

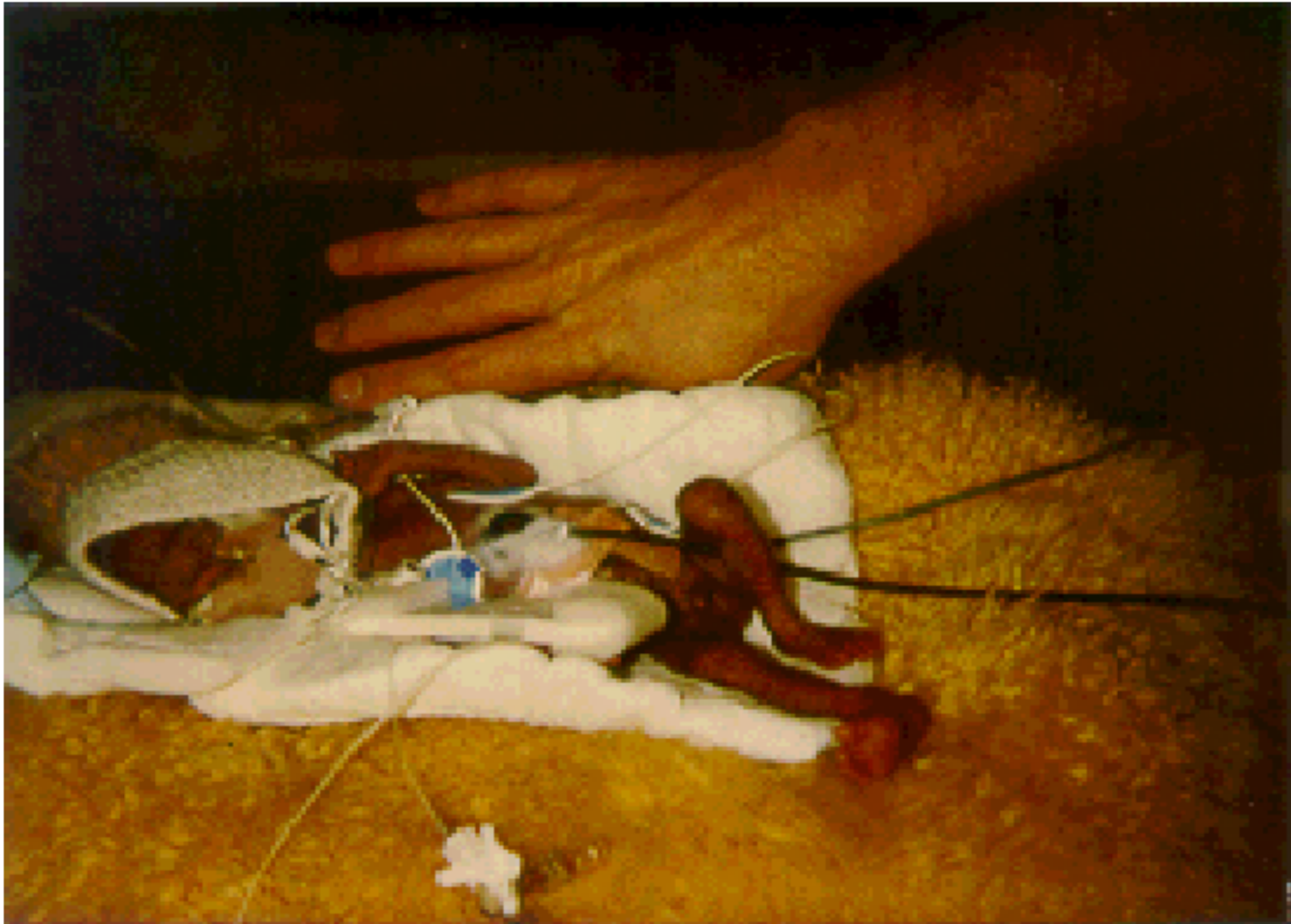


# Prematurity

Julia Petty

# PREMATURITY

- Below 37 weeks gestational age
- Different degrees of prematurity determine OUTCOME
- Extreme prematurity (<26 weeks gestation)
- Borderline of viability 24 weeks
- Increase in survival rate means an inevitable increase in long-term developmental problems.













