Preterm Baby

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Objectives

- Understand the definition of preterm baby
- Understand the definitions (LBW. SGA, LAG. AGA)
- Understand the disease burden
- Understand the characteristics of preterm baby
- Identify the causes of preterm baby
- Understand prevention of preterm complications
- Understand the acute and long term complications

WHO

- An estimated 13.4 million babies were born preterm in 2020(1) .
- Preterm birth complications are the leading cause of death among children under 5 years of age, responsible for approximately 900 000 deaths in 2019 (2).
- Three-quarters of these deaths could be prevented with current, cost-effective interventions.
- Across countries, the rate of preterm birth ranges from 4–16% of babies born in 2020.

- 1. Ohuma E, Moller A-B, Bradley E, et al. National, regional, and worldwide estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. Lancet. 2023;402(10409):1261-1271. doi:10.1016/S0140-6736(23)00878-4.
- 2. Perin J, Mulick A, Yeung D, et al. Global, regional, and national causes of under-5 mortality in 2000-19: an updated systematic analysis with implications for the Sustainable Development Goals. Lancet Child Adolesc Health 2022; 6(2): 106-15.

What is a Preterm Baby?

- Preterm is defined as babies born alive before 37 completed weeks of gestation.

Classified based on GA

- Extremely preterm (less than 28 weeks)
- Very preterm (28 to less than 32 weeks)
- Moderate to late preterm (32 to 37 weeks).

37 weeks

Preterm:
before 37 weeks

38 weeks

Early Term:
37 weeks, 0 days to 38 weeks, 6 day

39 weeks

40 weeks

Full Term:
39 weeks, 0 days -
40 weeks, 6 days

41 weeks

Late Term:
41 weeks, 0 days to 41 weeks, 6 da

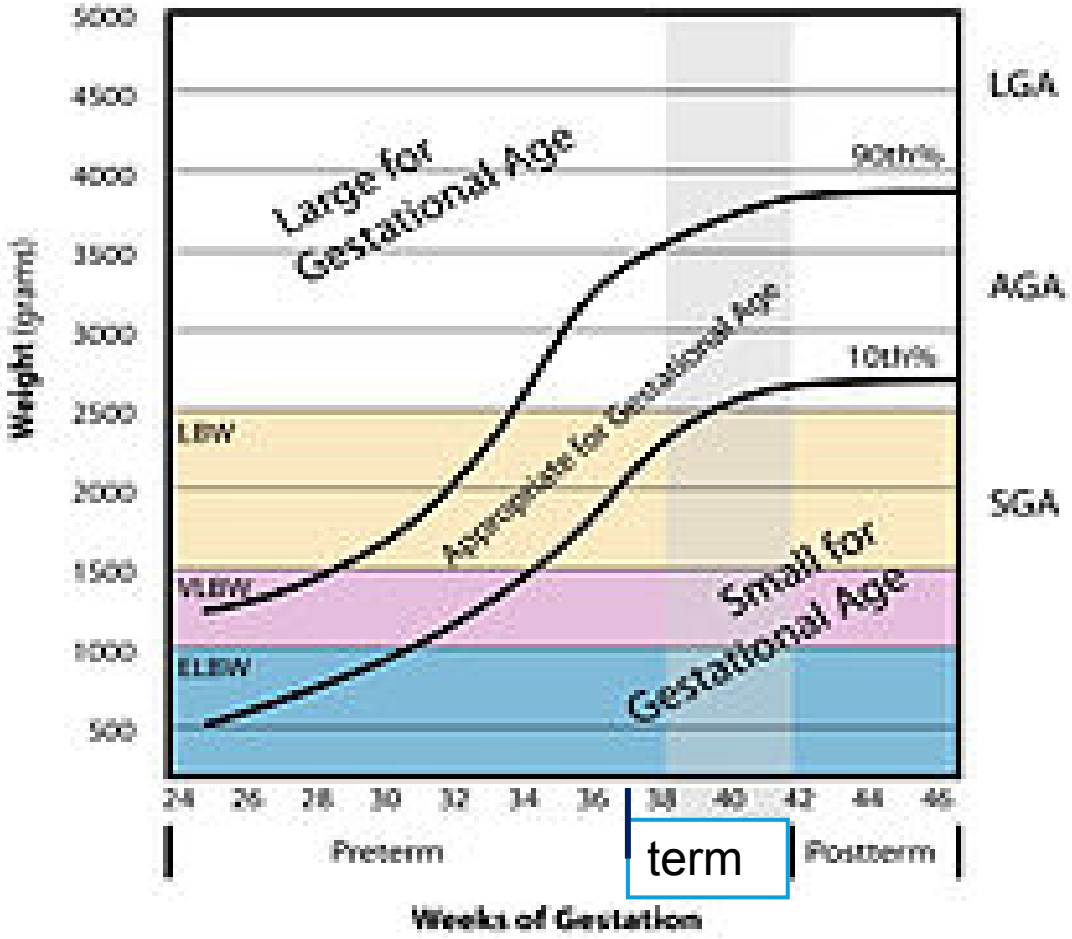
42 weeks

Postterm:
after 42 weeks

Summary of Classification

- Gestation
  - term: ≥ 37 completed weeks' gestation
  - preterm: < 37 completed weeks' gestation
  - post-term: > 42 completed weeks' gestation
- Birth weight
  - low birth weight (LBW): < 2500 g
  - very low birth weight (VLBW): < 1500 g
  - extremely low birth weight (ELBW): < 1000 g
- Weight for gestational age
  - appropriate for gestation (AGA): birth weight between 10th and 90th centiles for gestation
  - small for gestational age (SGA): birth weight < 10th centile for gestation
  - large for gestational age (LGA): birth weight > 90th centile for gestation.

Classification



Significance of preterm In Jordan

Causes of neonatal **mortality** In Jordan

1- Congenital malformation

2- Prematurity (**i.e. second leading cause**)

Cost: first 4-5days around 700-1200 JOD/day Then 150-250JOD/day

Disability

< 26 weeks – 60% have disability

Level, Causes and Risk Factors of Neonatal Mortality, in Jordan: Results of a National Prospective Study.

Author information

Maternal and Child Health Journal. 31 May 2016. 20(5):1061-1071

https://europepmc.org/article/med/26645614

Low Birth Weight (LBW).

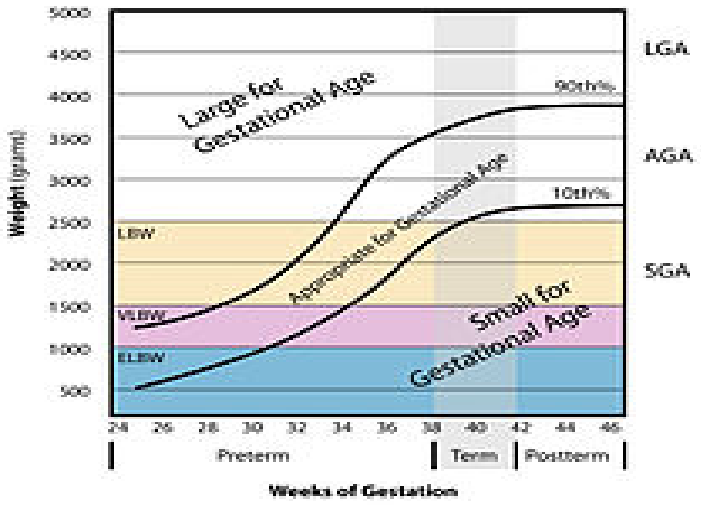
- Birth weight less than 2,500 grams
- May be preterm, SGA or both

How to know

Birth weight

LBW

Not accurate
But may be helpful



Preterm

- Ballard Score

The new Ballard Score is a set of procedures developed by Dr. Jeanne L Ballard

-To determine Gestational Age through:

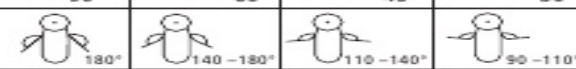
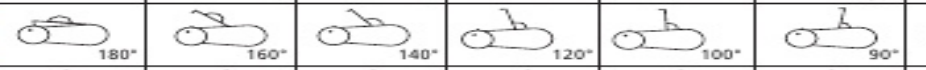
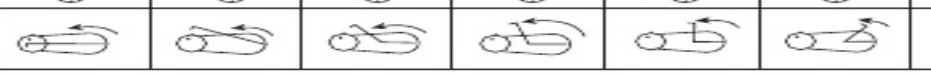
- **Physical assessment of a newborn infant.**
- **Neuromuscular**

https://www.signnow.com/jsfiller-desk15/?projectId=422299065#1bf7300df0c48e529bc58c2860f8e375

MATURATIONAL ASSESSMENT OF GESTATIONAL AGE (New Ballard Score)

NAME _____ SEX _____
HOSPITAL NO. _____ BIRTH WEIGHT _____
RACE _____ LENGTH _____
DATE/TIME OF BIRTH _____ HEAD CIRC. _____
DATE/TIME OF EXAM _____ EXAMINER _____
AGE WHEN EXAMINED _____
APGAR SCORE: 1 MINUTE _____ 5 MINUTES _____ 10 MINUTES _____

NEUROMUSCULAR MATURITY

NEUROMUSCULAR MATURITY SIGN	SCORE							RECORD SCORE HERE
	-1	0	1	2	3	4	5	
POSTURE								
SQUARE WINDOW (Wrist)								
ARM RECOIL								
POPLITEAL ANGLE								
SCARF SIGN								
HEEL TO EAR								
							TOTAL NEUROMUSCULAR MATURITY SCORE	

PHYSICAL MATURITY

PHYSICAL MATURITY SIGN	SCORE							RECORD SCORE HERE
	-1	0	1	2	3	4	5	
SKIN	sticky friable transparent	gelatinous red translucent	smooth pink visible veins	superficial peeling & / or rash, few veins	cracking pale areas rare veins	parchment deep cracking no vessels	leathery cracked wrinkled	
LANUGO	none	sparse	abundant	thinning	bald areas	mostly bald		
PLANTAR SURFACE	heel-toe 40–50 mm: -1 < 40 mm: -2	>50 mm no crease	faint red marks	anterior transverse crease only	creases ant. 2/3	creases over entire sole		
BREAST	imperceptible	barely perceptible	flat areola no bud	stippled areola 1–2 mm bud	raised areola 3–4 mm bud	full areola 5–10 mm bud		
EYE / EAR	lids fused loosely: -1 tightly: -2	lids open pinna flat stays folded	sl. curved pinna; soft; slow recoil	well-curved pinna; soft but ready recoil	formed & firm instant recoil	thick cartilage ear stiff		
GENITALS (Male)	scrotum flat, smooth	scrotum empty faint rugae	testes in upper canal rare rugae	testes descending few rugae	testes down good rugae	testes pendulous deep rugae		
GENITALS (Female)	clitoris prominent & labia flat	prominent clitoris & small labia minora	prominent clitoris & enlarging minora	majora & minora equally prominent	majora large minora small	majora cover clitoris & minora		
							TOTAL PHYSICAL MATURITY SCORE	

Reference
Ballard JL, Khoury JC, Wedig K, et al: New Ballard Score, expanded to include extremely premature infants. J Pediatr 1991; 119:417–423. Reprinted by permission of Dr Ballard and Mosby—Year Book, Inc.

