

# EUSUHM 2017

Leuven

# Specific language impairment is associated with maternal and family factors

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## Language delay

- › Primary developmental language disorders
  - › **Specific Language Impairment**
  - › **SLI**
- › Secondary developmental language disorders
- › Insufficient language input

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## Specific Language Impairment

- › Prevalence SLI
  - › Range 2 – 12%
  - › 7 % (Tomblin)
  
- › ADHD            5%
- › ASD             1%



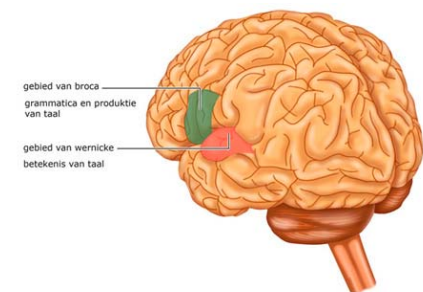
Most common developmental disorder

# Etiology of Specific Language Impairment

Association between risk factors and SLI?



insight into etiology of isolated  
developmental disorders



## Literature on SLI and risk factors

literature is sparse and contradictory

Review:

US Preventive Services Task Force

Risk factors for SLI:

- Family history
- Male sex
- Perinatal risk factors

Wallace, I. F., Berkman, N. D., Watson, L. R., Coyne-Beasley, T., Wood, C. T., Cullen, K., & Lohr, K. N. (2015). Screening for Speech and Language Delay in Children 5 Years Old and Younger: A Systematic Review. *Pediatrics*, **136**(2), e448-62. <http://doi.org/10.1542/peds.2014-3889>

## Our study

- › nested case control design
- › cases
  - › children from special needs school for children with severe speech and language difficulties (=SLI)
- › controls
  - › children attending regular education (= typically developing)

matched by date of birth and gender



## Our study, cases



Special needs schools for children with severe speech and language difficulties

- › strict criteria
- › multidisciplinary teams
- › government regulated

IQ > 85

difference between verbal and intellectual capacities > 1.5 SD

delays in  $\geq 2$  aspects of language skills

 meeting internationally used criteria for SLI

## Our study

### › 506 children

- › cases ( $n = 253$ ): children of a special need school for Severe Speech and Language difficulties (= SLI)
- › controls ( $n = 253$ ): children from school of regular education

matched by date of birth and gender

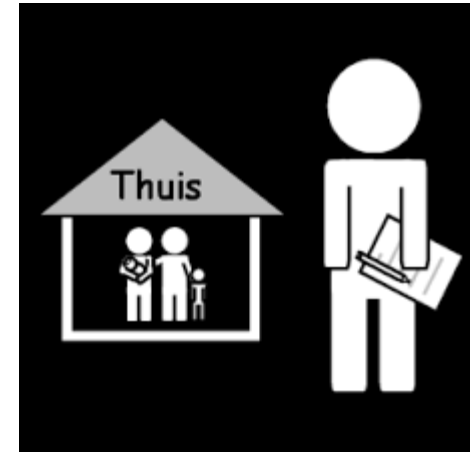



data from Well-child Health Care records

## Our study

Dutch Preventive Well-child Care (95%)

- › data were collected at home visit shortly after birth
- › data registered before diagnosis SLI



 less recall bias

# Measures

From well-child care files:

➤ Prenatal, perinatal and postnatal risk factors

- pregnancy, delivery characteristics

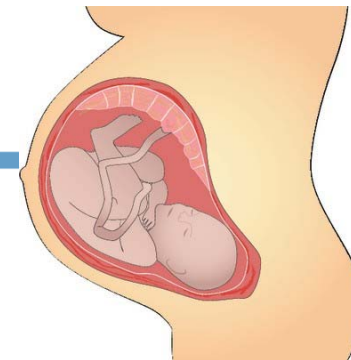
➤ Maternal and family circumstances

- hypertension, use of medication, smoking and alcohol or drugs use during pregnancy, breastfeeding
- age of parents, place in birth order of the child

The image shows a medical form with four sections:

- 6 Zwangerschap** (Pregnancy): Includes fields for duration, type of birth, and various pregnancy-related factors.
- 7 Geboorte** (Birth): Includes fields for birth date, location, and birth characteristics.
- 8 Pasgeboren** (Newborn): Includes fields for birth weight, length, and other newborn characteristics.
- 9 Opname eerste levensmaanden** (First months of life): Includes fields for feeding, growth, and other early life factors.

