



Comité économique et social européen
European Economic and Social Committee

Early Intervention in Maternal and Child Health

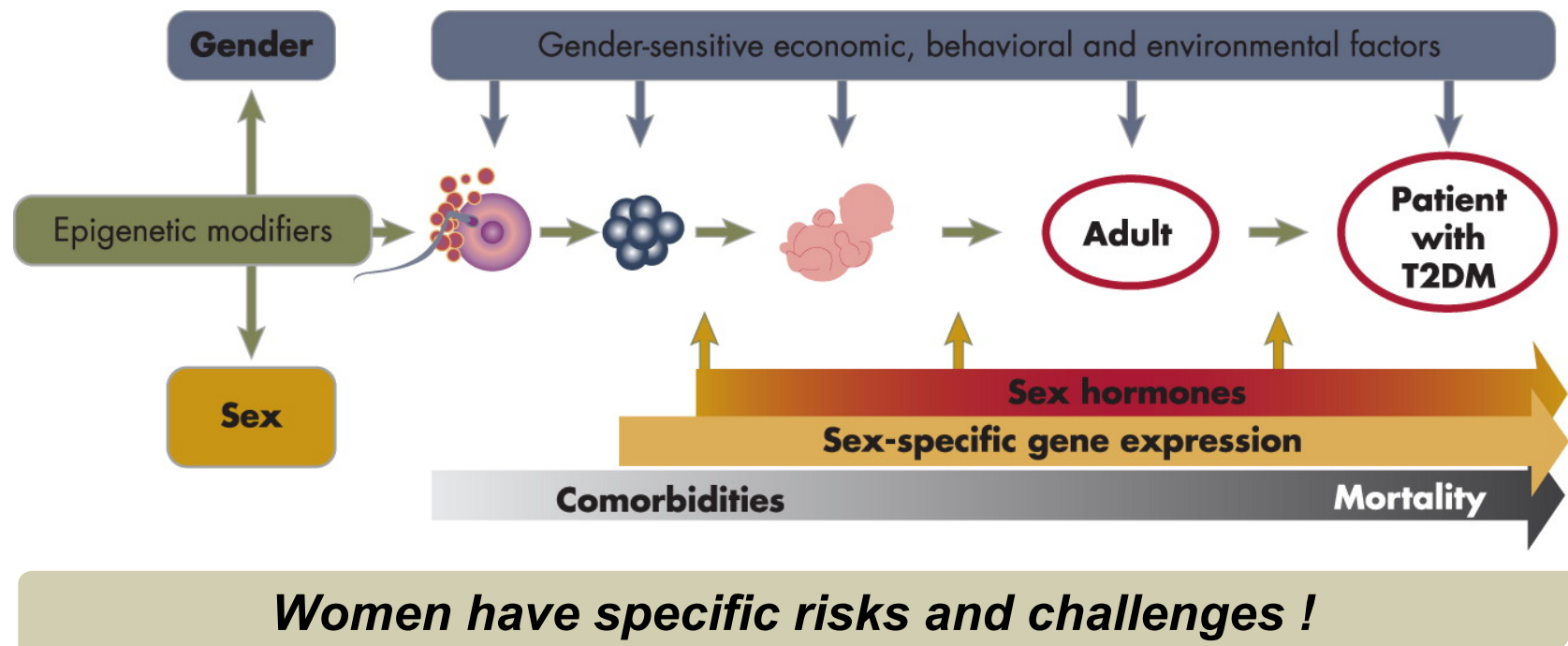
Diabetes and pregnancy

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Brussels, Belgium

Celebrating 21 Years of Setting the Agenda in Women's Health

Lifelong impact & interaction between sex & gender on development & outcomes of diabetes



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CAMPAIGN 2017: **Women and Diabetes**



~200 million women live with diabetes.



50% of women with hyperglycemia in pregnancy are younger than 30 years.



1 out of 7 births is affected by diabetes.



Women with type 1 diabetes have a higher risk of abortions and babies with malformations.