SCORE
Neuromuscular _____
Physical _____
Total _____

MATURITY RATING

SCORE	WEEKS
-10	20
-5	22
0	24
5	26
10	28
15	30
20	32
25	34
30	36
35	38
40	40
45	42
50	44

GESTATIONAL AGE (weeks)
By dates _____
By ultrasound _____
By exam _____

- EAR- preterm ear cartilages are poorly developed, soft and poor recoil
- Hair- wooly and fuzzy

- Skin-skin is thin, gelatinous,shiny and excessively pink, abundant lanugo

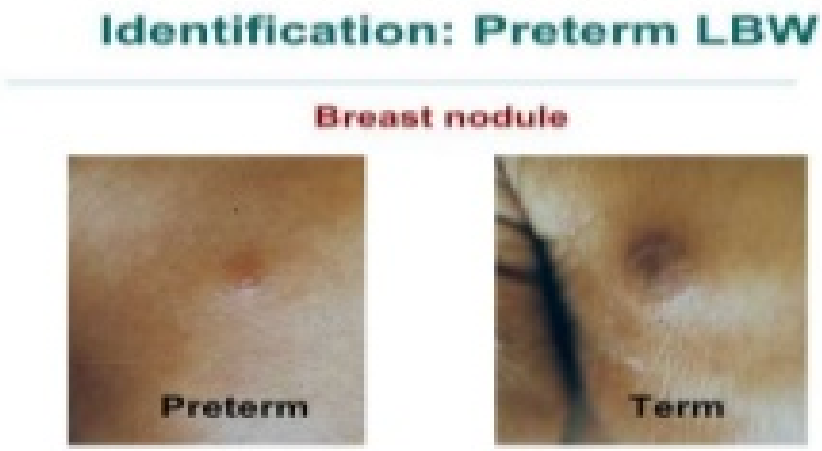
What are the characteristics of prematurity?

Physical assessment of a newborn infant

Differentiating features

Sole- have fine wrinkles, creases are not well formed

- Breast nodule- small or absent

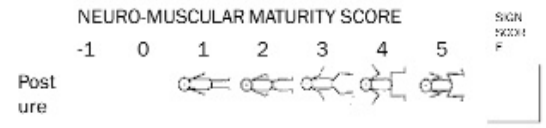


- testes undescended and scrotum poorly developed

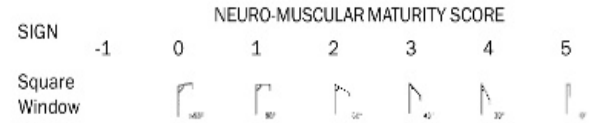
- Labia majora widely separated in females

Neurological Assessment

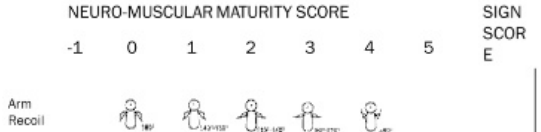
posture



Square window



Arm recoil



Neurological Assessment

Popliteal angle

Scarf sign

Heel to ear

Example: What are the characteristics of prematurity?

- The following are the most common characteristics of a premature baby:
- - small baby, often weighing less than 2,500 grams
- - pink or red skin, able to see veins
- - little body fat
- - little scalp hair, but may have lots of lanugo
- - weak cry and body tone
- - genitals may be small and underdeveloped

When to do Ballard. Score

new ballard sore

Best- <12hrs(<26 wks)

upto 96 hrs(>26 wks)

Accurate within 2 wks of GA

Overestimates by 2-4 days in 32-37 wks babies

When To Do

What causes prematurity?

1- Maternal factors:

- Previous preterm delivery
- Infection (such as group B streptococcus, urinary tract infections, vaginal infections, infections of the fetal or placental tissues).
- Chronic medical maternal illness
- Preeclampsia
- Malnutrition and anemia
- Drug abuse (such as cocaine).

2- Uterine and pregnancy factors

- Placenta previa (low lying position of the placenta).
- Placental abruption (early detachment from the uterus).
- Premature rupture of membranes (amniotic sac).
- Polyhydramnios (too much amniotic fluid).
- Cervical incompetence (inability of the cervix to stay closed during pregnancy).
- Bicornuate uterus
- Abnormal or decreased function of the

3- Fetal factors

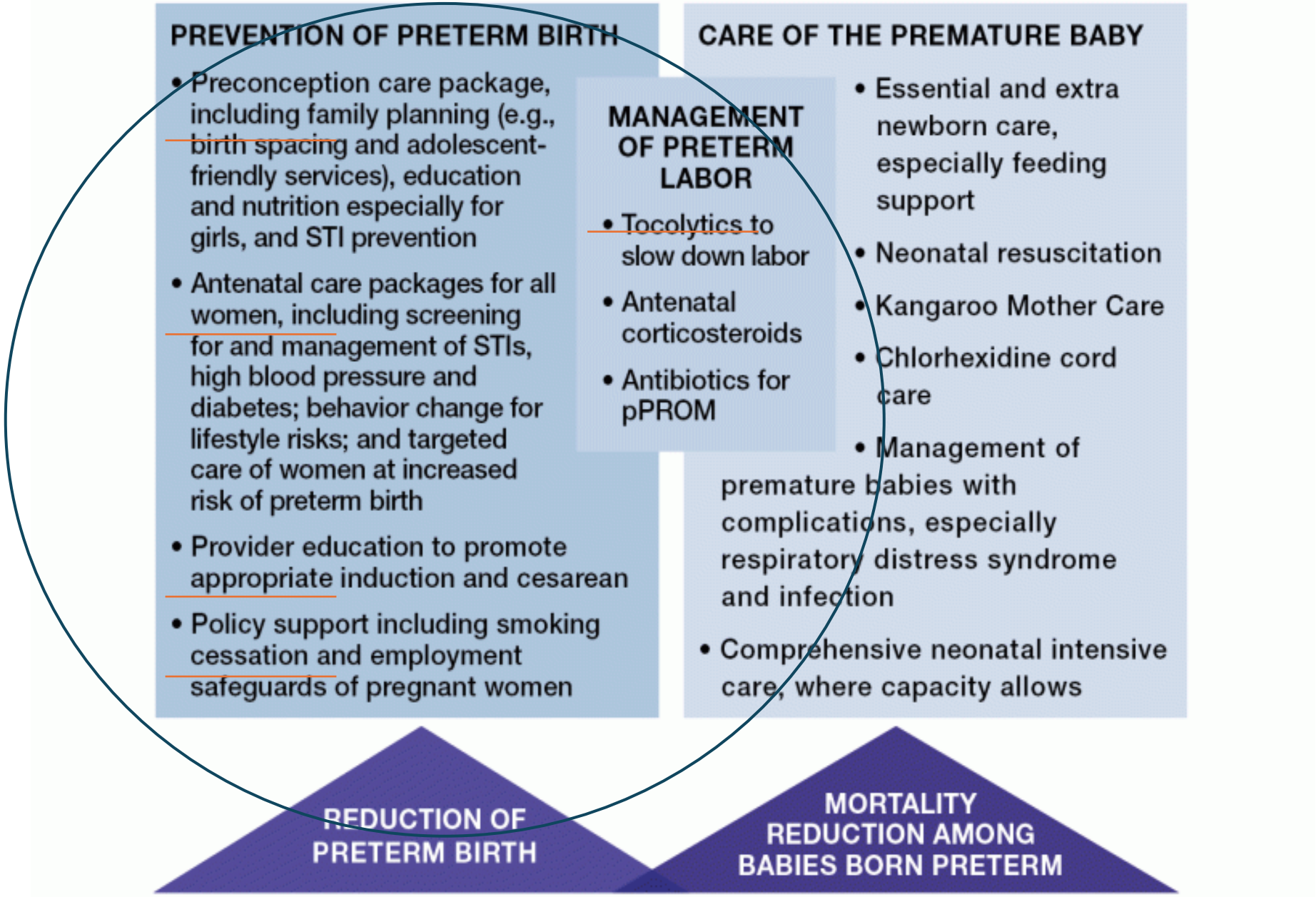
- Fetal distress: When fetal behavior indicates the intrauterine environment is not healthy.
- Multiple gestation (twins, triplets or more).
- Congenital malformation
- Intrauterine infection (TORCH)

Prevention Bundles

1- Prevention of preterm Birth

2- Management of preterm labor

3- Care of preterm baby



Born Too Soon:
The global action report on preterm birth, 2012

Prenatal preventions
Management of preterm labor

1. Antenatal care.

Antenatal visits to detect mother at risk of preterm labor and mange her disease

Reference:

- Neonatal outcomes in extremely preterm newborns admitted to intensive care after no active ant natal management: a population-based co- hort study. J Pediatr. 2018 Dec;203:150–5.

Prenatal preventions
Management of preterm labor

2. **Cervical length measurements** in populations at risk of preterm birth (example :previous preterm)

if the transvaginal ultrasound Cervical length (CL) shortens to <25 mm at <24 weeks, cervical cerclage may be offered.

- Reference:
  - Interventions for women with mid-trimester short cervix: which ones work? [editorial]. Ultrasound Ob- stet Gynecol. 2017 Mar;49(3):295–300.
  - Vaginal progesterone, oral progesterone, 17- OHPC, cerclage, and pessary for preventing preterm birth in at-risk singleton pregnan- cies: an updated systematic review and net- work meta-analysis. BJOG. 2019 Apr;126(5): 556-567.

Prenatal preventions
Management of preterm labor

3. Progesterone (different types)

Use of progesterone is associated with:

- May reduce preterm delivery rates and reduced neonatal mortality

Indication

- Give if
  - **In singleton gestations**
  - With previous preterm birth

    And
  - shortened cervix has been identified

References:

- Interventions for women with mid-trimester short cervix: which ones work? [editorial]. Ultrasound Ob- stet Gynecol. 2017.
- Vaginal progesterone, oral progesterone, 17- OHPC, cerclage, and pessary for preventing preterm birth in at-risk singleton pregnan- cies: an updated systematic review and net- work meta-analysis. BJOG. 2019 Apr;126(5): 556-567.

Prenatal preventions
Management of preterm labor (PTL)

4. **In utero transfer of mother** at risk of PTL
   - The extremely preterm baby (< 29-30 weeks) should, if possible, be transported in utero to tertiary NICU

5. Antibiotics for preterm prolonged rupture of membrane (pPROM)
   - antibiotics
     - can delay preterm delivery
     - reduce neonatal morbidity,

Prenatal preventions
Management of preterm labor

6. Neuroprotection

Magnesium Sulphate (MgSO4)

- Is given to women with imminent preterm delivery before 32 weeks
- It reduces **cerebral palsy at 2** years of age by about 30%

  Magnesium sulphate for wom- en at risk of preterm birth for neuroprotection of the fetus. Cochrane Database Syst Rev. 2009 Jan;1(1):CD004661.

