



# **EPOCH**

## **Elucidating pathways of child health inequality**

# **Obesity**



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## The EPOCH collaboration

Including high quality  
Prospective Child Cohorts

Representing countries with  
different level of inequity in the  
community

Canada, United States, Australia,  
United Kingdom, Sweden, The  
Netherlands

## Upcomming analysis of different outcomes:

Obesity

Chronic conditions

Asthma

Dental health

ADHD

Physical activity

and more to come....

# Obesity

## Participating cohorts

**ABIS** Sweden

**MCS** "the Millenium cohort" United Kingdom

**LSAC** Australia

**ELDEQ** Canada, Quebec

International comparative studies

**Harmonization of data**

# Objectives and hypothesis

**To** analyze if Socioeconomic status (measured by mother's educational level and family income) is associated to the risk of childhood obesity aged 8-11 years.

**To** compare socioeconomic gradients between the cohorts/countries.

**Further,** to Identify possible mediators of SES differences.

# Economical inequalities measured by Gini index (2015) for the participating countries (ref World Bank)

Sweden ABIS 29.2

UK MCS 33.2

Canada ELDEQ 34.0

Australia LSAC 35.8

(compared to USA 41.5)

# Prevalence of child obesity

## – the primary outcome

The prevalence of child obesity aged 8-11 years according to the IOTF definition in the four cohorts:

<b>ABIS</b> (Sweden) age 8-9 yrs	2.4 %
<b>LSAC</b> (Australia) age 8-9 yrs	6.6 %
<b>MCS</b> (United Kingdom) age 10 yrs	6.2 %
<b>ELDEQ</b> (Canada) age 10 yrs	6.6 %

*IOTF: the International Obesity Task Force*

## Prevalence of some maternal factors between the cohorts:

	<b>ABIS</b>	<b>MCS</b>	<b>LSAC</b>	<b>ELDEQ</b>
Low education	3.7	20.8	11.9	23.1
Foreign born	4.9	17.2	36.8	6.8
Maternal age <20	0.9	6.9	3.3	2.4
Smoking pregnancy	5.9	19.7	16.7	23.1
Excl breastfeeding (months)	4.6	-	3.1	2.0
Single parent	2.7	14.2	9.3	15.0
Mother obese	7.9	11.1	23.9	13.0

Household income was divided into quintiles for each country:

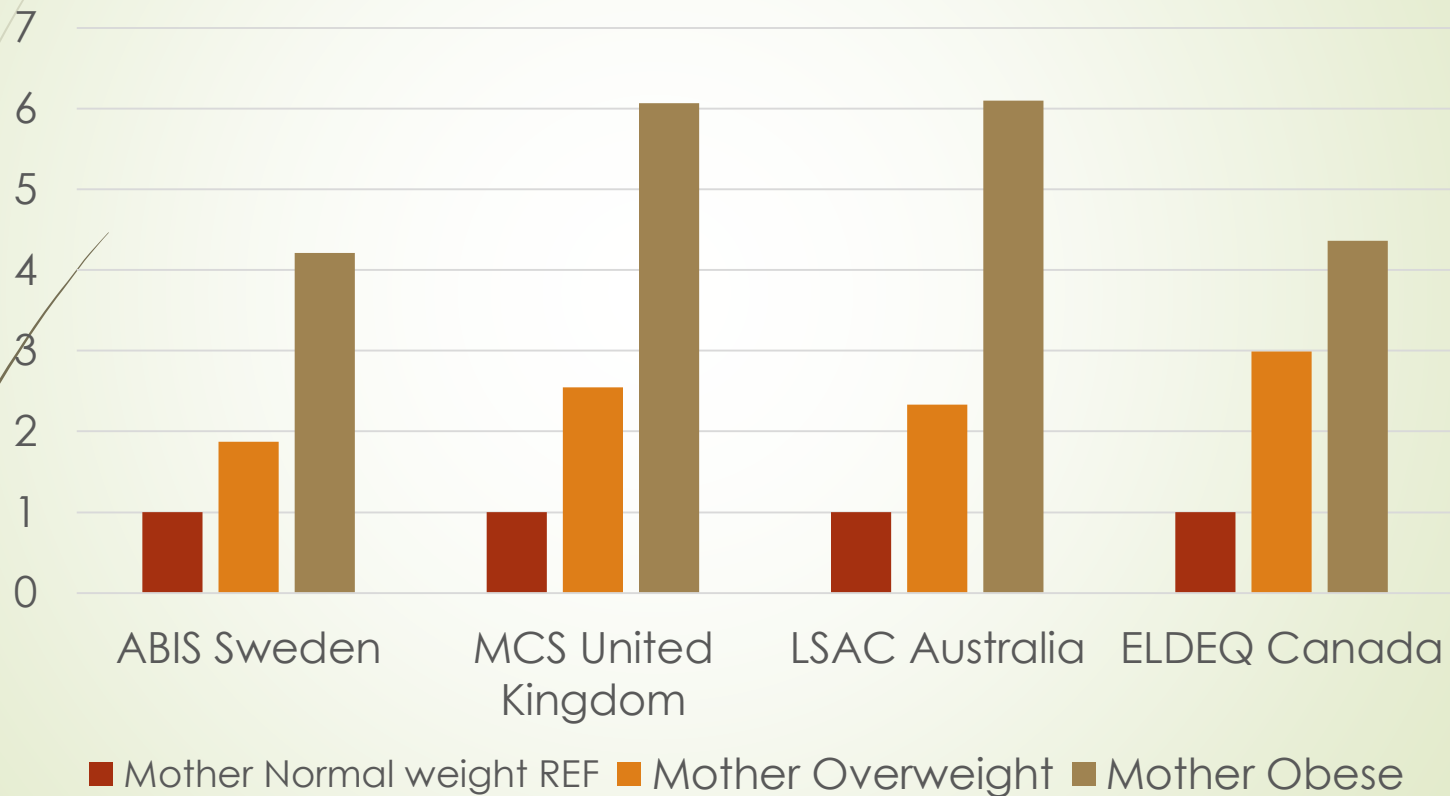


# Mother weight and risk for child obesity

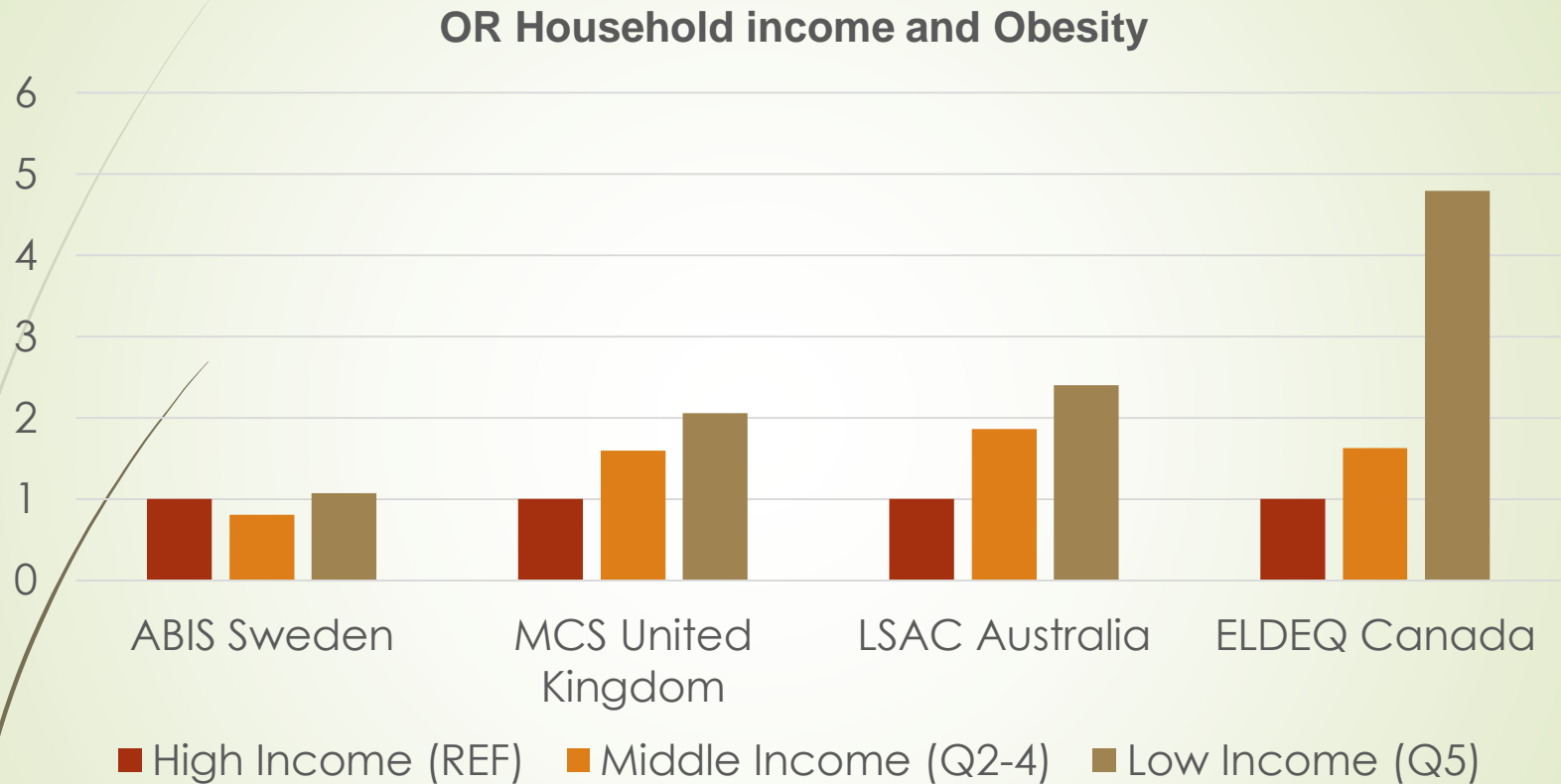
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Mother weight and child obesity risk (OR)

