

# From NICU to the Community

General Practitioners Study Day

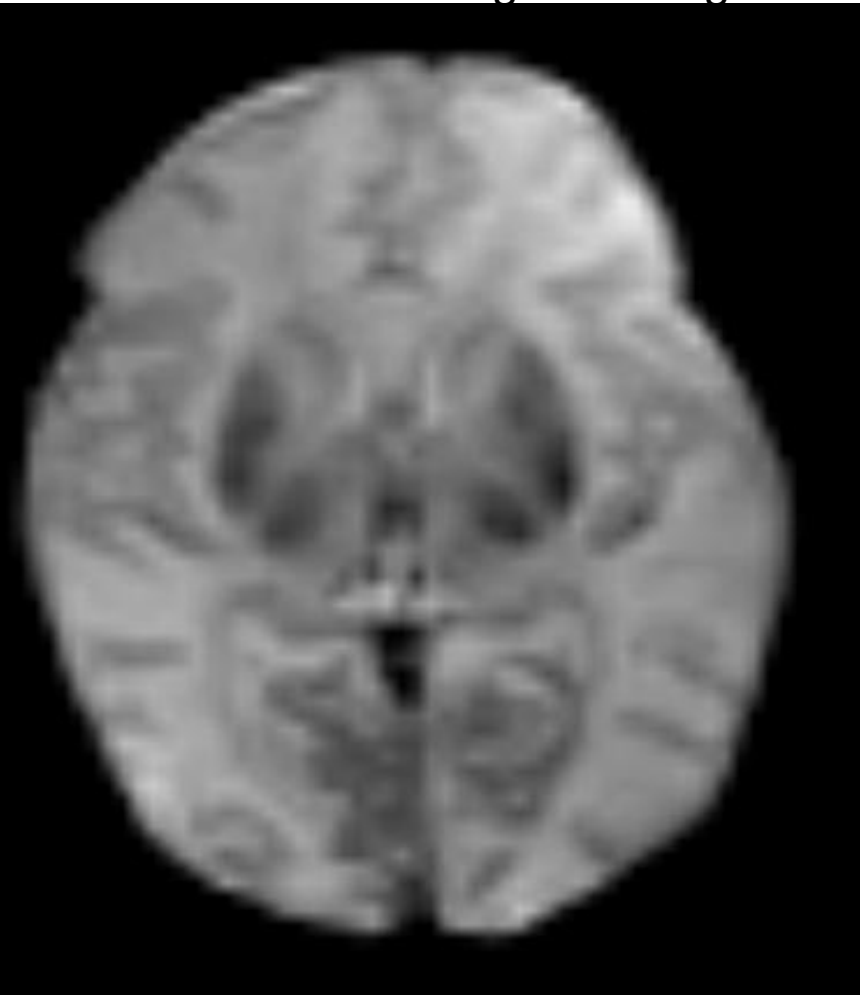
October 18<sup>th</sup> 2014

# News in Neonatology

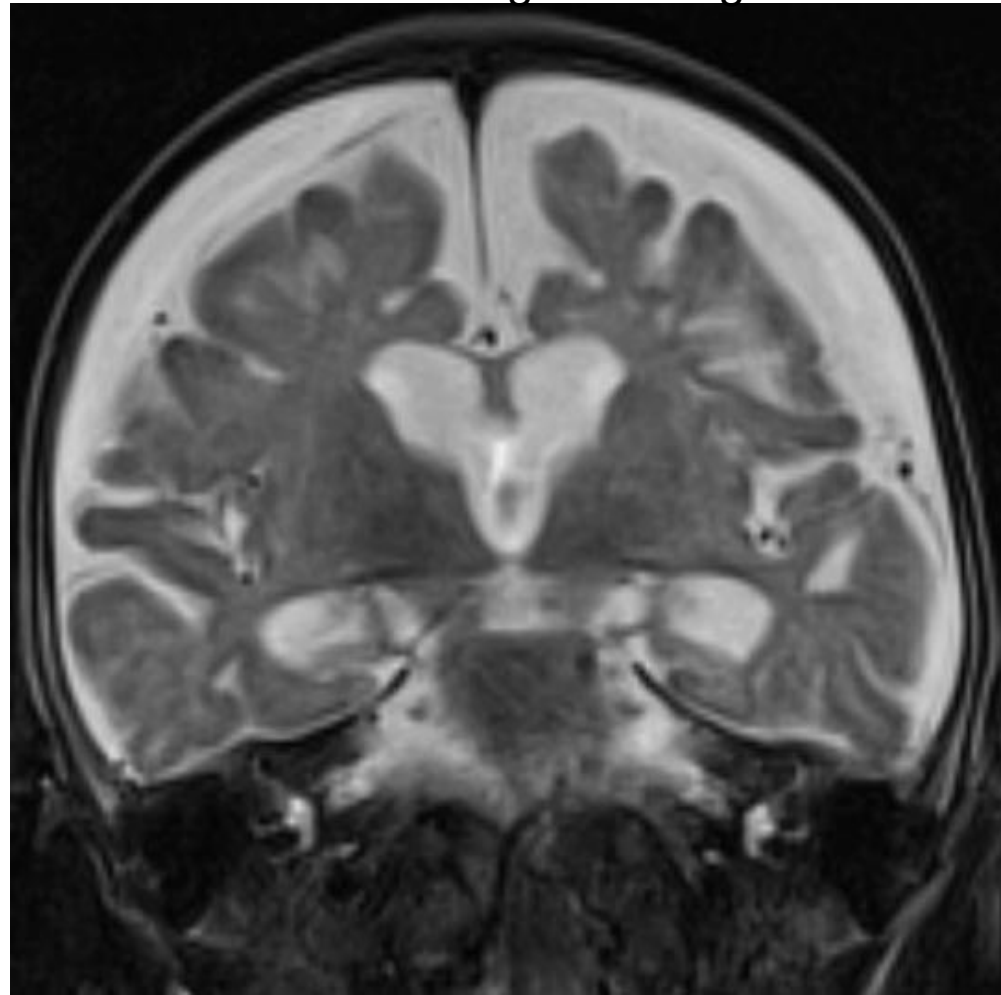
- Therapeutic hypothermia
- CPAP vs ventilation
- Palivizumab RSV prophylaxis
- Feeding post discharge
- Universal hearing screen
- Universal Oxygen saturations
- Hip protocol