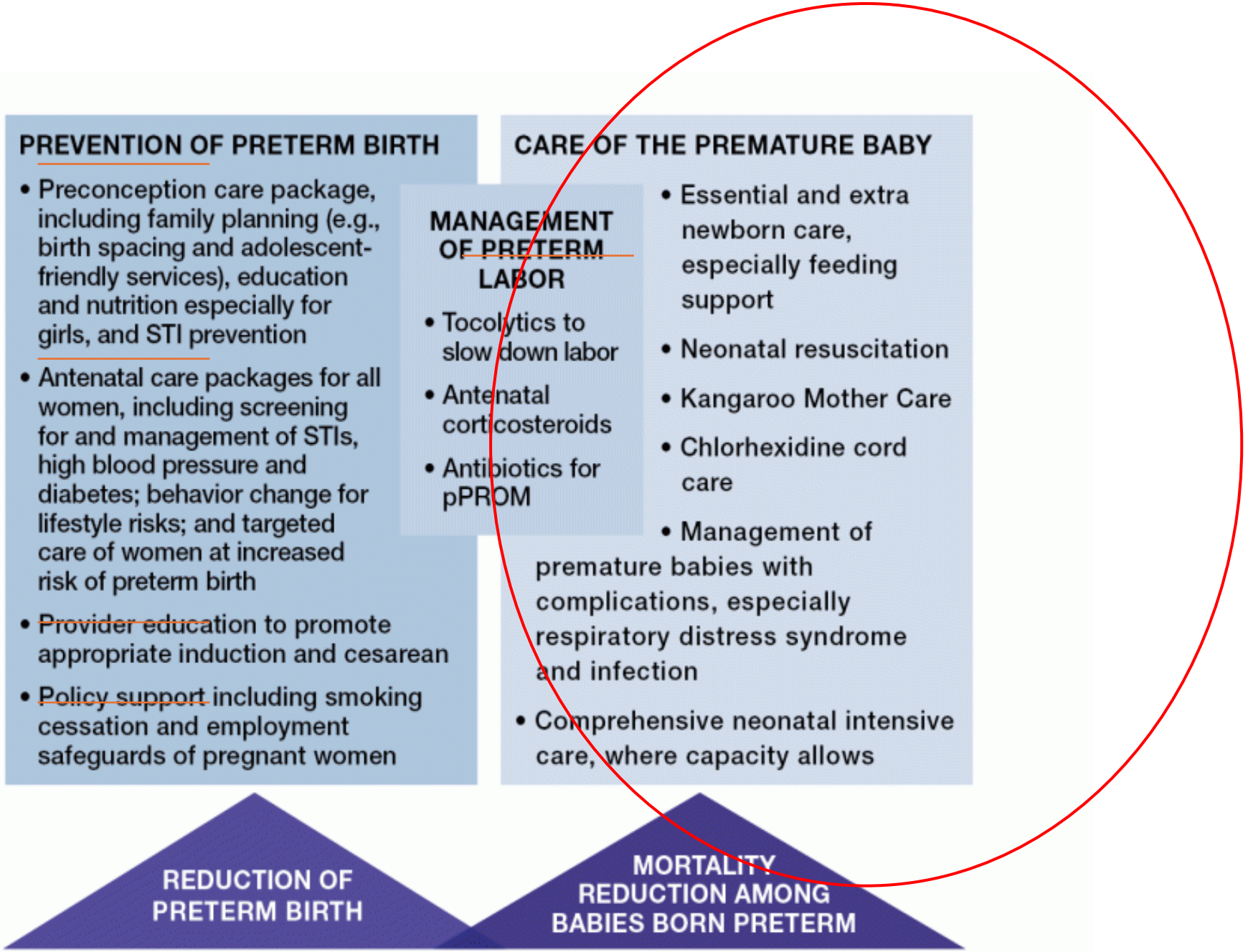
- The longer-term benefits are less clear.
  - Australasian Collaborative Trial of Magnesium Sulphate (ACTOMgSO4) Study Group. School-age outcomes of very preterm infants after antenatal treatment with magnesium sulfate vs placebo. JAMA. 2014 Sep;312(11):1105–1

http://www.mfmsm.com/media_pages/MFM_Progesterone_and_preterm_birth_prevention.pdf

Prenatal preventions
Management of preterm labor

7. **Antenatal steroid**

a single course of prenatal corticosteroids to all women at risk of preterm delivery from when pregnancy is considered potentially viable (24 weeks) until 34 weeks' gestation ideally at least 24 h before birth


PREVENTION OF PRETERM BIRTH
• Preconception care package, including family planning (e.g., birth spacing and adolescent-friendly services), education and nutrition especially for girls, and STI prevention
• Antenatal care packages for all women, including screening for and management of STIs, high blood pressure and diabetes; behavior change for lifestyle risks; and targeted care of women at increased risk of preterm birth
• Provider education to promote appropriate induction and cesarean
• Policy support including smoking cessation and employment safeguards of pregnant women
MANAGEMENT OF PRETERM LABOR
• Tocolytics to slow down labor
• Antenatal corticosteroids
• Antibiotics for pPROM
CARE OF THE PREMATURE BABY
• Essential and extra newborn care, especially feeding support
• Neonatal resuscitation
• Kangaroo Mother Care
• Chlorhexidine cord care
• Management of premature babies with complications, especially respiratory distress syndrome and infection
• Comprehensive neonatal intensive care, where capacity allows
REDUCTION OF PRETERM BIRTH
MORTALITY REDUCTION AMONG BABIES BORN PRETERM
Born Too Soon:

Delivery room Management

1-Preparation before delivery

- Team
- Role
- Equipment

Environment Temperature Management 1-Delivery room temperature

1-Keep rooms with temperature set at

24 to 26 °C after delivery and during resuscitation

2-Pre heated warmer and blankets

3- Plastic bags or occlusive wrapping under radiant warmers babies <28 weeks' gestation to reduce the risk of hypothermia

4- Hat to cover the head

Delivery room Management

Delay cord clamping. DCC

- Clamping the cord After Initiation of respiration
  - If before respiration itr esults in an acute transient reduction in left atrial filling leading to an abrupt drop in left ventricular output.
- **Avoid Cord milkin**g (DO IT ONLY IN RESEARCH)
  - cause Severe intraventricular hemorrhage in preterm)
  - ?Suspected as source of stem cell)research)

Delay cord clamp

Benefits

REDUCE nmr by 30%

Very preterm infants <30 weeks

Delaying cord clamping by 20–45 seconds

- 2–3-fold reduction in intraventricular hemorrhage
- Reduced need for blood transfusions
- Greater mean blood pressures in the first hours of life
- No difference in Apgar scores at 5 minutes/body temperature
- Just short of statistical significance for halving of mortality with DCC in these infants

Respiratory support in delivery room :

-Use CPAP (6cm of water) By mask or short nasal prong

Indication: If baby in respiratory distress (RD) but breathing spontaneously and heart rate > 100

RD
+ HR>100

Neonatal Resuscitation

Quick Tangential Point

- Pulse oximetry
  - Attached to preductal location on right upper extremity
  - Saturation may normally remain low for several minu after delivery

r

Targeted Preductal SpO_2 After Birth	
1 min	60%-65%
2 min	65%-70%
3 min	70%-75%
4 min	75%-80%
5 min	80%-85%
10 min	85%-95%

Saturation protocol

In Neonatal Intensive Care Unit (NICU) Management. Stages.

- Unstable stage:
  - **Birth up 3 to 5 days**
- THE STABLE STAGE :
  - **>3-5 days**
- Later Problem:
  - **When the baby is stabilized**

Neonatal Intensive Care Unit (NICU) Management.

Unstable stage Birth 3 to 5 days

1- Thermal control

2- Respiratory system management

-Resp Support and Be aware of Resp Complication (air leak and Pulmonary Hemorrhage

3- Cardiac support. (Anticipate PDA and Hypotension)

4- Metabolic support

5- Skin care

6- Infection

7- Nutritional management

8- Gastrointestinal problems

9- Communication with parents

Unstable stage Birth 3 to 5 days

1- Prevent Hypothermia

Put the baby in neutral thermal environment

Keep temperature 36.5- 37.4 **C°**

Thermo regulation care

Why Premature are susceptible to ***Heat Loss***

Causes of Hypothermia Are:

- High surface area to volume ratio. (SA: V)
- Thin non-keratinized skin
- Lack of insulating subQ fat
- Lack of thermogenic brown adipose tissue
- Inability to shiver
- Poor vasomotor response
- Poor central thermal control

Adverse Consequences of Hypothermia
Definition of Hypothermia :Temp <36.5 C°

- High O2 consumption □ **hypoxia, bradycardia**
- High glucose usage □ **hypoglycemia** / decreased glycogen stores
- High energy expenditure □ reduced growth rate, **lethargy, hypotonia, poor suck/cry**
- Decease surfactant production □ **RDS**
- Vasoconstriction □ poor perfusion □ **metabolic acidosis**
- Delayed transition from fetal to newborn circulation
- Thermal shock □ DIC □ death

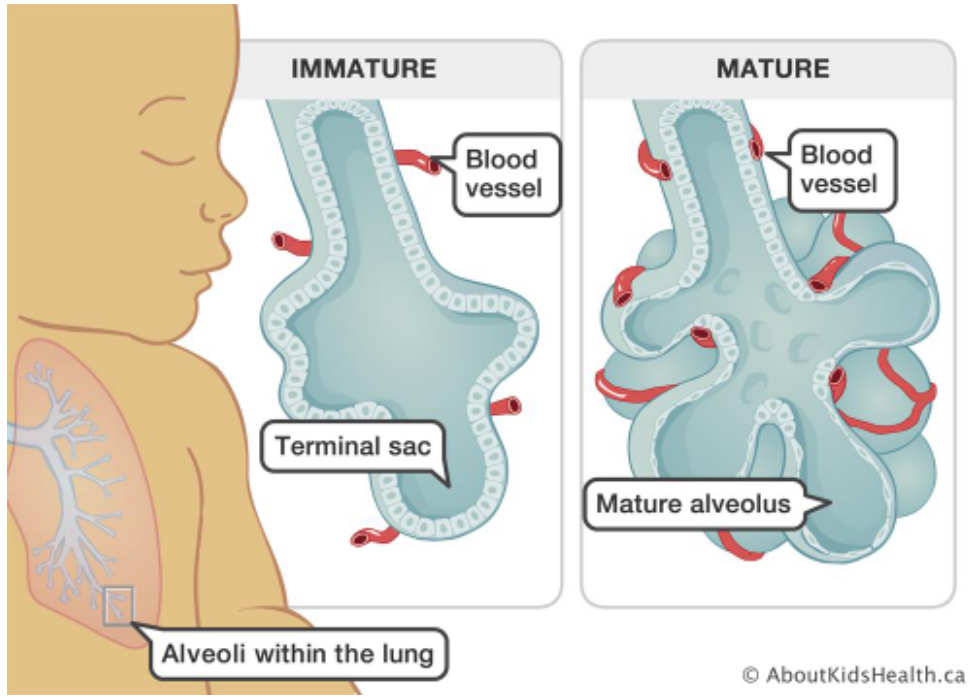
Complications of Prematurity:

2-RESPIRATORY DISTRESS

- Due to immature surfactant
- Due to immature lung :
  - Alveolation and vascularization of the Lungs
- Due to immature musculature and in sufficient calcification of bony matrix

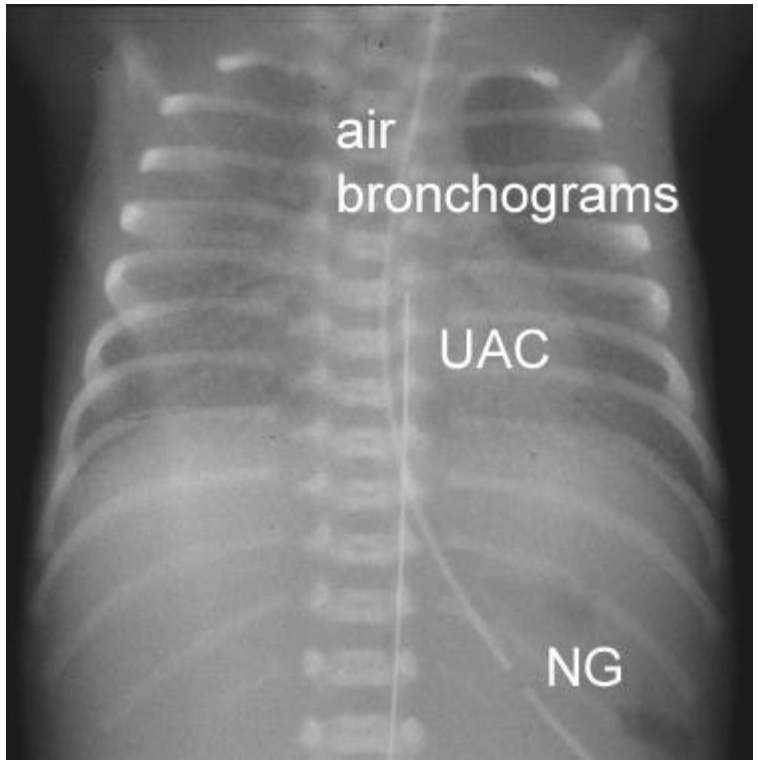
Due to Immature lung :

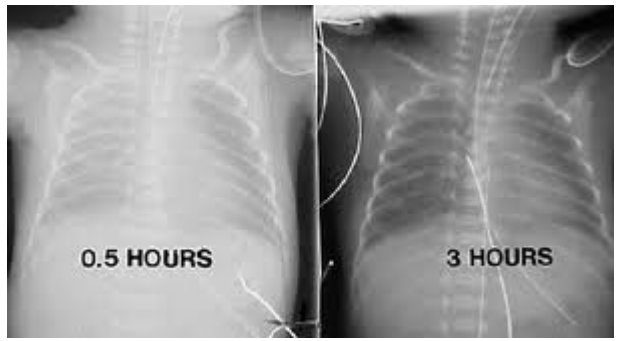
Alveolation and vascularization of the Lungs



Types of Respiratory problems

1- Respiratory distress syndrome





Hyaline membrane disease

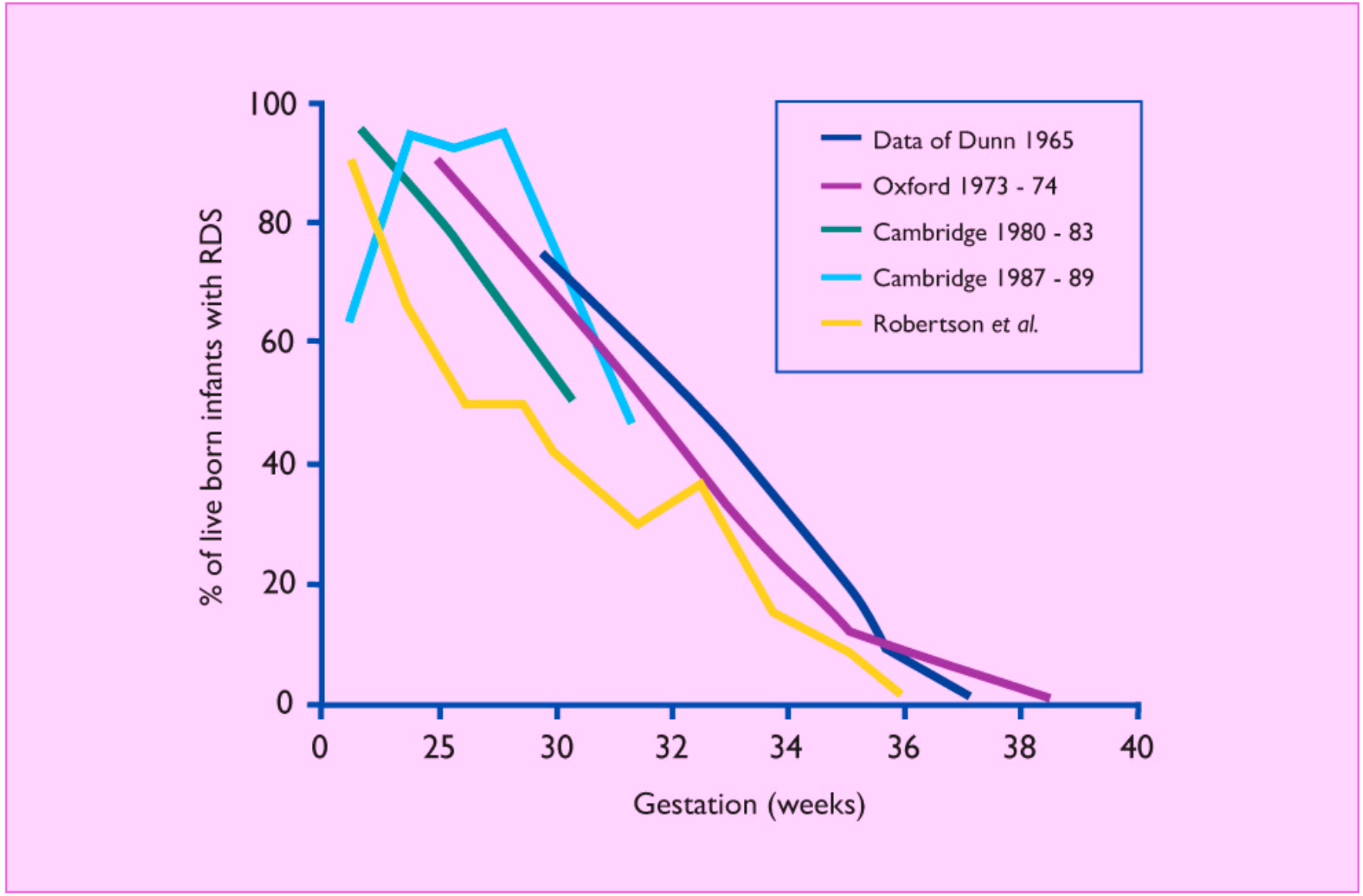
=

respiratory distress syndrome.

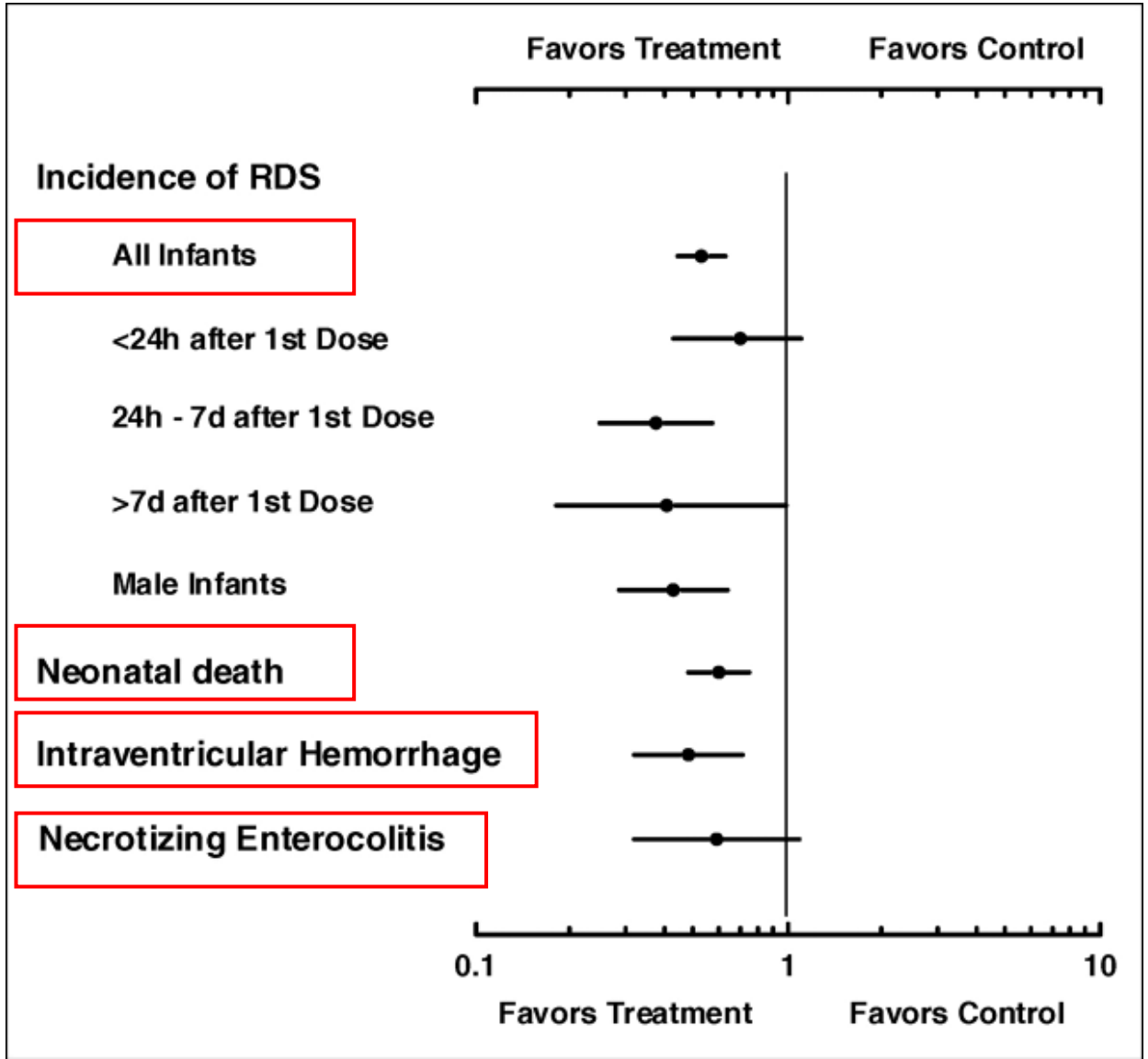
-

a condition in which the air sacs cannot stay open due to lack of surfactant in the lungs.