## Results, pregnancy



	SLI group (n=253)	control group (n=253)	<i>p</i>
Gestation (weeks)	39.7 (1.80)	39.4 (1.99)	0.19
Birth weight (g)	3440 (579)	3426 (633)	0.79

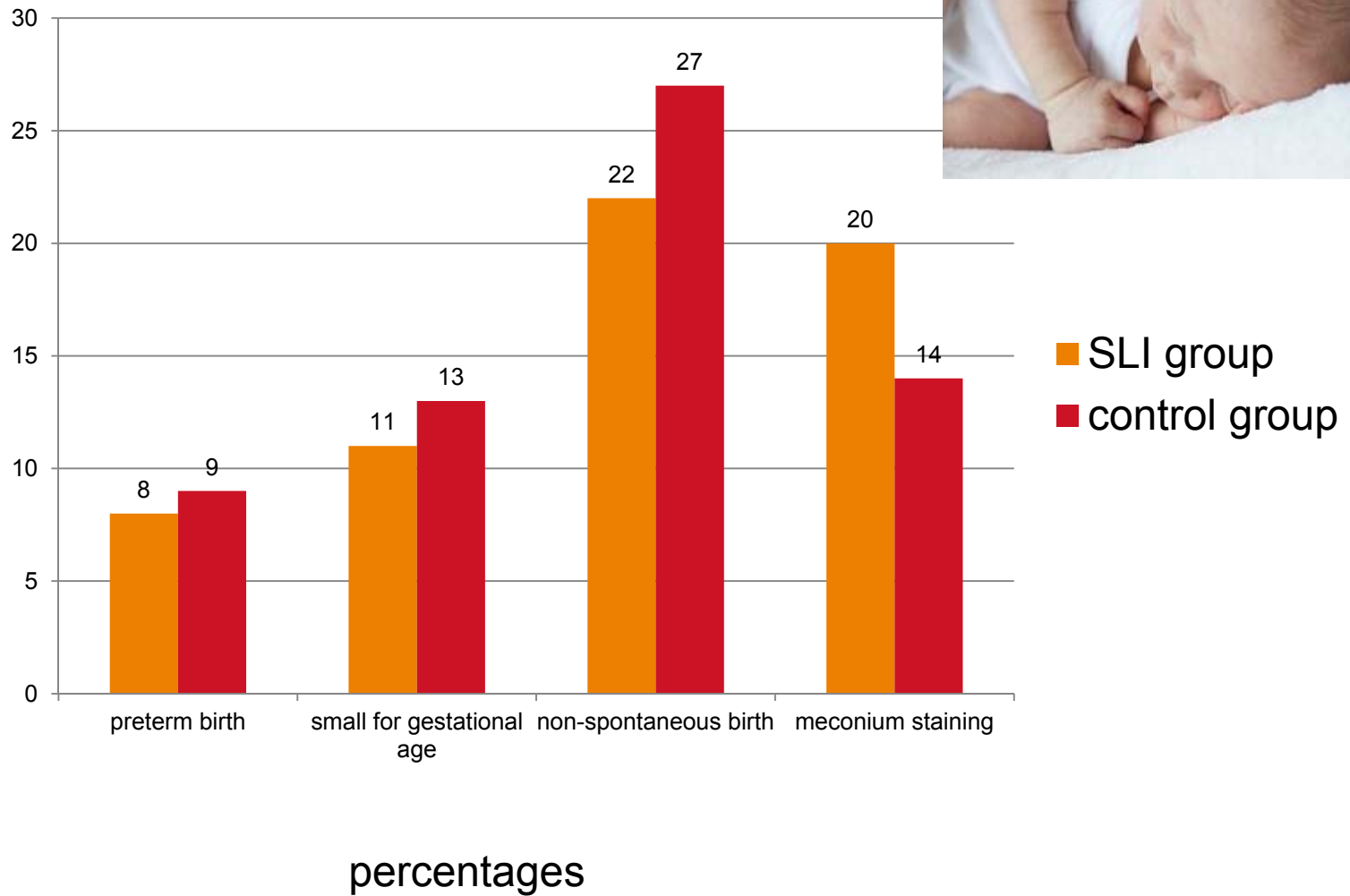
(S.D.)