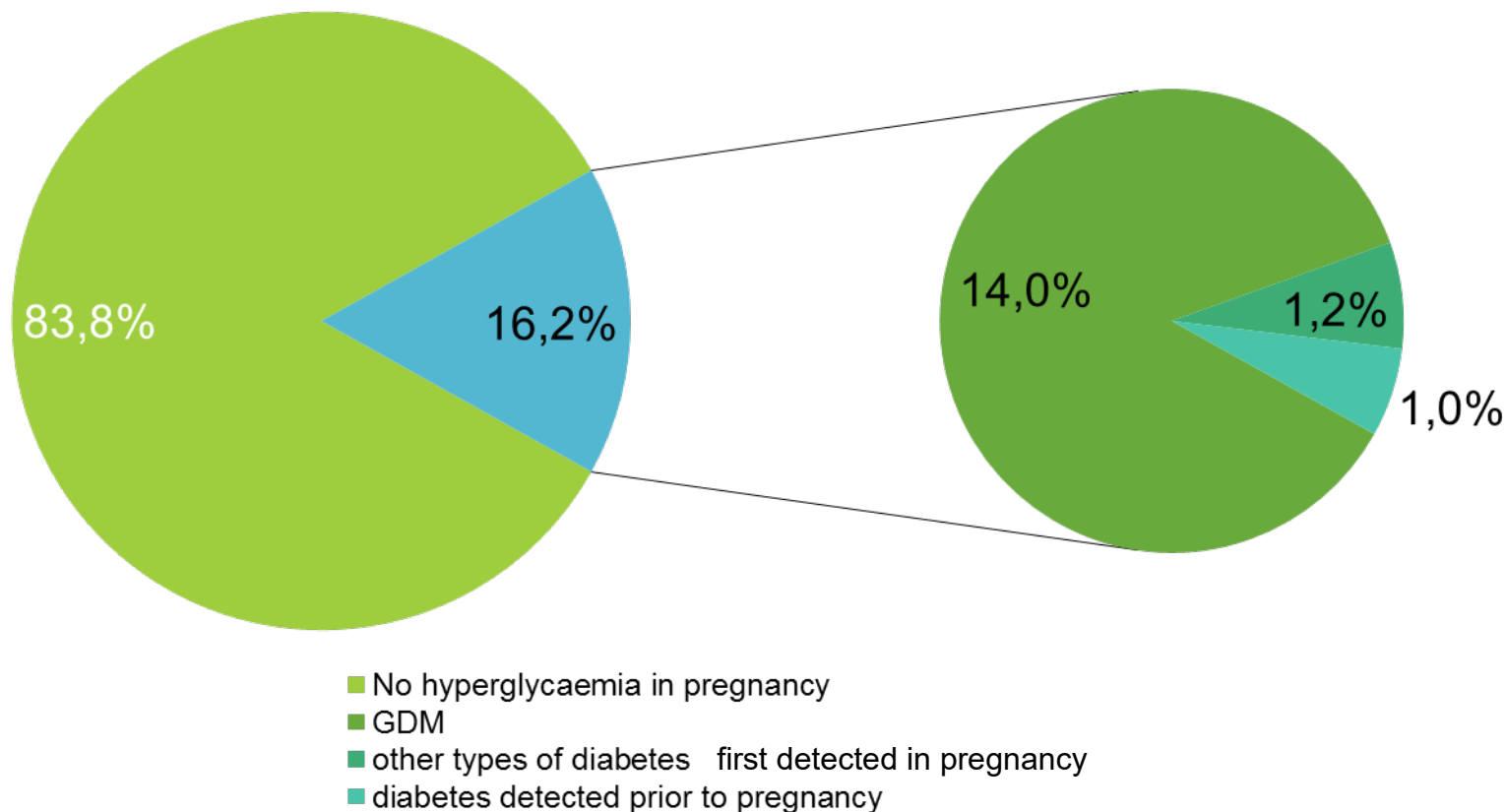
**International
Diabetes
Federation**



world **diabetes** day

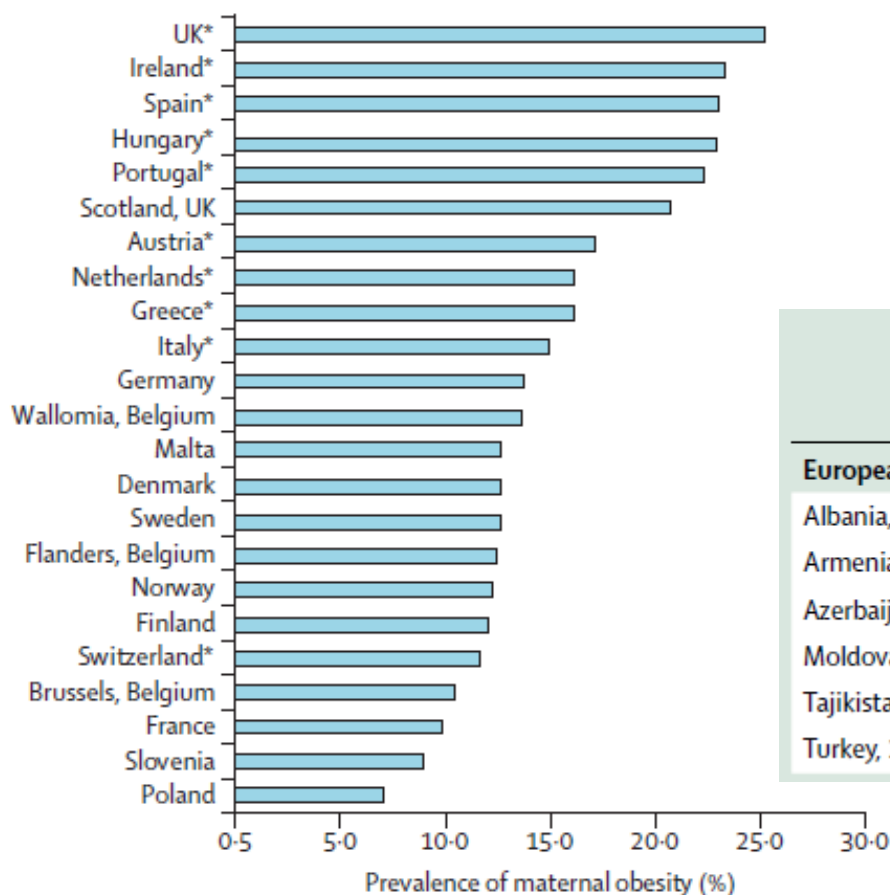
Diabetes in pregnancy Global estimates 2017