# Hypoxic ischaemic encephalopathy

Thalamic / basal ganglia infarction  
Axial diffusion weighted image

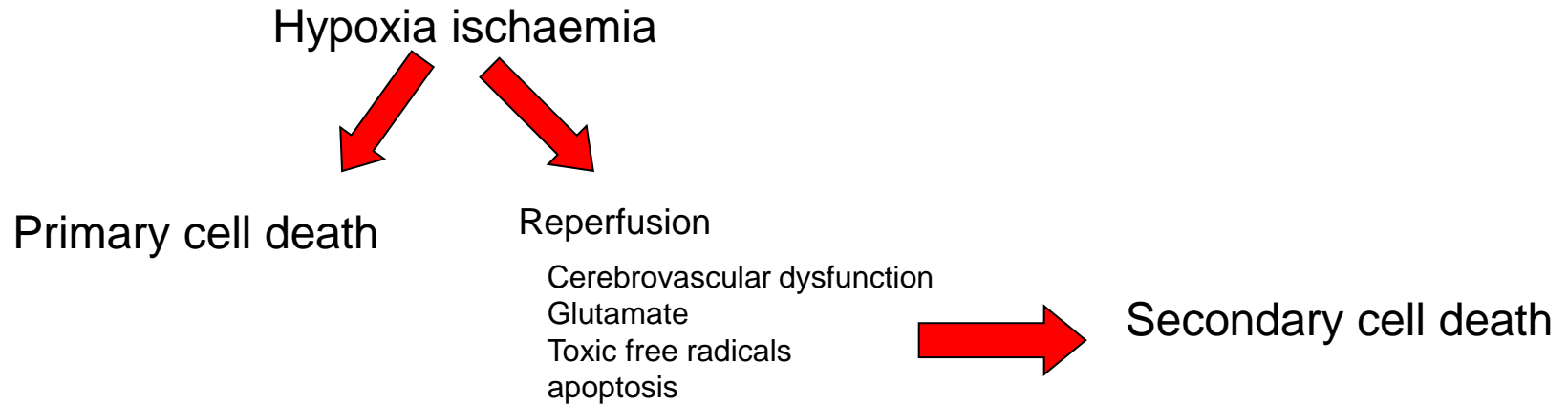


Encephalomalacia at 6 months  
Coronal T2 weighted image



# Therapeutic hypothermia

## Window of opportunity



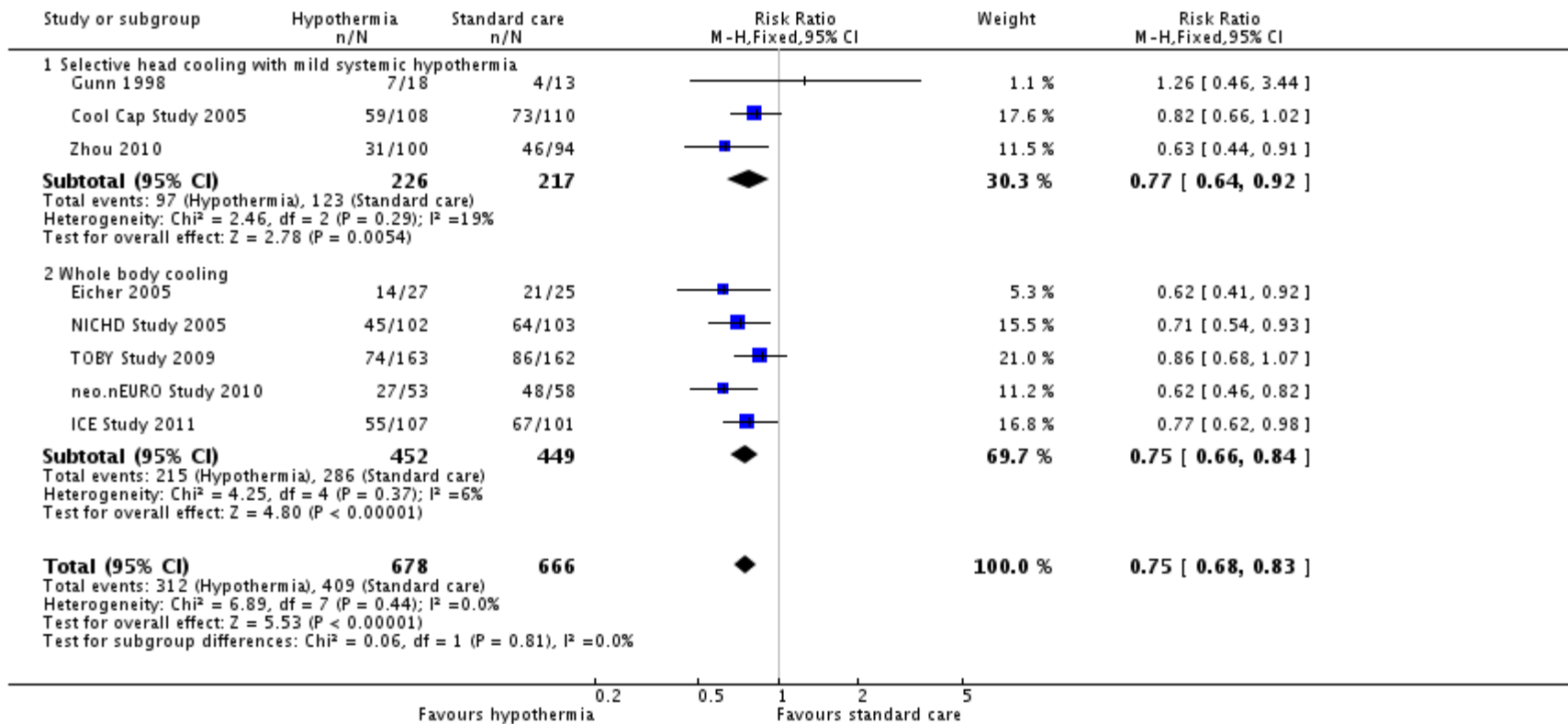
