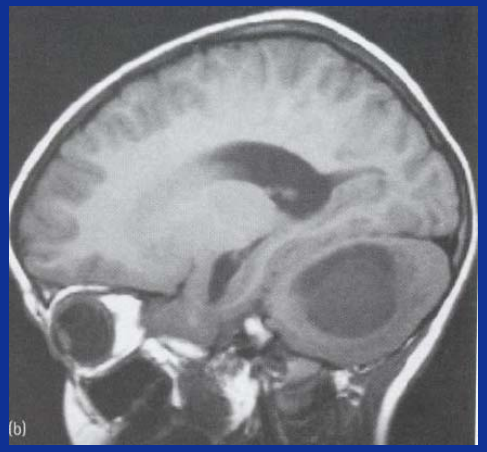
Birth characteristics and risk of CNS tumours and incidence of CNS tumours in children in the Nordic countries



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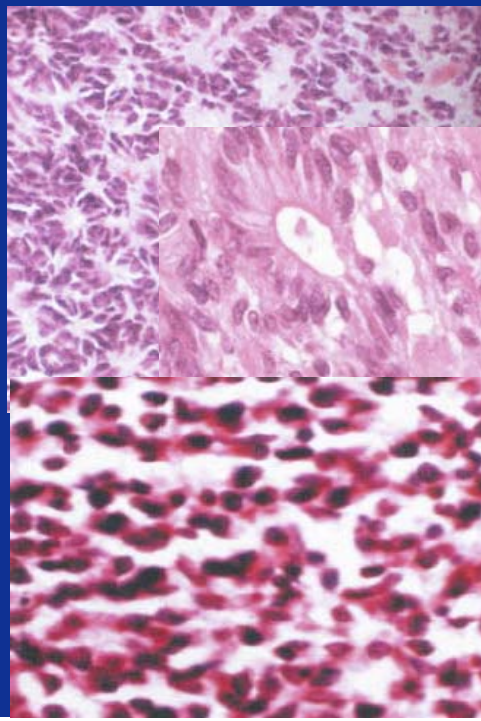

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Children aged 0-14 with a primary CNS tumour in Denmark, Sweden, Finland and Norway in 1985-2006

Methods

- Identification of cases in the National cancer registries and the childhood cancer registries
- Validation of diagnosis by pathology report and medical record in 50% of the cases
- Population statistics from the national population registries
- Analysis of temporal trends by join-point analyses

Absolut no. of cases

CNS ICCC-3 III	No
Ependymoma	405
Astrocytoma	1710
Embryonal CNS tumours	692
Other gliomas	332
Other specified CNS tumours	541
Unspecified CNS tumours	303
Total	3983