## Results, delivery

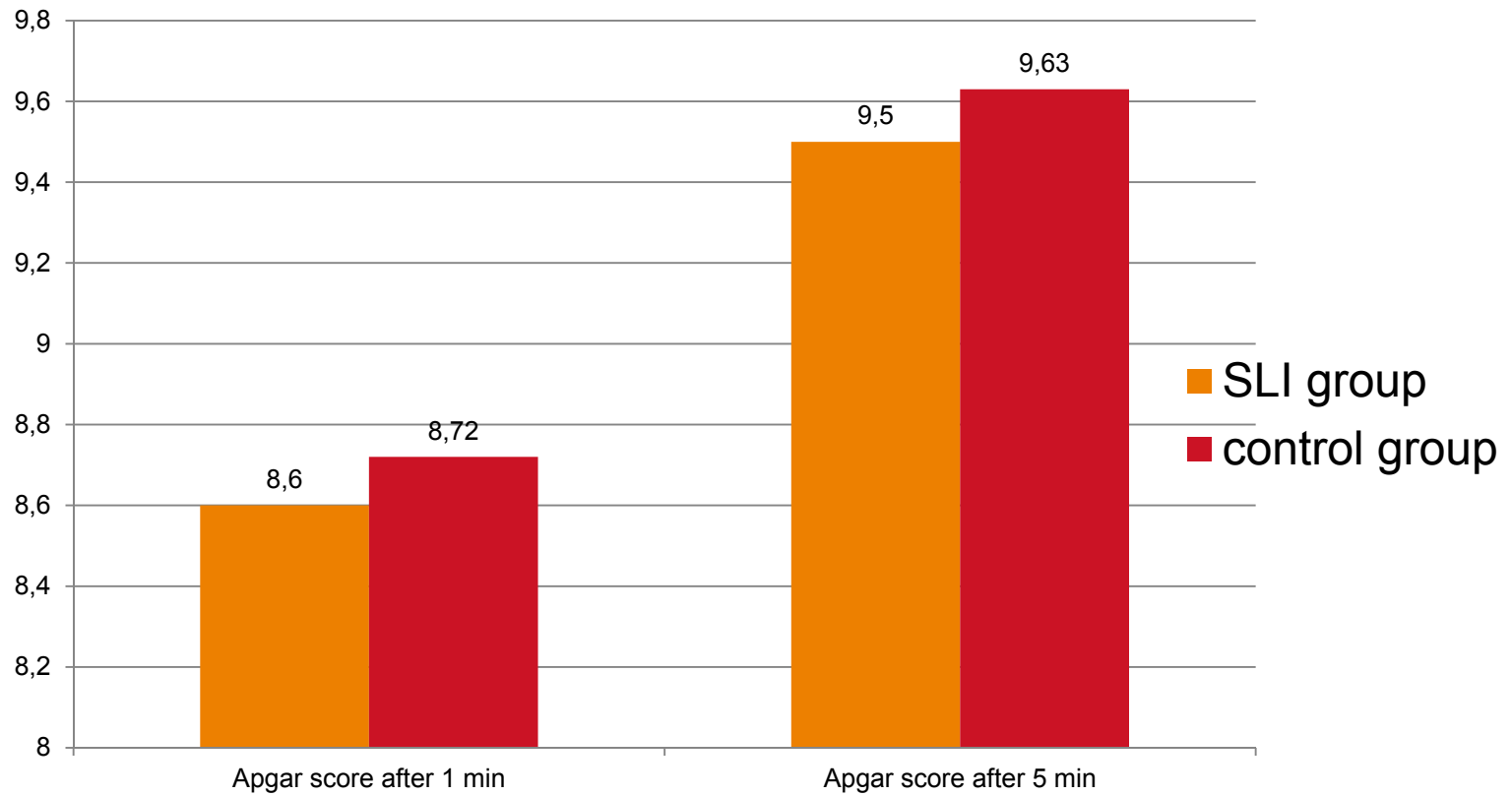
	SLI group	control group	<i>p</i>
Duration of labour (h)	6.22 (7.01)	6.88 (8.53)	0.35
Expulsion (min)	21.3 (31.4)	21.5 (26.0)	0.92