## Cell Death



# Cochrane 2013

## death or major disability at 2 years

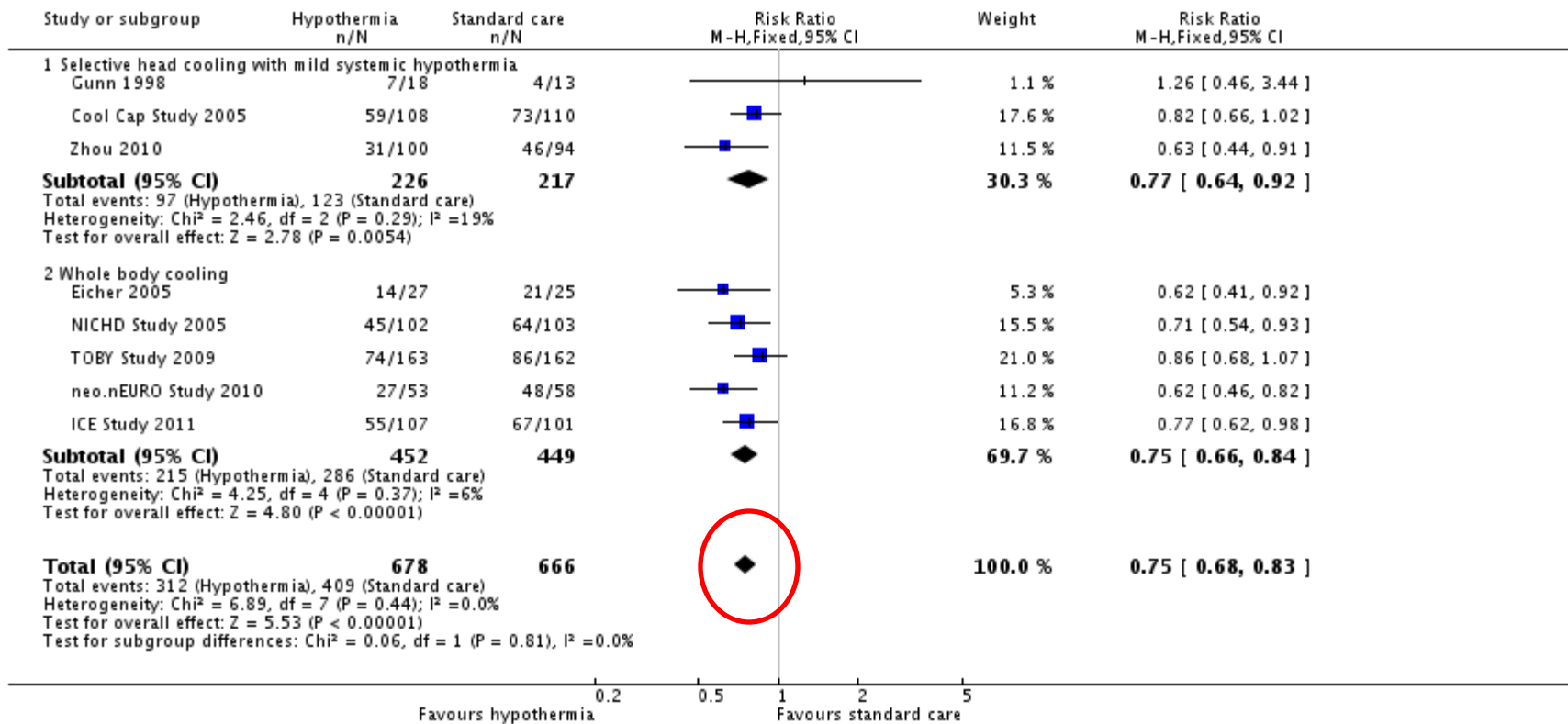
Review: Cooling for newborns with hypoxic ischaemic encephalopathy  
 Comparison: 1 Therapeutic hypothermia versus standard care: subgroup analysis by method of cooling  
 Outcome: 1 Death or major disability in survivors assessed, by method of cooling