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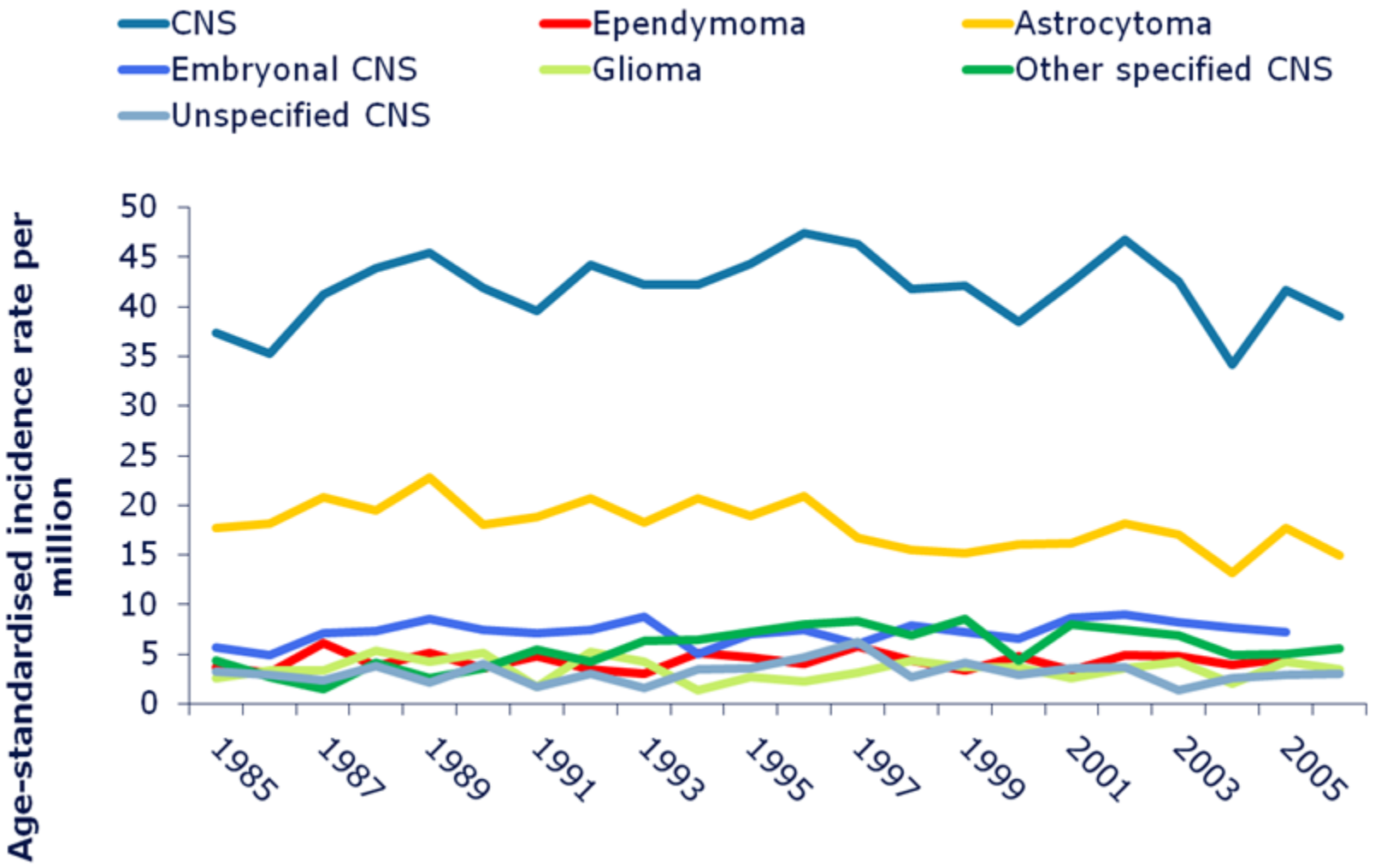
CNS tumour in the Nordic countries

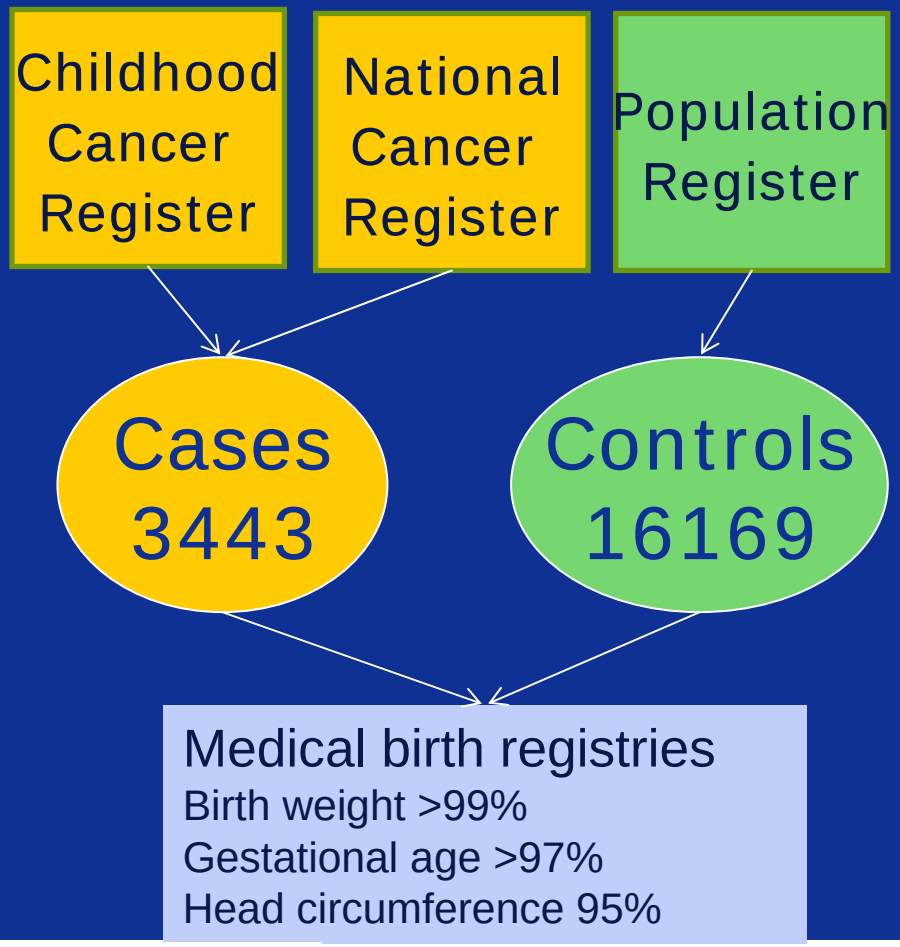
Age-standardized incidence rate per million