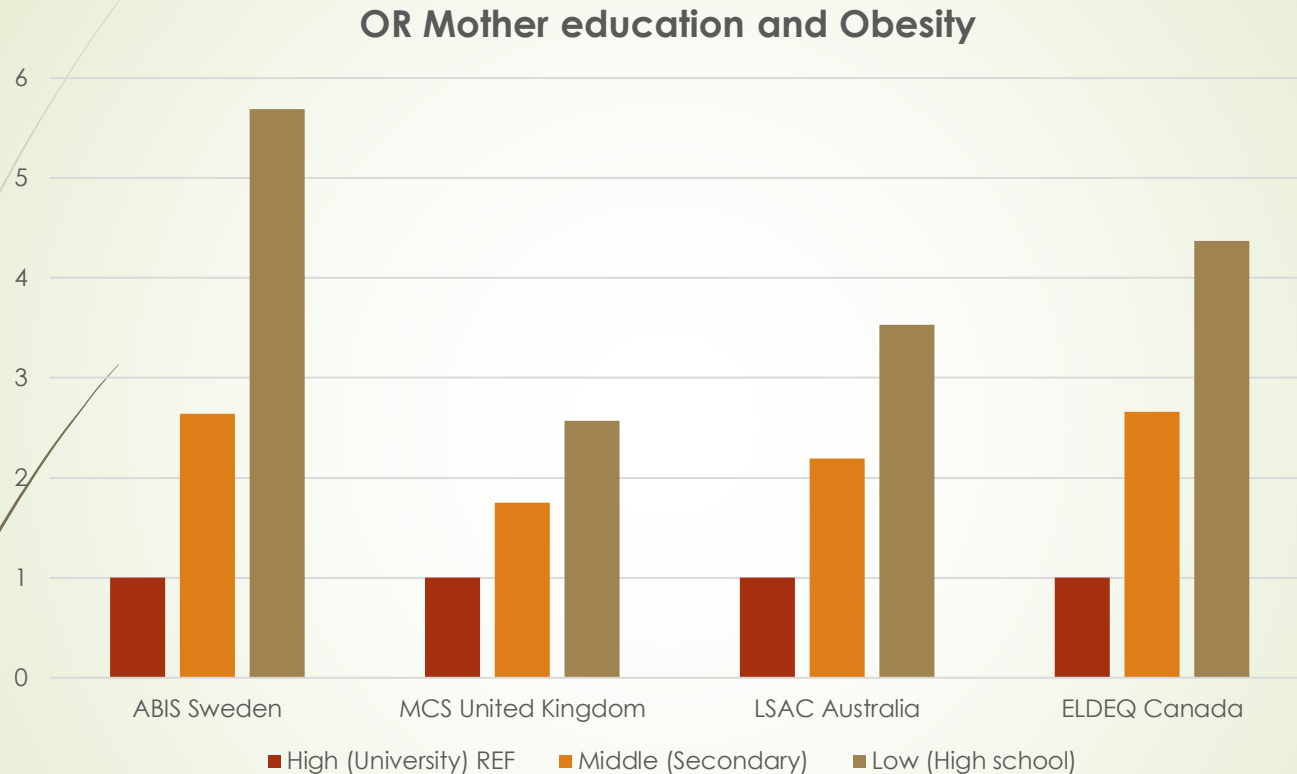


# Odds Ratios and the likelihood of being obese at follow-up for different household income in the cohorts.



Data adjusted for child's sex, birthweight, mother's country of birth and maternal age at birth.

# Odds Ratios and the likelihood of being obese at follow-up and mother educational level in the cohorts.



Data adjusted for child's sex, birthweight, mother's country of birth and maternal age at birth.

**Next step is Mediation analysis with main research question:**

**How much of the socioeconomic differences in obesity risk could be explained by different mediators?**

**Direct effect** from socioeconomic status to obesity.

**Indirect effect** on this association mediated by different potential factors like:

Mother/father overweight, child's screentime, breastfeeding, smoking during pregnancy, single parenthood, mother ethnicity, child's birth weight, sweets and drinks consumption.

# Some conclusions....



- Clear Socioeconomic differences in Obesity risks across the 4 cohorts (countries) even after adjustments for potential confounders and mediators.
- Maternal/paternal overweight might also be an important risk factor for childhood obesity and a mediator of SES differences across all 4 cohorts.
- The upcoming mediation analysis will elucidate the relative importance of all the potential mediators.