# Cochrane 2013

## death or major disability at 2 years

Review: Cooling for newborns with hypoxic ischaemic encephalopathy  
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**Death or major disability**  
 Cooled infants 46% vs 61% non cooled infants

# TOBY cooling trial: outcomes at 6-7 years

**Table 2. Primary Outcome and Its Components in Children 6 to 7 Years of Age.\***

	Hypothermia Group (N=163)	Control Group (N=162)	Relative Risk (95% CI)	P Value
Survival with IQ score $\geq 85$ among all children who could be tested — no./total no. (%)	75/145 (52)	52/132 (39)	1.31 (1.01–1.71)	0.04
Death — no./total no. (%)	47/163 (29)	49/162 (30)	0.95 (0.68–1.33)	0.81
IQ score $\geq 85$ among survivors — no./total no. (%)	75/98 (77)	52/83 (63)	1.22 (1.00–1.49)	0.05

\* IQ scores could not be determined for 18 children in the hypothermia group and 30 in the control group. There was no significant interaction between treatment and results on amplitude-integrated EEG (risk ratio, 0.99; 95% CI, 0.59 to 1.67; P=0.97).

Cerebral palsy 21% vs 36% p value 0.03

Increased IQ amongst those who survive

# Therapeutic hypothermia



- Cooling reduces mortality without increasing disability in survivors
- If a child survives; cooling reduces their risk of major disability