Hyperglycemia in pregnancy



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Distribution of maternal obesity from Euro-Peristat database and WHO



	Prevalence of obesity in women of reproductive age*	Prevalence of obesity in pregnant women
European region		
Albania, 2008–09	36.0%	21.2%
Armenia, 2005	15.5%	11.6 %
Azerbaijan, 2006	17.9%	10.0%
Moldova, 2005	18.2%	12.7%
Tajikistan, 2012	9.5%	5.0%
Turkey, 2003	29.4%	20.7%

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Obesity



- Metabolic syndrome
 - Insulin resistance
 - Hypertension
 - Hyperlipidemia
- Endothelial dysfunction
- Impaired fibrinolysis
- Inflammation

**GDM risk increases with increasing maternal BMI
(meta analysis: overweight OR 2.1; obesity OR 3.6;
extremely obese OR 8.6)**

DALI: 23% GDM in early pregnancy → significant insulin resistance, many characteristics of metabolic syndrome.

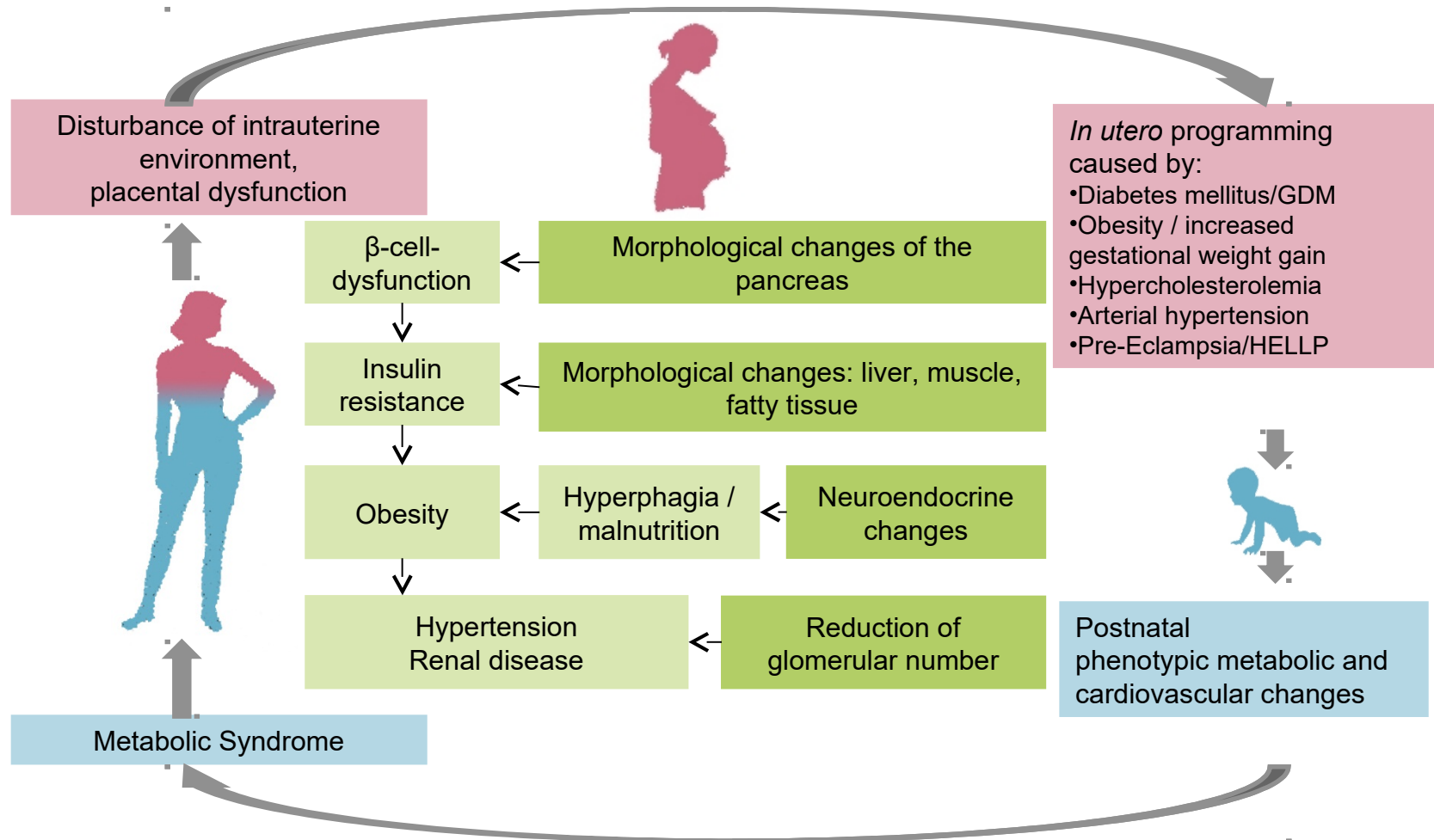
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Risk of Adverse Pregnancy Outcomes with different types of diabetes, obesity and being overweight vs. normal