(S.D.)

## Results, perinatal factors

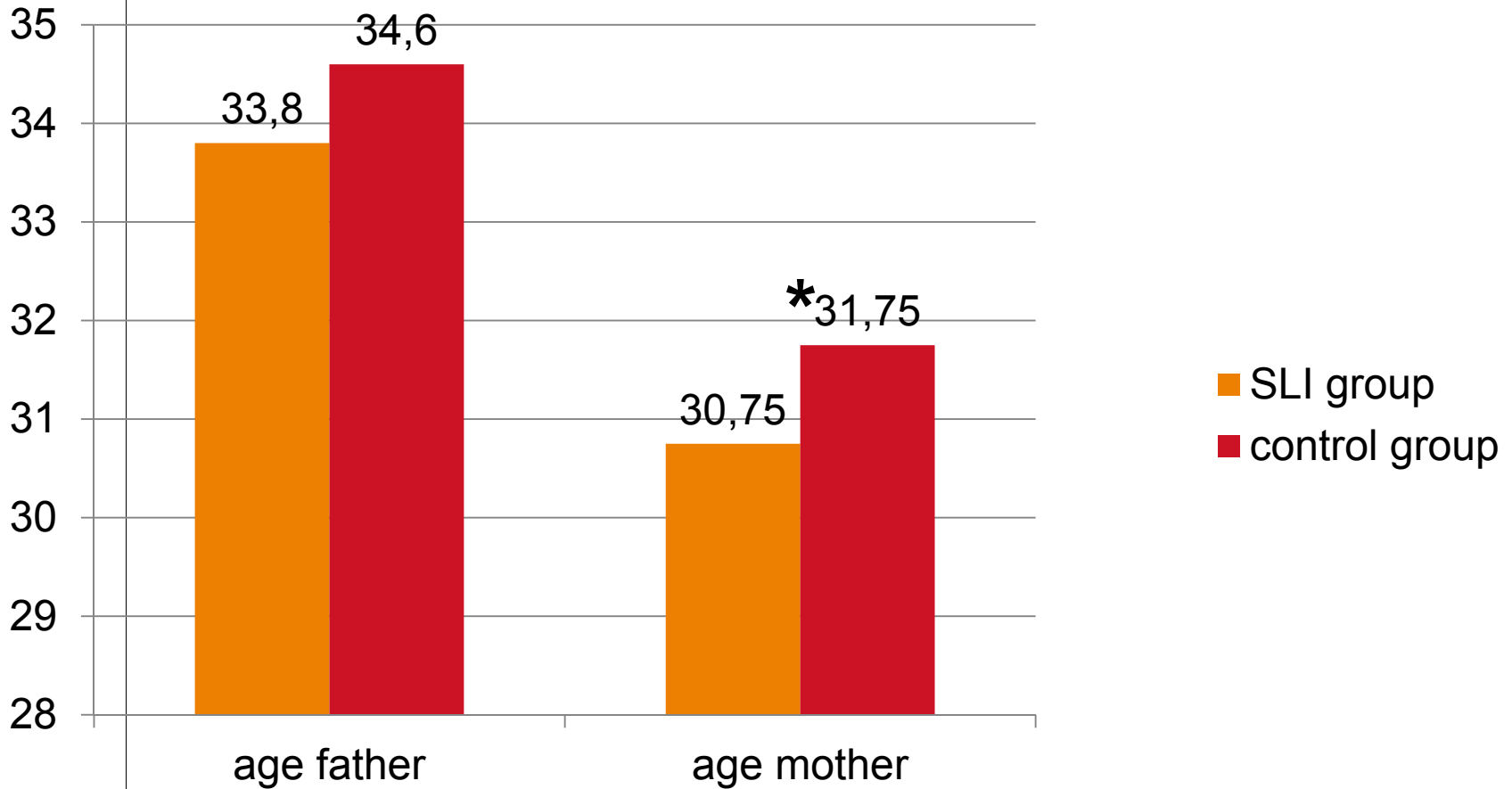


## Results, Apgar scores