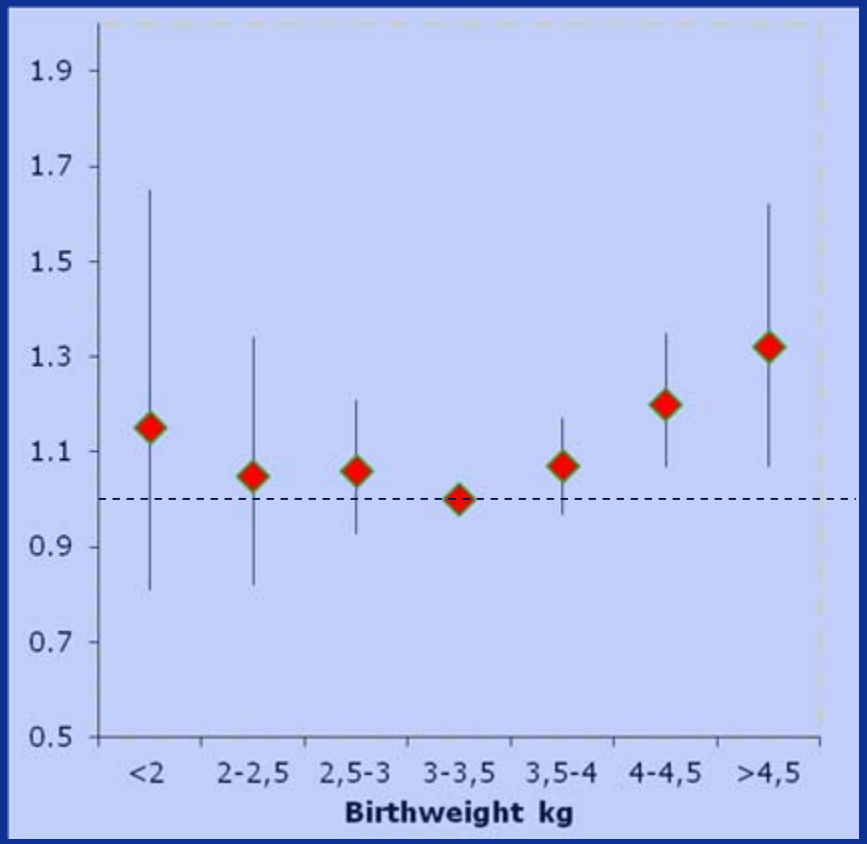
Incidence of Childhood CNS tumours in the Nordic countries Pediatr Blood Cancer 2010