Gestational age and RDS



Role of antenatal steroids



Respiratory Management

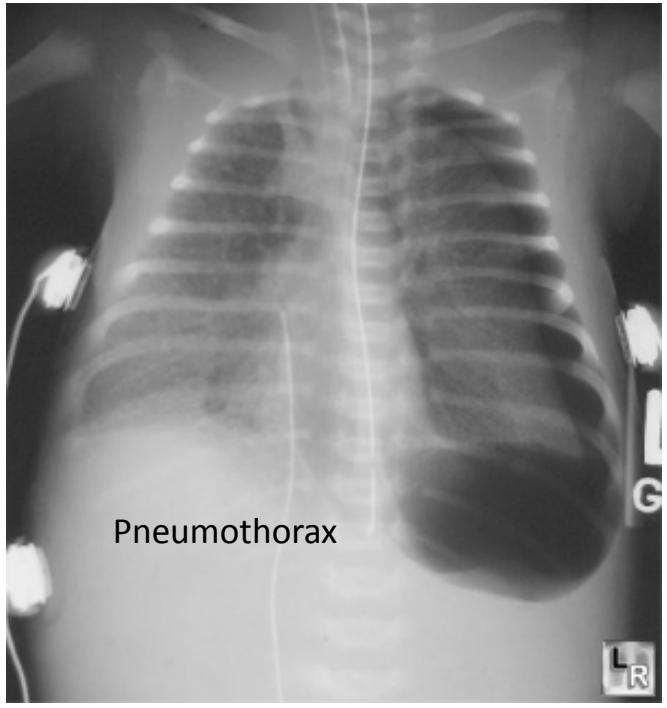
- Support ventilation
  - None invasive and invasive
- Surfactant
  - When to give
    - FiO2 requirement > 30% all babies with a clinical diagnosis of RDS, especially in the early phase of worsening disease.

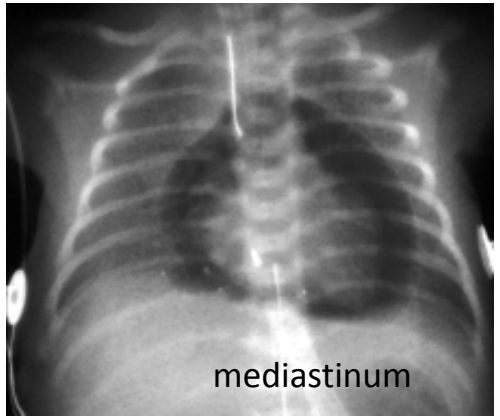
LISA METHOD for surfactant administration

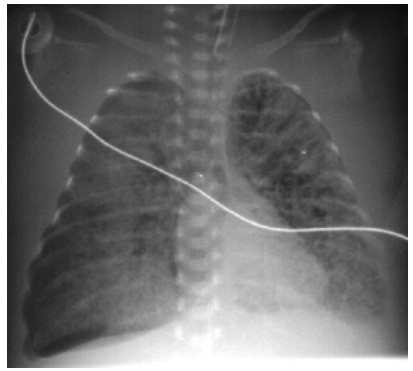
- https://www.youtube.com/watch?v=nnPSYvXQ_-I

Resp support: Be aware of complication of Respiratory distress syndrome Air leaks

Air leaking out of the lung spaces into other tissues







Pulmonary interstitial emphysema

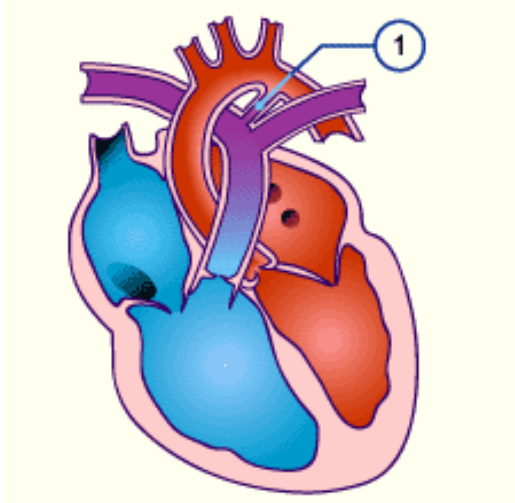
Resp. Support

Be Aware of PULMONARY COMPLICATION

2- PULMONARY HEMOHRAGE

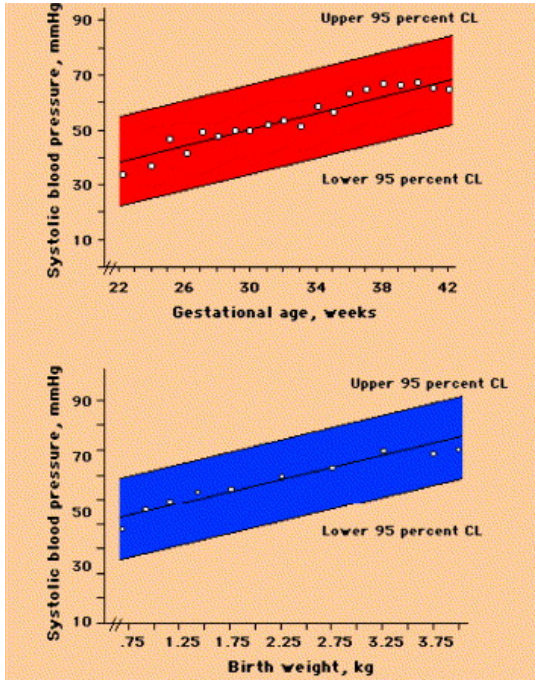
- Rare
- Bleeding into the lungs
- Increases the need for ventilatory support
- Occurs mainly 2-4 days after birth
- Predisposing factors include mechanical ventilation, immaturity and PDA

Complications of prematurity 3-Cardiovascular:



- **Anticipate cardiac Complications**
  - a. **Patent ductus arteriosus** (PDA)
  - b. **Hypotension** (due to cardiac dysfunction , hypovolemia or sepsis)

Maintain BP (Blood Pressure = ga) first few days



Patent Ductus Arteriosus (PDA)

- Premature infants at risk at 24-48 hours
- Duct does not respond to “close” signals (O2+PGs)
- Leads to symptoms of congestive heart failure
- Echo will confirm
- Treated by fluid restriction, NSIAD, Paracetamol, interventional catheter closure (rare surgical ligation)

Complications of prematurity
4 - Metabolic problems

Fluid loss through skin

- (thin skin, no keratin, rapid respiratory rate, from warmer and large Surface area)

Have immature kidney

- that cannot concentrate or regulate electrolytes and the buffer well)

Na Imbalance

Ca Imbalance

K imbalance

Glucose imbalance (Risk of hypo and hyperglycemia)

Complications of prematurity

5-Skin care

Fragile, thin transparent skin

- NO tapes on skin
- Use hydro gel tapes
- Central lines

Complications of prematurity
6- INFECTION

Risk of infection

Decrease IGs
Complement ,
T cell and B cell dysfunction

Follow infection control regulations

Complications of prematurity
7- Nutrition problems

- NUTRITION FOR METABOLICALLY STABLE INFANT

- A) parenteral nutrition- on admission with GIR 6-8
- aminoacids start at 3-3.5g/kg/d increase by 0.5g/kg/d ---- max 3.5-4g/kg/d

- intravenous lipids(20%)- start by 24 hrs-0.5-1g/kg/d increase by 0.5g/kg/d upto 3g/kg/d

  Monitor TG levels - <200mg/dl

Nutritional Support

Start 10 -20 ml/kg/ day
Best is breast milk

Early enteral nutrition

Trophic feeding/ Gut priming

Practice of feeding very small amounts of enteral nourishment to stimulate development of the immature GIT

Advantages:

- Improves GI motility
- Enhances enzyme maturation
- Improves mineral absorption
- Lowers incidence of cholestasis
- Shortens time to regain birth weight

Complications of prematurity
8- Gastrointestinal problems

- Poor GI function, Poor motility
- Hyperbilirubinemia
- Unable to coordinate suck and swallow before 34 weeks gestation.

9-Communication With parents

Preterm & Low-birth-weight Infants

- Parents & Preterm Neonates
  - Physically less attractive babies
  - Cries are high pitched and grating
  - More irritable, passive, and less social
  - Mothers may feel alienated, harbor guilt, and sense of failure and low self-esteem
  - Fear of hurting may discourage handling
  - Preterms fare better with responsive caring parents

✔ THE STABLE STAGE >3-5 days

- APNEA OF PREMATURITY
- GI problems
- VESSEL ACCESS
- Infection
- NEC
- Neurologic

Defined as:

- The cessation of breathing for > 20 seconds (apnea)

or

- Cessation of breathing for less than 20 seconds if it is accompanied by bradycardia or oxygen (O_2) desaturation.
- A developmental disorder due immature respiratory control
- Inversely related to GA

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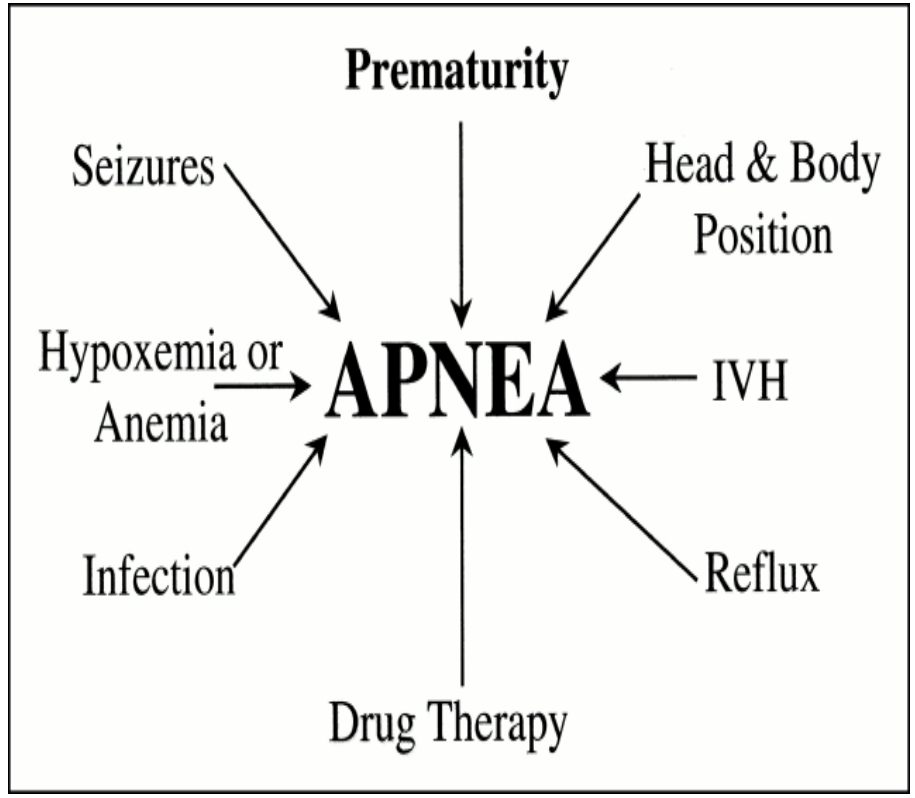
Cause of Apnea of prematurity