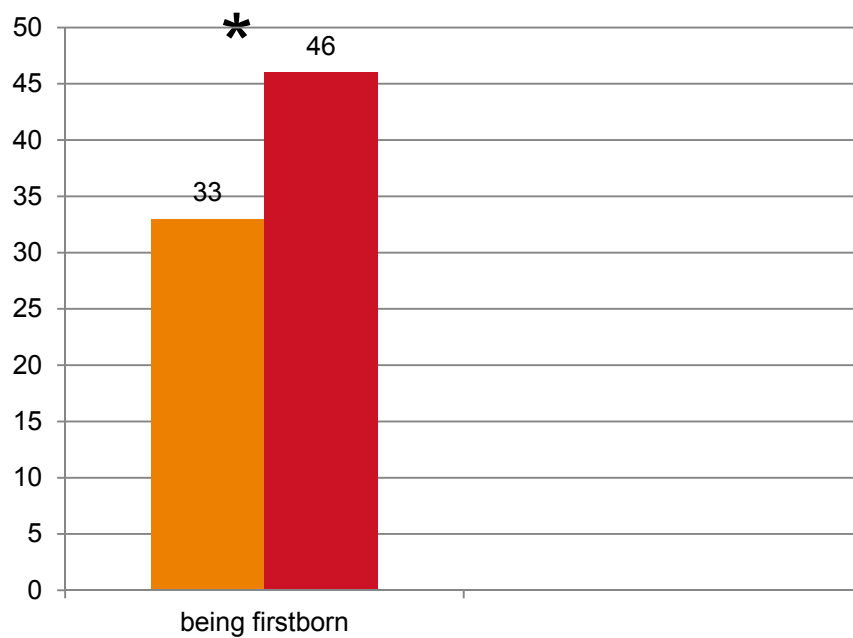
## Results, age of parents



Age in years

\* Statistically significant difference  
( $p= 0,02$ )