33-34 degrees for 72 hours

12 hours rewarming

EEG: seizure management and prognosis

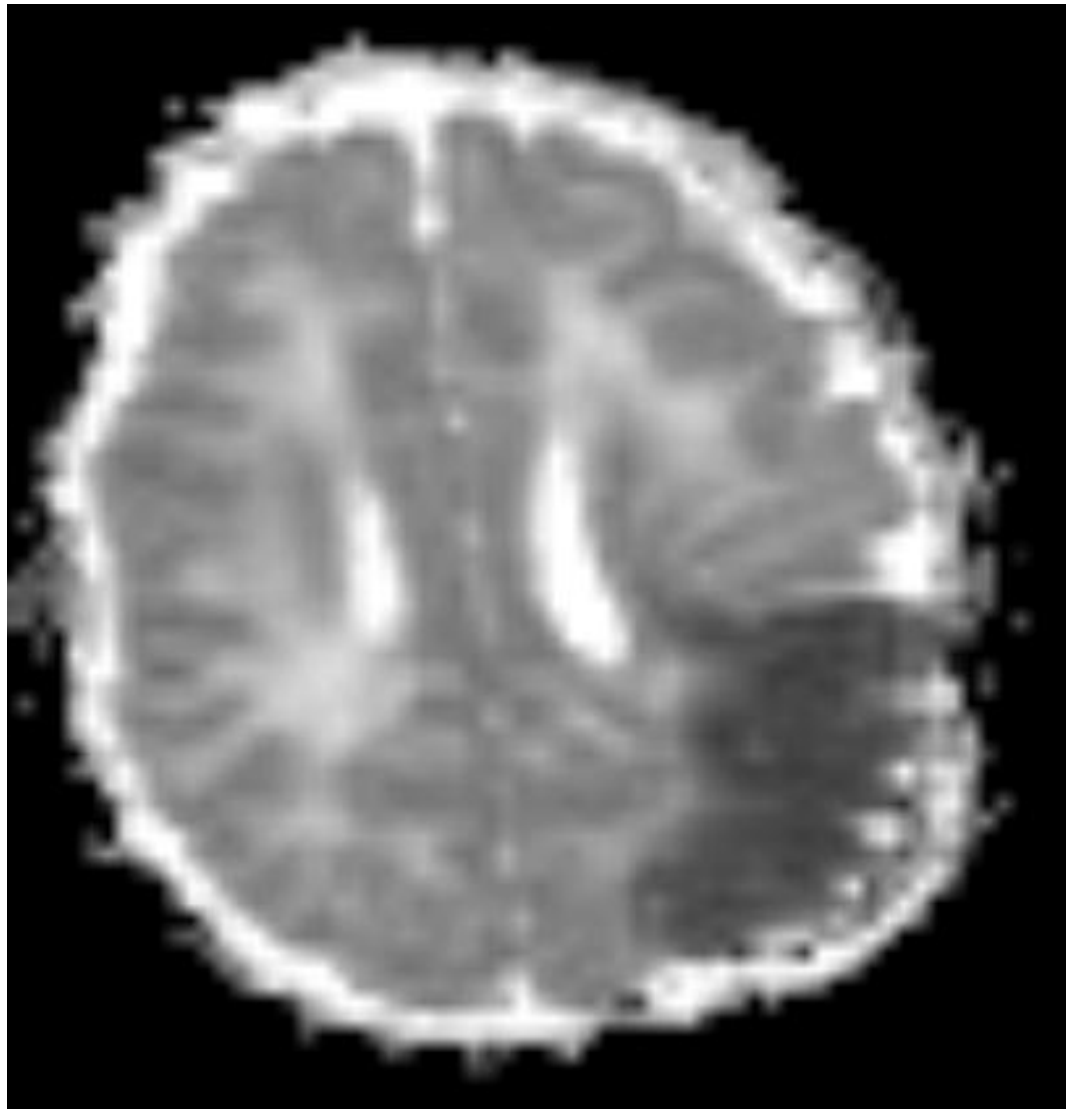
MRI brain

Paediatric neurology input