Apnea of Prematurity

- Prevention
  - Prevent preterm birth
- Treatment
  - First, rule out underlying cause, such as atelectasis or infection, and treat cause
  - If it is true apnea, what is the predominant type of apnea – central or obstructive?
    - If central, treat with caffeine, theophylline, or aminophylline
    - If obstructive, consider CPAP

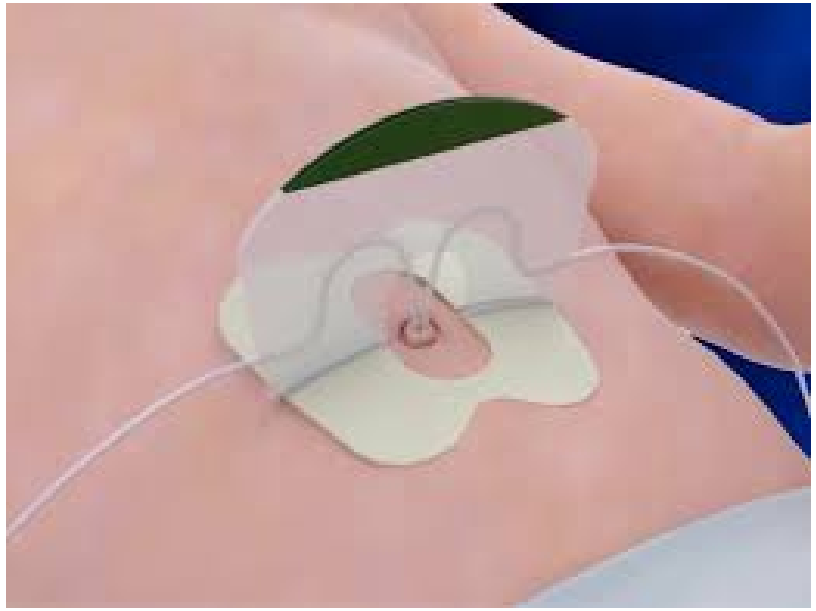


GI problems
NEC

- The necrosis (death) of intestinal tissue
- The exact cause is unknown
- Prematurity, IUGR
- GI hypoxia, Asphyxia, PDA, Polycythemia
- Poor mucosal integrity
- Bacterial infection /Flora
- Nonhuman milk

Pneumatosis intestinalis

Vascular Acees



Umbilical cord catheterization

PICC Lines

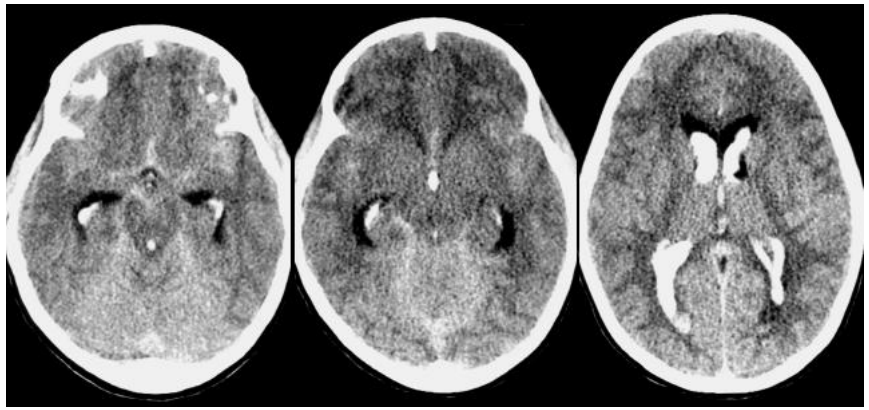
- **Infections:**
- Nosocomial: Bacterial, viral, fungal, protozoal

Invasion of barrier

Neurologic complications :

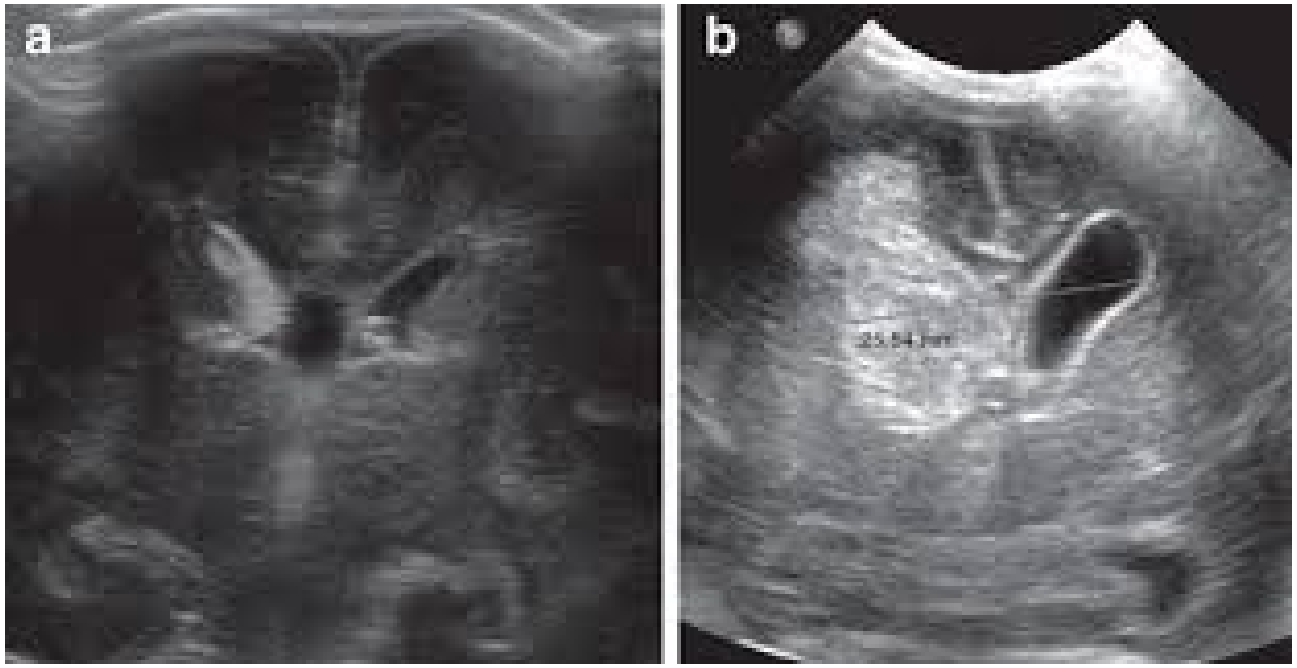
Intrventricular hemorrhage IVH

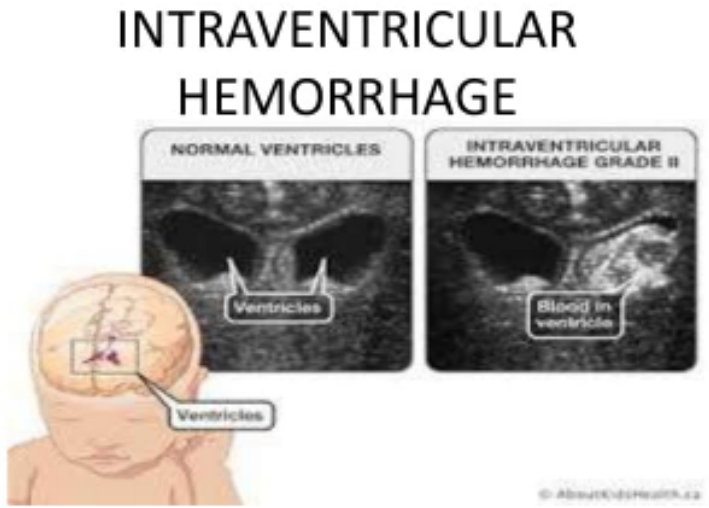
-.



✔ Can lead to PHH :post hemorrhagic hydrocephalus

Neurologic





BY,
Ms. Sheen. S. P. Belsylin
M.Sc Nursing 1st year

Long Term Complications

- Retinopathy of prematurity (ROP)
- Chronic lung disease
- Metabolic Bone disease
- Neurologic
  - Post hemorrhagic hydrocephalus
  - Periventricular Leukomalacia (PVL)
  - Neurodevelopmental delay
- Anemia of prematurity

Retinopathy of prematurity (ROP) Pathogenesis and clinical features

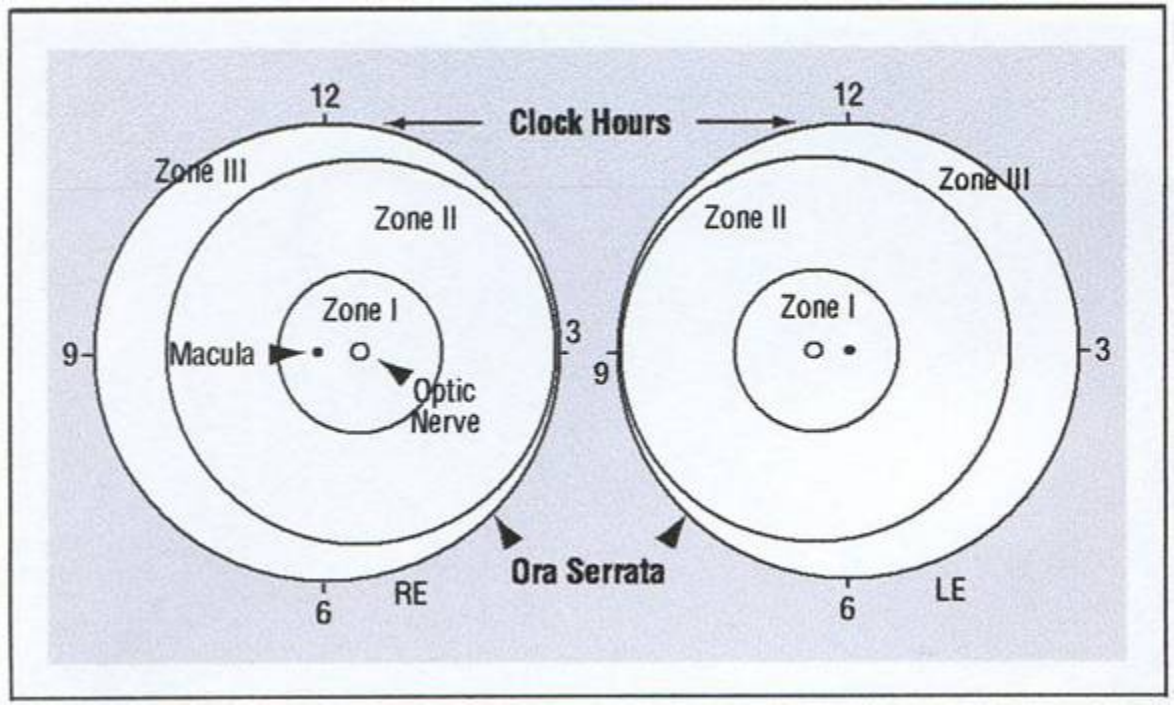
- Incomplete retinal vascularisation.