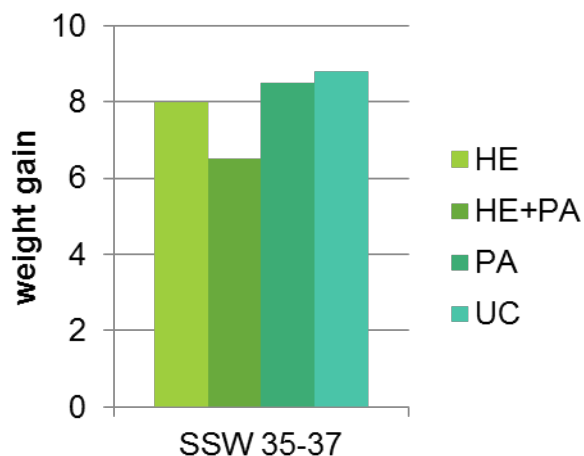
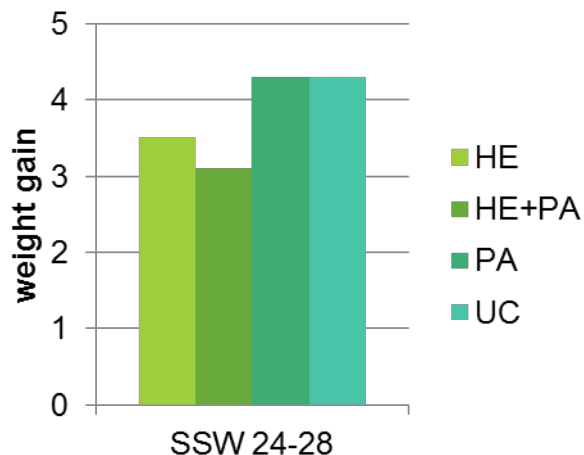
	Pregest. DM	T1DM	GDM	OBESITY	OVERWEIGHT
Macrosomia/LGA	4.91	4.5	1.65-3.27	1.5-4.5	1.2-1.6
Hypertension	14.16	1.53	2.7	3.8-10.6	1.9-2.6
Pre-eclampsia	3.97	4.47	1.61-1.69	2.1-3.9	1.3-2.0
Pre-term delivery	2.54	4.5-7.0	1.28-2.18	0.9-2.1	0.8-1.1
Stillbirth	2.9	3.34-4.7	1.17	1.2-2.4	1.2-1.5
Perinatal death		3.29		1.0-2.7	1.0-1.8
Intensive care	5.45		1.41-4.11	1.3-1.4	0.9-1.2
Hypoglycaemia	56.8		2.75-15.07	0.9-2.6	0.8-1.2
Malformations		1.7-3.4		1.7 obese 3.11 very obese	1.22

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In utero programming



Prevention in obese pregnant women?