# Left parietal Stroke

Diffusion  
weighted  
image



# Preterm brain injury

## Grade 4 IVH

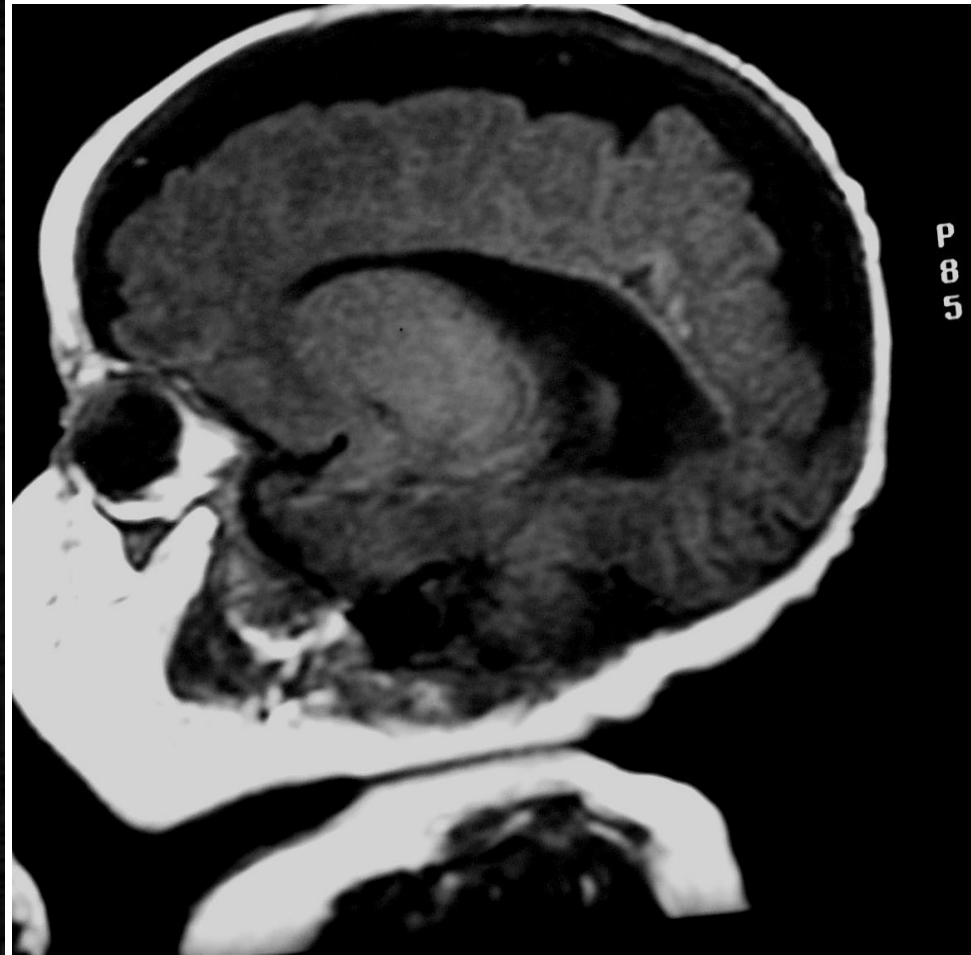
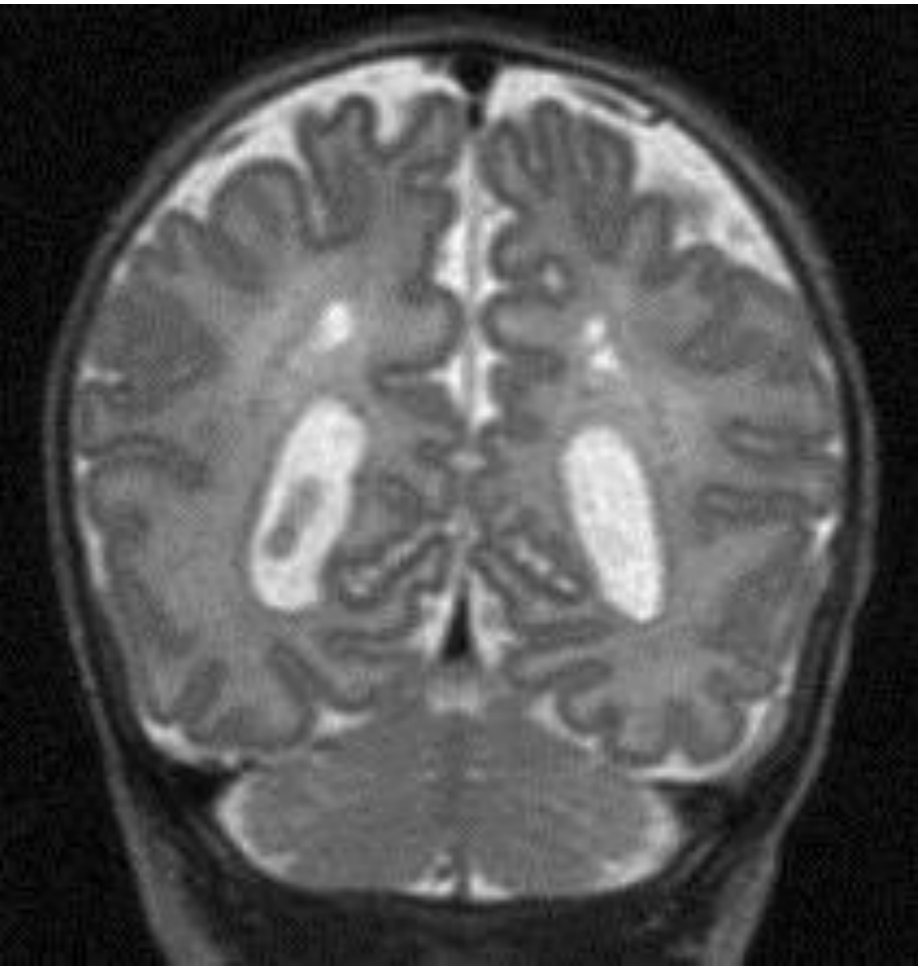
3-4% VLBW infants