Birth characteristics and risk of CNS tumours

Case-control study



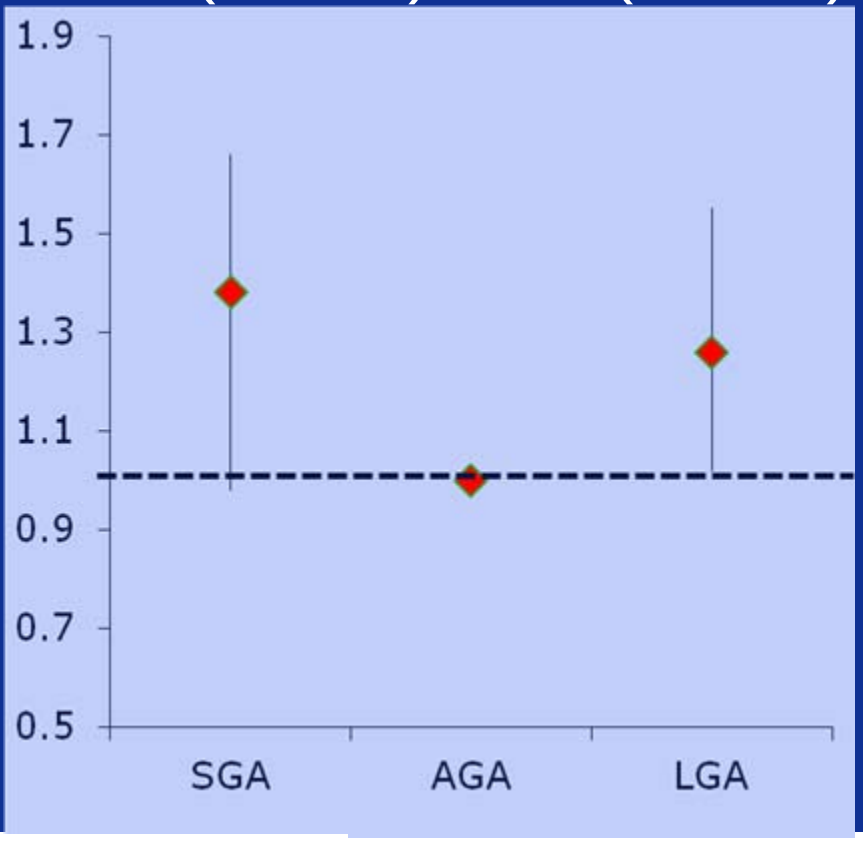
Birth weight adjusted for Gestational age



Foetal growth and CNS tumour

Small and large for gestational age

SGA (-2 SD) LGA (+2SD)



- Little variation by histology
  - Strongest association was observed for embryonal CNS tumours
- No variation by age
  - SGA increased risk <10 years of age
- Head circumference >38 cm OR 1.80 (1.18-2.74)

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Neonatal stress and CNS tumours

Preterm birth

Gestational age	No cases	No controls	OR	95 % CI
All	3349	15359		
<37	204	832	1.19	(1.00-1.43)
37-40	2248	10390	1.00	
>40	897	4137	0.98	(0.90-1.07)

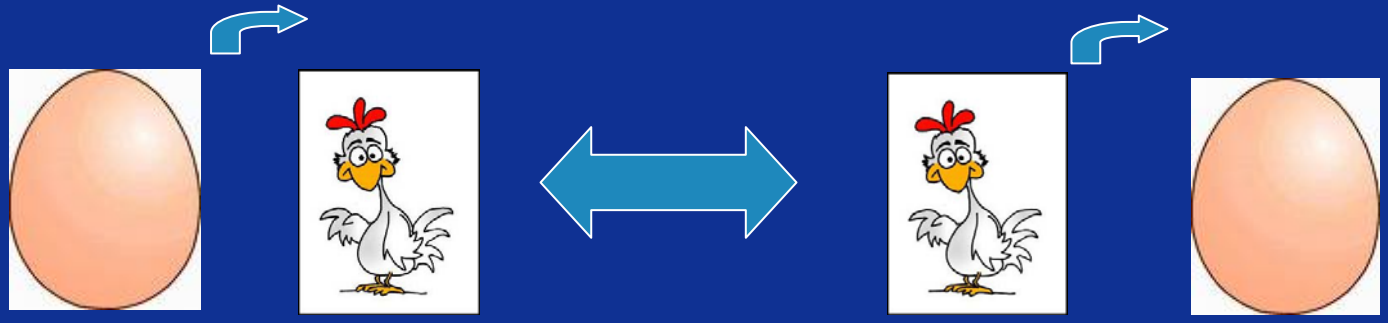
Among preterms we observed a trend per 1 week of decreasing gestational age (<37 weeks)

1.58 (1.04-2.44)

Apgar score<7 at 5 minute OR 1.44 (0,98-2.12)

Hypothesis

- Rapid growth in utero in response to high level of growth factors ➡ a greater number of replicating cells at risk of malignant transformation



The intrauterine presence of a CNS tumour influences the overall growth rate of the foetus

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