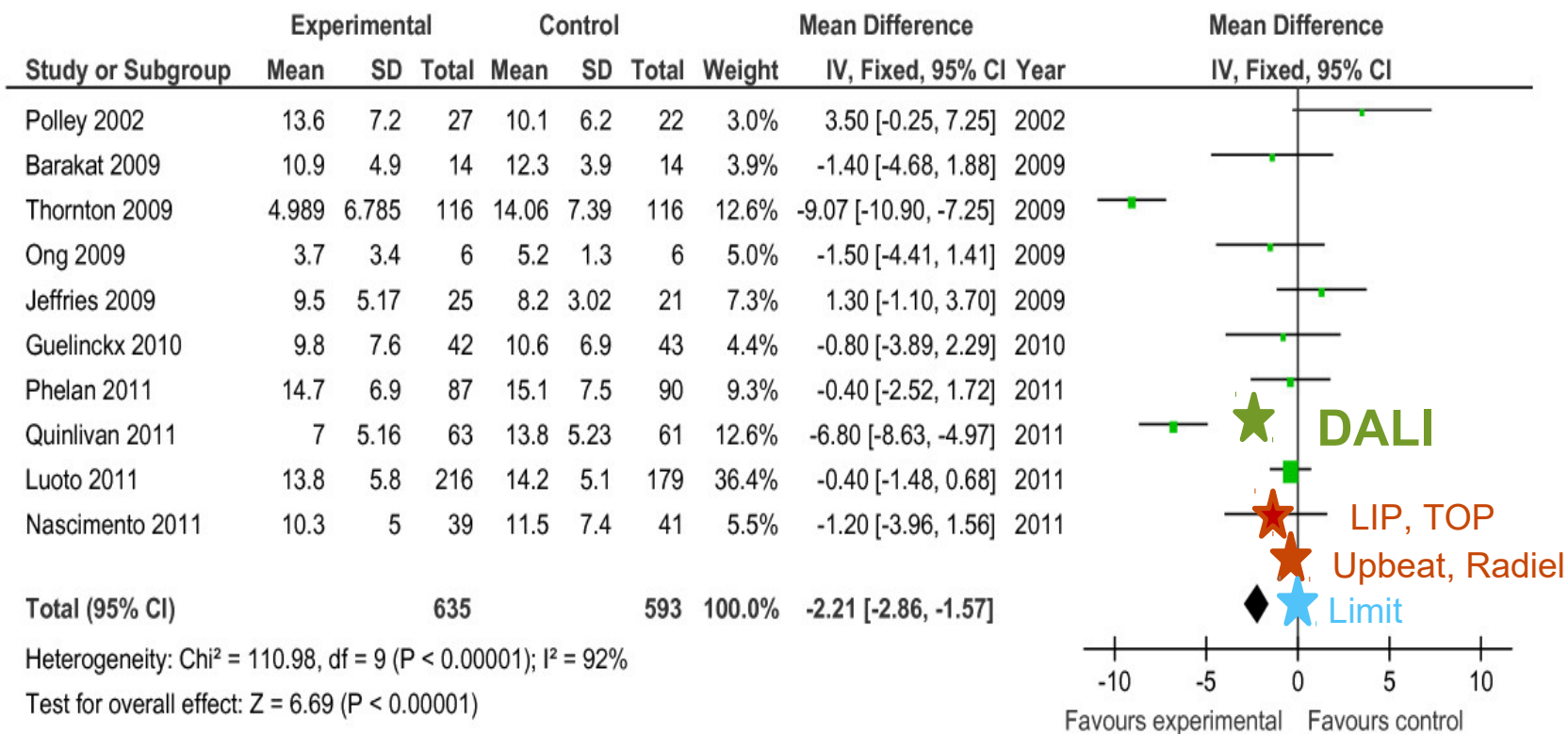
The **combined healthy eating (HE) + physical activity (PA) intervention** was able to **limit gestational weight gain** more effectively as usual care (UC), HE or PA alone.

However, lifestyle changes alone are unlikely to prevent GDM among obese women.



Too late! Lifestyle changes must occur prior to pregnancy.

Lifestyle RCTs: Gestational Weight Gain Limitation



10 RCT N = 1228: -2.21 (-2.86 kg to -1.59 kg)

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Glucose tolerance postpartum Women with prior GDM

- **Up to 60% develop glucose abnormalities within 10 years**
- GDM serves as an independent and strong risk factor for progression of T2DM (**7fold higher risk**).
- **Low participation** in postpartum **follow-up testing (oGTT)** and **low compliance**.