## Cystic Periventricular leucomalacia



# Cystic PVL : tip of the iceberg



# Premature infants

Ventilation : CPAP: High flow cannulae: home oxygen



# Feeding and weaning preterm babies post discharge

- Plan A) Breast feeding plus fortified Expressed breast milk
- Plan B) Formula
  - : if Catch up growth needed - Nutriprem 2 to term CGA
  - : if Well grown – Term formula with Iron
- If thriving at term corrected age then can change to normal term formula
- **Weaning to solids:** Ex prem @ 5-8 months old and not before 3 months CGA
- **Reflux / Colic**
- Anti reflux formulae
- Nutramigen for 6 – 12 months

# Palivizumab: RSV prophylaxis



Monoclonal antibody  
5 monthly doses 15 mg/kg IM  
TCP Homecare team nurses

Cost DPS €140/month

- **Impact trial**
- 11% vs 5% hospitalisation rate
- **Policy**
- < 32 weeks gestation
- < 6 months old at start of RSV season (October)
- Ongoing chronic lung disease
- Haemodynamically significant heart disease (AVSD but not vsd/asd)
- Major neuromuscular disease
- **Basics of prevention**
- Handwashing
- Smoking
- Birthday parties??

# Complex home care

- Home oxygen – 0.25 litres, not weaning
- Home pump tube feeding
- Palliative care – paediatric palliative care nurse
- Dysmorphic / syndromic infant unknown cause

# Universal Hearing Screening

- 1-2 per 1000 live births hearing loss
- OAE : automated oto-acoustic emissions
- 1st or 2<sup>nd</sup> test
- 2<sup>nd</sup> test not clear - referred to audiology / ENT
- 1: 25 of these will have hearing loss





# Universal Hearing Screening

- Number of babies screened to date:
- Pilot Site: Cork University Maternity
  - 2011- todate **28,936**
  - Hearing impairment confirmed: **50**
- Nationally (19 Maternity Sites)
  - To-date **140,568**
  - Hearing impairment confirmed: **207**
  -

# Universal pulse oximetry screening for critical congenital heart disease

- 2010 *American Academy of Pediatrics*

*Mahle et al. Pediatrics 2009;124:823-836*

- Post ductal saturations of 96% or greater, 24 – 48 hours old or predischARGE if d/c earlier
- Will still miss some cases
- eg Coarctation, Pink Fallots, Aortic stenosis
- Babies pink going home



# Developmental Dysplasia Hips

- Abnormal Barlow Ortolani test
- Restricted abduction of hip
- Positive galezzi sign

## Risk factors

- 1<sup>st</sup> degree relative
- 2 or more 2<sup>nd</sup> degree relatives
- Breech > 35 weeks
- Torticollis or Structural foot abnormality

Galezzi sign



Paediatric Orthopaedic Hip clinic (Mr Colm Taylor, Ms Sinead Boron)  
South Infirmary Hospital and Euromedics Clinic

# Neonatal OPD

- 6 clinics per week Tuesday to Thursday
  - Neonatal Inpatient follow up
  - GP referrals
  - Not a general paediatric OPD
- 
- Maternity Hospital / Obstetric Emerg Room
  - Not a community emergency service

Questions ?

# Tongue tie