# Problems of Prematurity

- **Respiratory:**
- Respiratory Distress Syndrome - Surfactant deficiency.
- Chronic lung disease of prematurity – oxygen dependency & inflammation changes of the lungs persisting past 28 days or 36 weeks corrected gestation
- Apnoea of Prematurity – due to immature brain stem

## Other systems

- **Cardiovascular :**
- Low circulating blood volume and blood pressure
- 'Patent Ductus Arteriosus' – fetal duct remains open



## Other systems

- **Hepatic :**
- Jaundice due to immature liver
- Reduced clotting factors
- Reduced metabolism of drugs
- **Renal and fluid balance:**
- Renal tubule immaturity
- Reduced filtration rate
- Fluid and Electrolyte imbalance

## Other systems

- **Immune:**
- Low levels of immunoglobulins
- Limited defences
- **Metabolic:**
- Increased metabolic rate, oxygen and energy demands
- Poor glycogen stores - hypoglycaemia is common

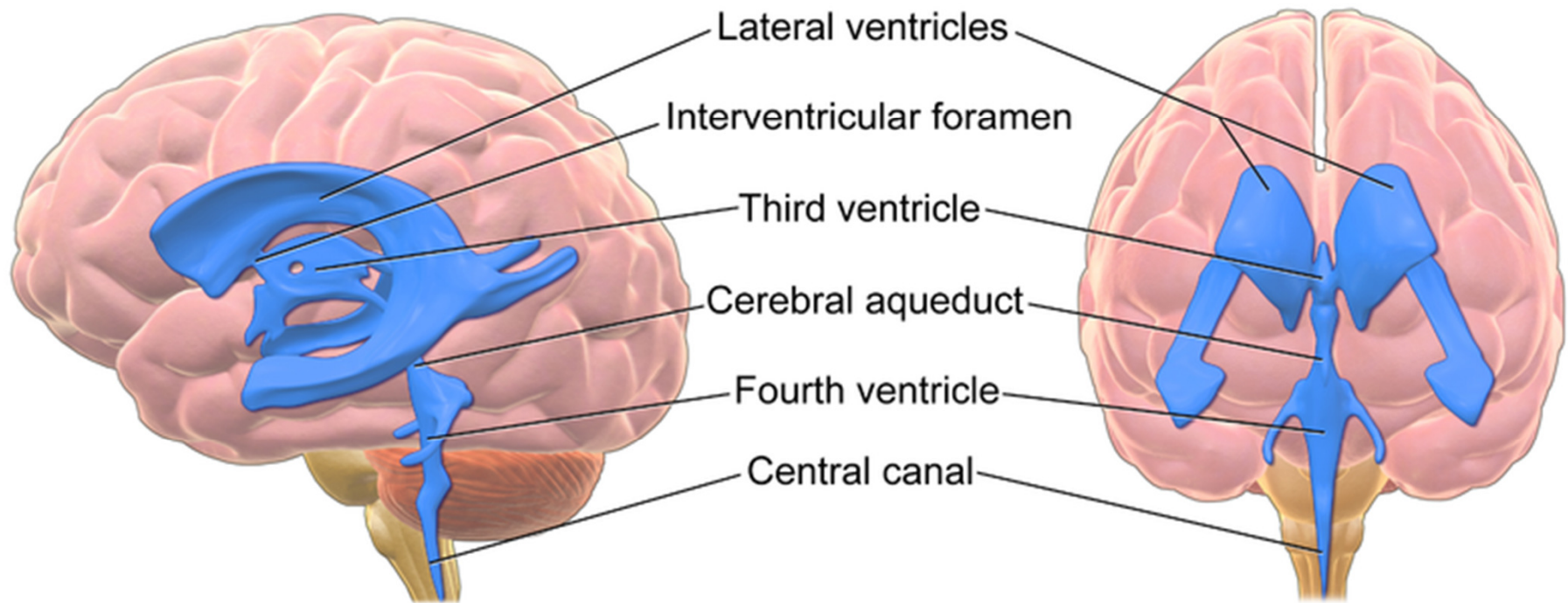
## Other systems

- **Haematological:**
- Anaemia of Prematurity
- Differences in values
- **Nervous system:**
- Intraventricular haemorrhage – bleeding into the ventricles of the brain
- Periventricular leukomalacia – damage to the area around the brain ventricles