- Vessels migrate from disc to periphery weeks.
- Mature vessels extend to nasal ora at 36 weeks.
- Vessels extend to temporal ora at 39-41 weeks.

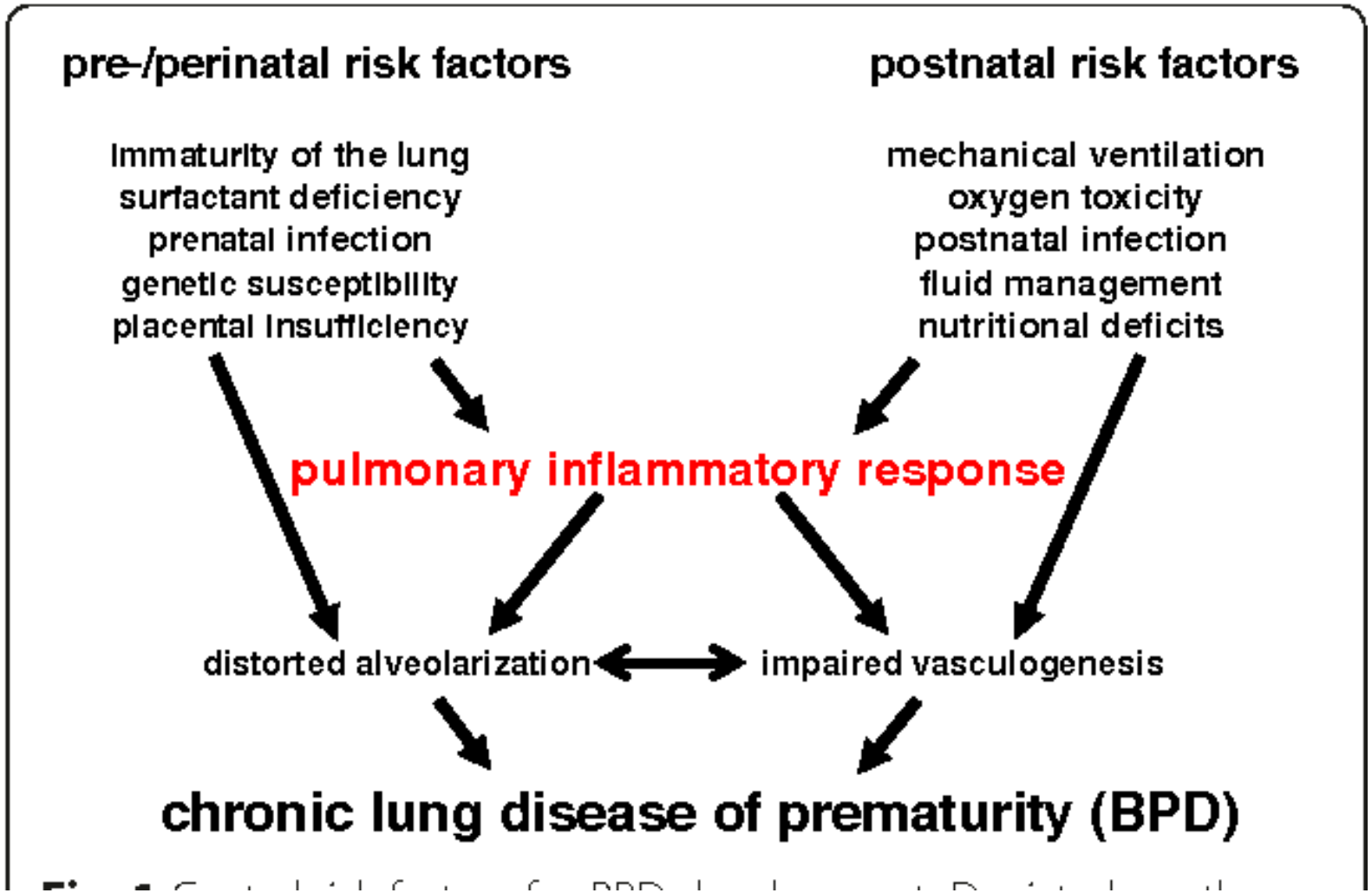
- Related to gestational age (GA) and birth weight (bw).

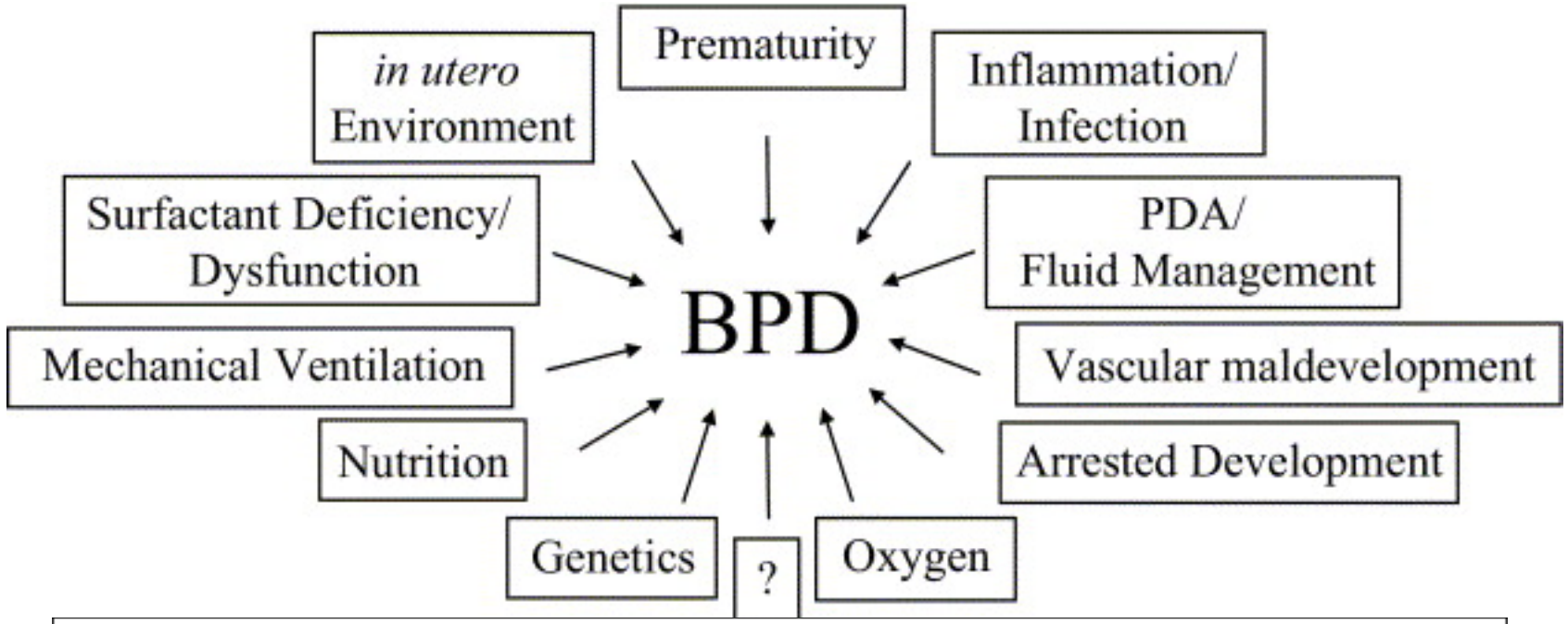
Classification of ROP:

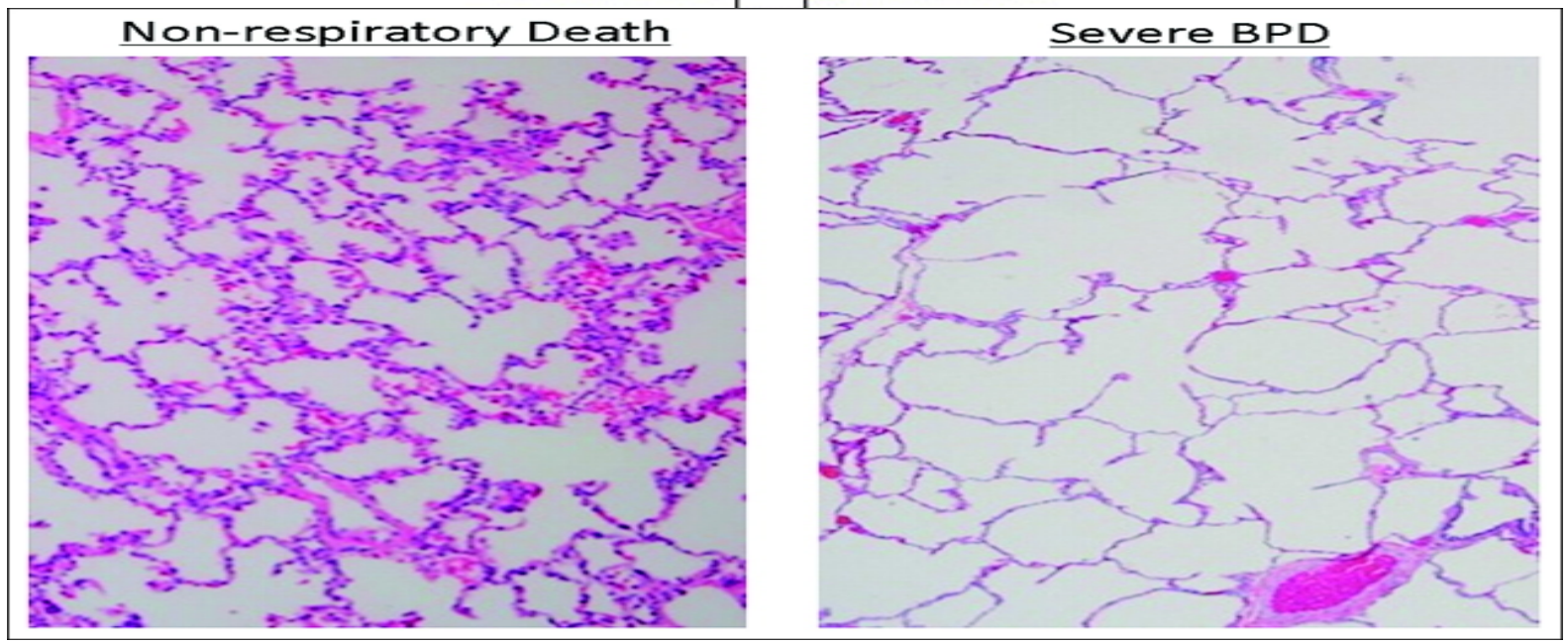
- International Classification of Retinopathy of Prematurity (ICROP)
- Describe ROP according to - Zone, Extent and Stage.



What happens in Broncho Pulmonary Dysplasia (BPD) = Chronic Lung Disease (CLD)?