Potential modifiable risk factors

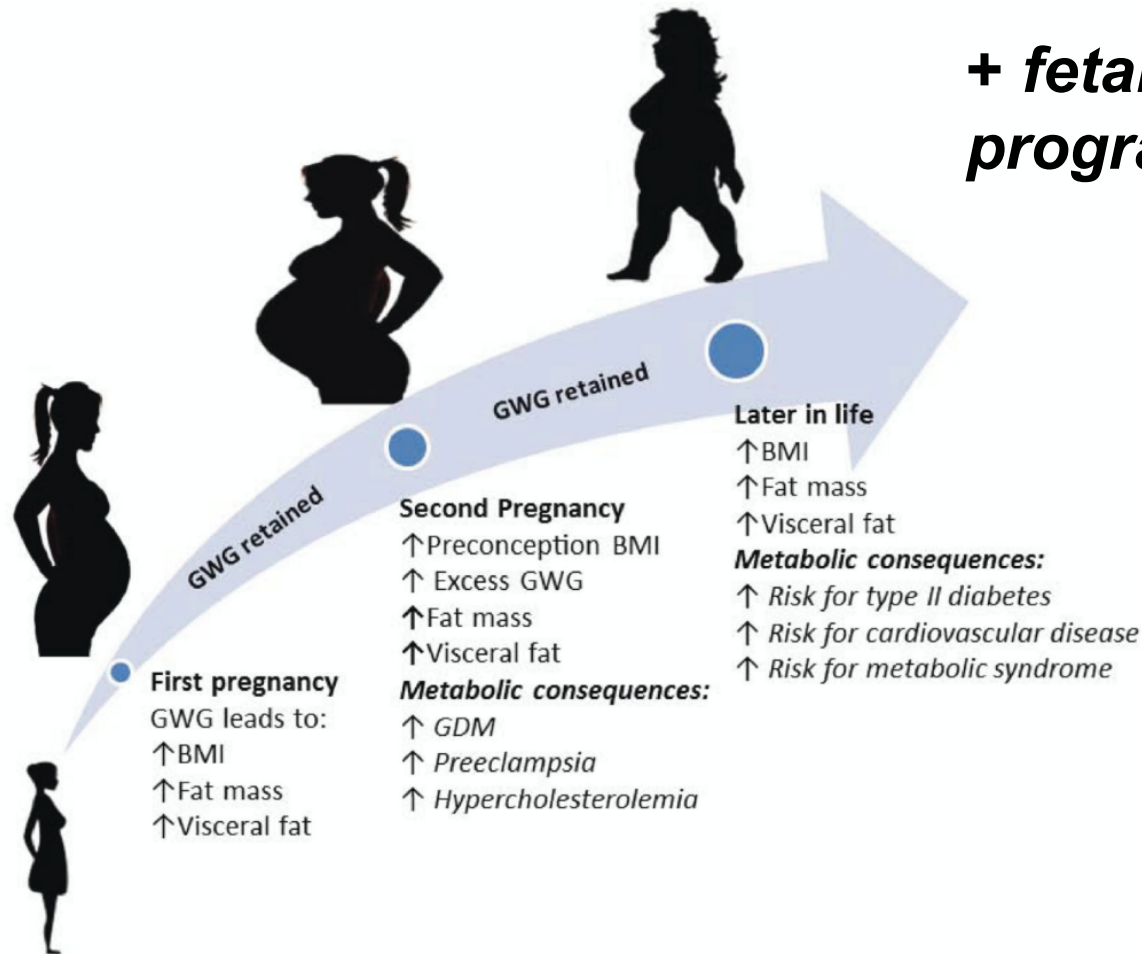
- Lifestyle modification (35%) as well as metformin (40%) are highly effective in reducing progression to diabetes.
- Physical activity and mediterranean diet reduce weight gain and manifestation of glucose disorders.

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Bellamy et al. 2009 Lancet; Göbl et al. 2014 Acta Diabetol; Blatt et al. 2011 Obstet Gynecol; Zera et al. 2015 Obstet Gynecol; Cheung NW et al. 2003 Diabetes Care, Bao W et al. 2014 JAMA Intern Med and 2015 Diabetologia