# Intra ventricular haemorrhage

## Ventricles of the Brain

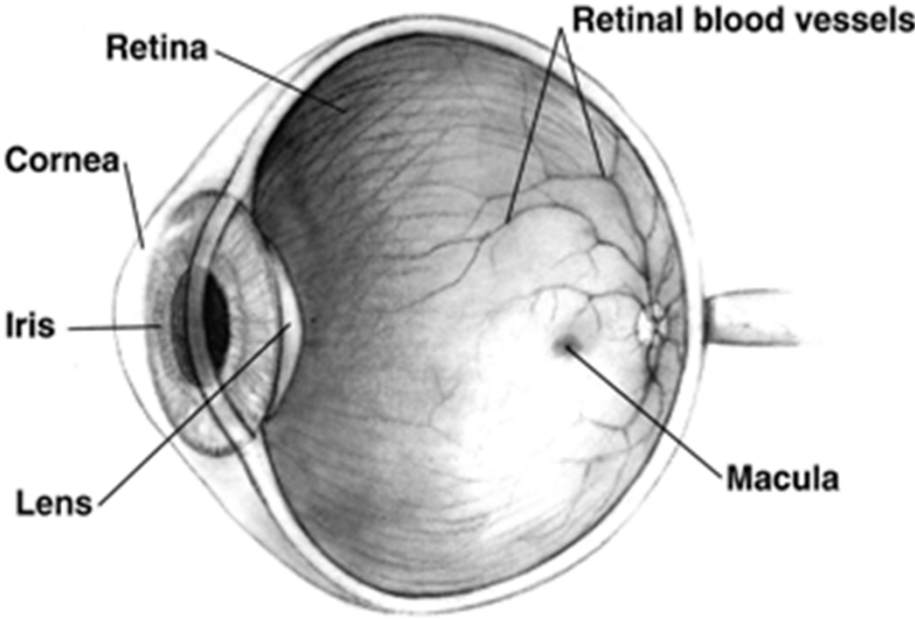


*Ventricular System (lateral view)*

*Ventricular System (anterior view)*

# Sensory deficits—eyes and ears

- Stages of **Retinopathy of Prematurity** (ROP)
- 1= Demarcation line between retina & non-vascularised area
- 2= Scar tissue seen & new vessels form a ridge
- 3= Ridge (vascular) increases with growth of extra retinal tissue
- 4= Partial retinal detachment
- 5= Full detachment





## Other systems

- **Gastro-intestinal-**
- Necrotising Enterocolitis – an inflammatory disease of the bowel common in extreme prematurity
- Gastro-oesophageal reflux is common
- Delays in enteral feeding
- Weight loss / poor weight gain

## Other systems

- **Thermoregulation;**
- Immature thermal control
- Limited brown fat stores and inability to perform 'thermogenesis' (heat production)
- Rapid heat loss through the skin

## Other systems

- **Skin;**
- Thin, immature skin with no or underdeveloped waterproofing layer
- Skin fragile and easily damaged
- **Muscle;**
- Lack of muscular tone before 34 weeks
- Weak, floppy limbs requiring support



# Further Reading

- Chatterjee J, Gullam J, Vatish M and Thornton S (2007) The Management of preterm labour, *Archives of disease in Childhood; Fetal and Neonatal edition*, 92,2, F88-93
- Hale, R (2007) Monitoring fetal and maternal wellbeing *British Journal of Midwifery* 15, 2 , 107-110
- Hollier LM (2005) Preventing Preterm birth – what works, what doesn't', *Obstetrical and Gynecological Survey*, 60, 2, 124- 131
- McGuire W, McEwan and Fowlie PW (2004) ABC of preterm birth : Care in the early newborn period, *BMJ*, 329, 1087-1089
- Tucker J and McGuire W (2004) ABC of Preterm Birth: Epidemiology of preterm birth, *BMJ*, 329, 675-678
- For further detail & more resources go to the online resource.... Unit 3E
- [http://www.cetl.org.uk/learning/neonatal/unit\\_3e/player.html](http://www.cetl.org.uk/learning/neonatal/unit_3e/player.html)