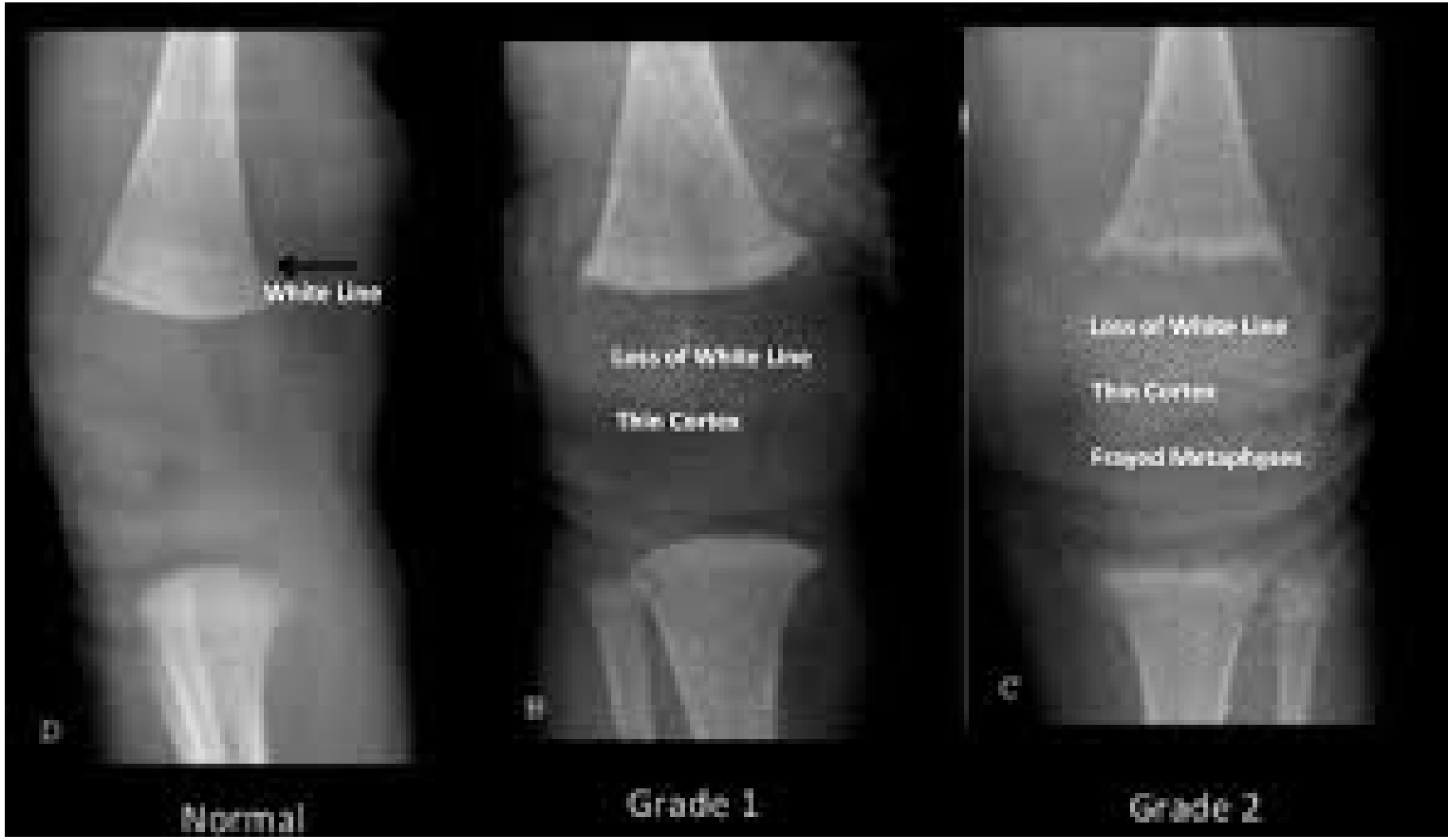



Prematurity
in utero Environment
Inflammation/ Infection
Surfactant Deficiency/ Dysfunction
PDA/ Fluid Management
BPD
Mechanical Ventilation
Vascular maldevelopment
Nutrition
Arrested Development
Genetics
?
Oxygen


Non-respiratory Death
Severe BPD

Metabolic bone disease of preterm (MBDP)

- DEFINITION
  - Is a **M**etabolic **B**one **D**isease of **P**retem infants
  - in which **decreased bone mineral c**ontent occurs mainly as a result of lack of adequate Ca & P
  - From
    - decrease intake in extra uterine life
    - in sufficient in utero supply (mainly last trimester and last trimester .
  - Screen. (If ≤ 30 wks if ≤ 1.5kg) at 4 weeks then weekly (mainly if <1kg,<28 wk and TPN > 2 wks)
  - Dx
    - Low P <4mg/dl IU/L. (< 1.25 mmol/l)
    - High Alk P > 600
    - PTH. > 7 pmol/L
    - Bone on X-ray (osteopenia, Fraying, Fracture)



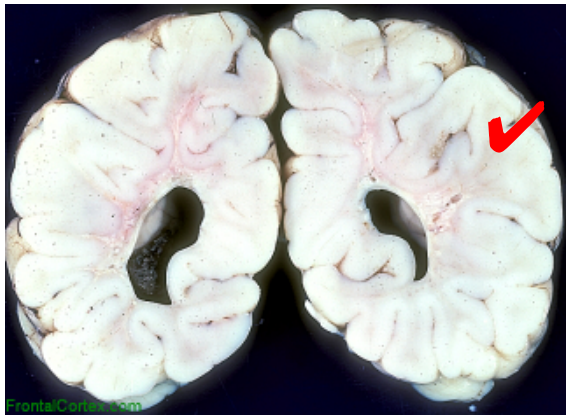
Normal OOP OOP

Metabolic bone disease of preterm (MBDP)

- Management:
  - Fortification of breast milk
  - Vitamin D
  - D/C medication
    - (steroid, caffien, frusimide. PPI)
  - Physical therapy
  - Safe handling

Neurologic complications :

Periventricular leukomalacia - softening of tissues of the brain around the ventricles



Later Problem when the baby is stabilized

Anemia of Prematurity

- Why does it happen ?
- Blood loss
- Shortened RBC lifespan
  - Preterm 40-60 days
- Inadequate RBC production
  - Suboptimal erythropoiesis in response to hypoxia
  - Switch from hepatic to renal O_2 sensor not till term

When can a premature baby go home from the hospital?

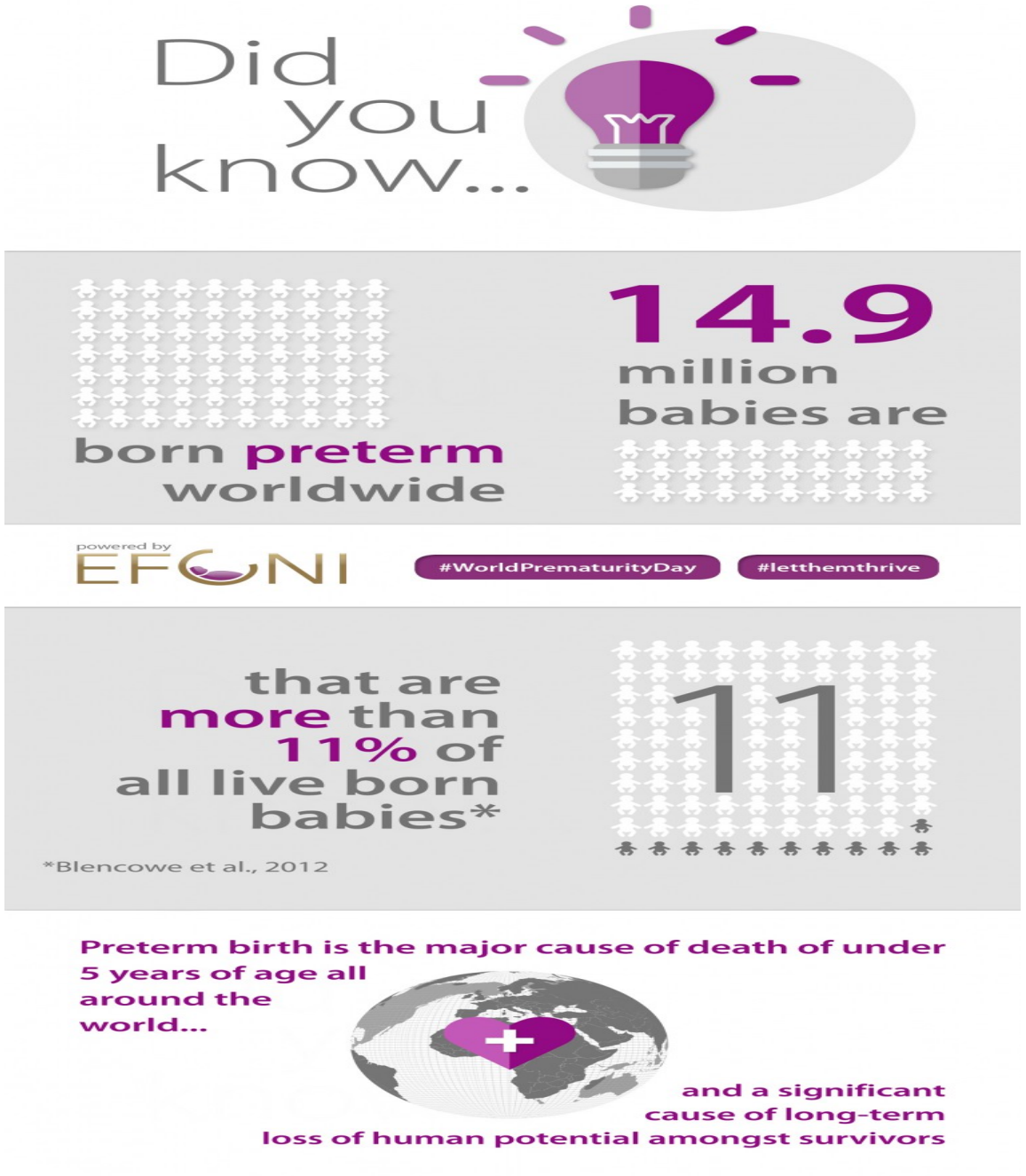
When can a premature baby go home from the hospital?

- Serious **illnesses** are resolved
- Stable **temperature** - able to stay warm in an open crib
- Taking all **feedings** by breast or bottle
- No recent **apnea** or low heart rate
- **Parents** are able to provide care including medications and feedings
- > **35** weeks and > 1.8-2 kg

Follow Up Care

- Screening tests:
- Hearing OAE/ ABR
- ROP
- Metabolic screen
- CPR training for parents
- Vaccinations
- Flu for parents and siblings
- Routine and RSV

Thank You!


Did you know...
14.9 million babies are born preterm worldwide
powered by EFONI
#WorldPrematurityDay
#letthemthrive
that are more than 11% of all live born babies*
11
*Blencowe et al., 2012
Preterm birth is the major cause of death of under 5 years of age all around the world...
and a significant cause of long-term loss of human potential amongst survivors