Weight gain in pregnancy + postpartum weight loss

**+ fetal
programming...**

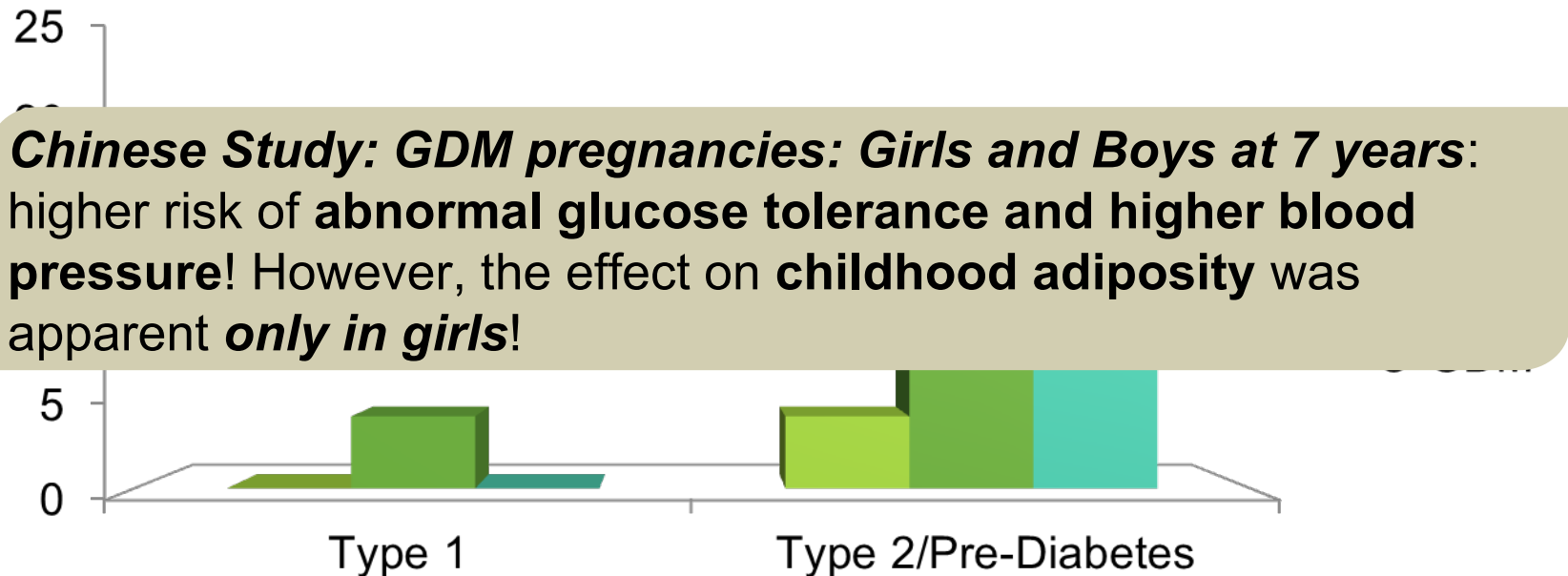


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Diabetes and pre-diabetes - Offspring's follow-up (18-27 years of age)

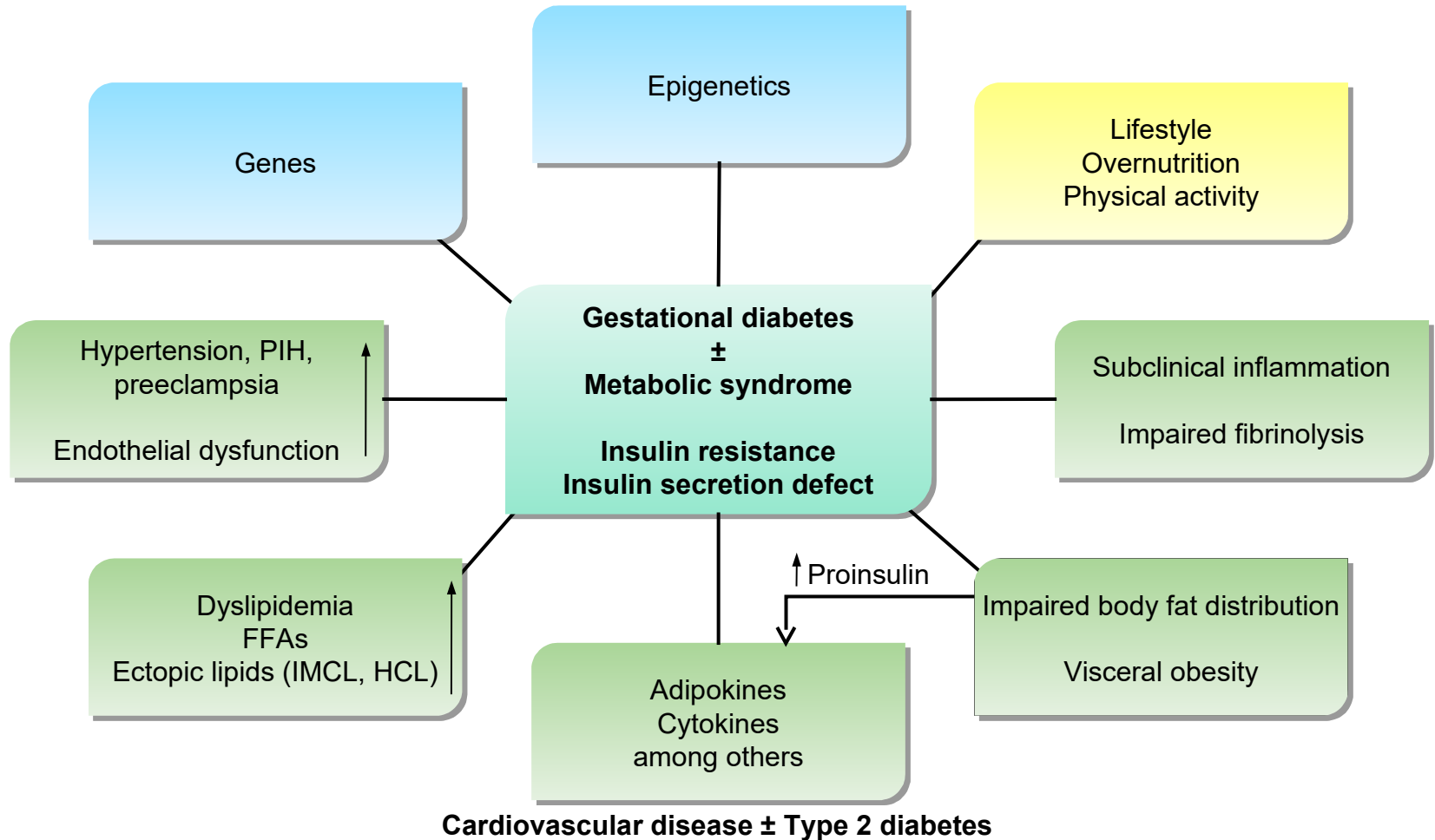
8-fold increased Risk in O-GDM compared to O-BP

