvægt i næste generation

A black and white photograph showing a close-up of a baby's foot being held gently by an adult's hand. The foot is the central focus, with its toes and the pattern of lines on the sole clearly visible. The adult's fingers are visible around the foot, providing a sense of care and protection. The background is softly blurred, emphasizing the hand and foot.

TAK fordi I lyttede
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