## Results, place in birth order

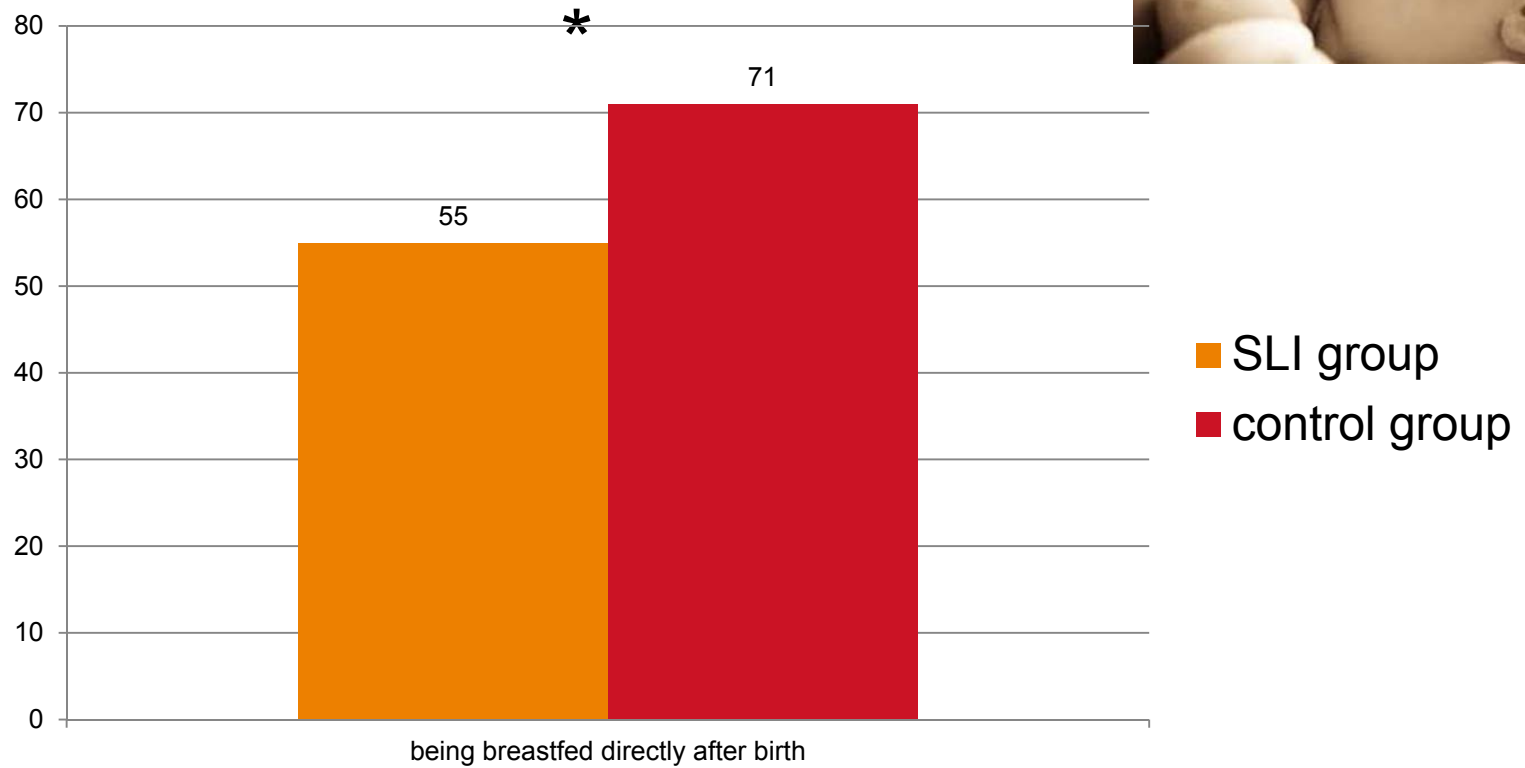


■ SLI group  
■ control group

percentages

\* Statistically significant difference

## Results, being breastfed



percentages

\* Statistically significant difference

## Conclusions

### Risk factors for SLI

- › Family history
- › Male sex
- › ~~Perinatal factors~~

## Conclusions

### Risk factors for SLI

- › Family history
- › Male sex
- › ~~Perinatal factors~~

### Protective factors

- › Older mother
- › Being the first born in the family
- › Being breastfed directly after birth



# Child: care, health and development

B. Diepeveen F, van Dommelen P, Oudesluys-Murphy AM, Verkerk PH.  
Specific language impairment is associated with maternal and family  
factors. Child Care Health Dev 2017

Available from: <http://doi.wiley.com/10.1111/cch.12451>

- › Questions?
- › Thank you for your attention

## Literature, perinatal factors

- › Very preterm born (POPS):
- › < 32 wks or < 1500 g



de Kleine MJ, den Ouden AL, Kollée LA, van Baar A, Nijhuis-van der Sanden MW, Ilsen A, Brand R, Verloove-Vanhorick SP. Outcome of perinatal care for very preterm infants at 5 years of age: a comparison between 1983 and 1993. *Paediatr Perinat Epidemiol.* 2007; Jan:21(1):26-33



## Literature perinatal factors



Very preterm born (POPS):

- › < 32 wks or < 1500 g
- › High risk of multiple developmental disorders
- › Seldom isolated developmental (language) disorder