The higher the maternal blood glucose in the third trimester, the higher the offspring's risk



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CVD risk factors in women with GDM or metabolic syndrome

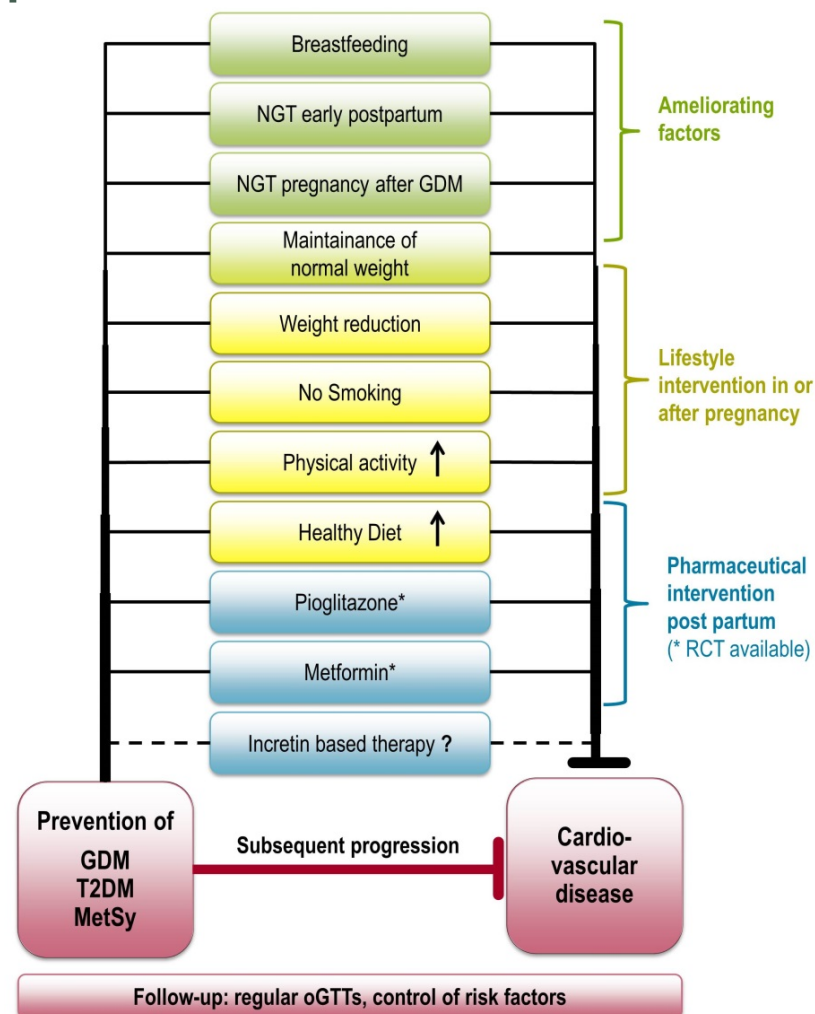


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Prevention options in women with GDM

Early prevention of risk factors is the key!

- Regular visits are important to control for metabolic or other risk factors in high risk patients.
- Lifelong monitoring is recommended for all with diagnosed abnormalities of glucose metabolism, starting at the detection of prediabetes.



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Thank you for your attention!

**OUR
RIGHT TO
A HEALTHY
FUTURE**

1 in 10 women
are living with diabetes.

Many do not have
access to education,
treatment and care.

**ACT TODAY TO
CHANGE TOMORROW**
www.worlddiabetesday.org



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