

# Chapter 4

## Birth and the Newborn Baby

# Stages of Childbirth

- Stage 1: Dilation and Effacement of Cervix
- Stage 2: Delivery of Baby
- Stage 3: Birth of Placenta

# Stage 1

"Dilation and Effacement of the Cervix"

- Lasts the longest
- Mean = 14 hours -- Much longer for 1st child
- Uterine contractions begin

# Stage 2

"Delivery of the Baby"

- Mean = 50 min for delivery -- 20 min for 2nd time
- Baby cries when oxygen enters lungs
- Umbilical cord cut

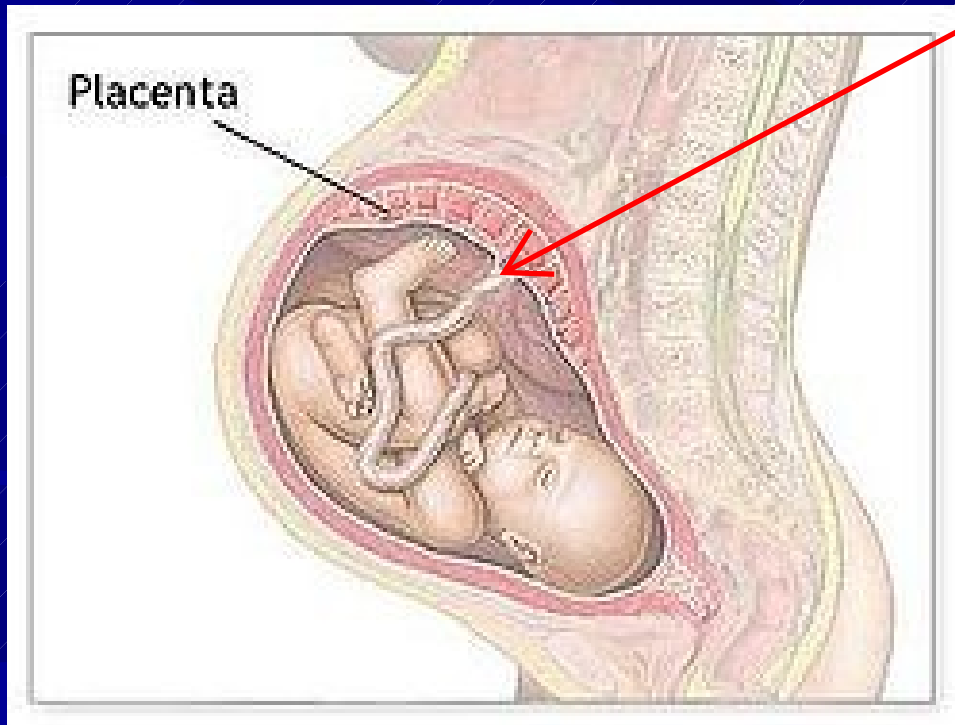
Due to irritation from new stimuli



# Stage 3

"Delivery of Placenta"

- Contractions occur
- Placenta is pushed out



# The Apgar Scale

Standard Measure of Health for Newborns



**A**pppearance

**P**ulse

**G**rimace

**A**ctivity

**R**espiration

# Apgar

- Developed in **1952 by Virginia Apgar**
- Assessment of infant health immediately after birth -- Usually at both 1 and 5 minutes
- **5 criteria scored from 0 of 2**
- Total score out of 10
- 7+ = **excellent**
- 4 – 6 = **assistance required**
- 3 or less = **emergency situation**

# Appearance

Does baby have a good colour?  
Circulation? Blood Flow?

0 - Baby's entire body is bluish-gray or pale

1 - Baby's body has good color, with a bluish tinge to the feet or hands

2 - Good color over entire body



# Pulse

Straight forward... does it have a strong pulse

0 - No heart beat

1 - Fewer than 100 beats per minute

2 - More than 100 beats per minute

# Grimace

Does baby resist suction of airway by grimacing

0 - No response when airways are suctioned

1 - Baby grimaces during suctioning

2 - Baby grimaces and pulls away, coughs, or sneezes during suctioning

# Activity

Straight forward, is the baby moving?

- 0 - Baby is limp, no detectable movement
- 1 - Baby displays some flexing of arms and legs
- 2 - Baby moves vigorously

# Respiration

Is baby crying loud and breathing well?

0 - Baby is not breathing

1 - Baby cries weakly, may sound like whimpering, with slow or irregular breathing

2 - Baby cries strongly, with a normal rate and effort of breathing

# The Apgar Scale

SIGN <sup>a</sup>	SCORE		
	0	1	2
Heart rate	No heartbeat	Under 100 beats per minute	100 to 140 beats per minute
Respiratory effort	No breathing for 60 seconds	Irregular, shallow breathing	Strong breathing and crying
Reflex irritability (sneezing, coughing, and grimacing)	No response	Weak reflexive response	Strong reflexive response
Muscle tone	Completely limp	Weak movements of arms and legs	Strong movements of arms and legs
Color <sup>b</sup>	Blue body, arms, and legs	Body pink with blue arms and legs	Body, arms, and legs completely pink

<sup>a</sup>To remember these signs, you may find it helpful to use a technique in which the original labels are reordered and renamed as follows: color = Appearance, heart rate = Pulse, reflex irritability = Grimace, muscle tone = Activity, and respiratory effort = Respiration. Together, the first letters of the new labels spell Apgar.

<sup>b</sup>The skin tone of nonwhite babies makes it difficult to apply the “pink” color criterion. However, newborns of all races can be rated for pinkish glow resulting from the flow of oxygen through body tissues.

Source: Apgar, 1953.

# Birth Complications: Cerebral Palsy

- Group of disorders
- Impact muscle coordination and body movement
- Due to brain damage before, during or after labour
- May be due to anoxia -- Oxygen Deprivation

# Anoxia

- **Oxygen deprivation** at birth
- May lead to brain damage or later cognitive, language problems
- **Causes include:**
  - Squeezing by umbilical cord
  - Placenta abruptio, placenta previa
  - Failing to breathe after birth
    - Respiratory distress syndrome in preterm infants  
Lungs so premature that they may collapse

# Outcomes of Anoxia

- Children are behind peers in intellectual and motor development in early childhood  
Delays in
- **Catch up development may occur**
- Severity depends on severity of anoxia  
More anoxia leads to greater symptoms



# Pre-term and Low Birth Weight

- **Premature** = born 3 weeks early or less than 5 ½ lbs at birth
- **At risk for:**
  - Language delays
  - Lower IQ
  - Motor coordination difficulties
- **Why?**
- **Body did not develop enough**
- 2 types of premature babies

2 Types

Preterm and

Small-for-Date Babies

## Preterm

- Born weeks before their due date.
- appropriate weight for length of pregnancy.

Early Date  
Correct Weight

## Small-for-Date

- May be born at due date or preterm.
- Below expected weight for length of pregnancy.
- Tend to have more problems  
Low weight for date

# Interventions for Preterm Infants

- Isolette -- Container
- Respirator
- Feeding tube
- Intravenous medication
- Special infant stimulation
- Kangaroo skin-to-skin contact
- Parent training in caregiving



Way TOO Long!!

# Postterm Infant

- Normal length of pregnancy = 38 weeks
- **Postterm infant** = born after 42 weeks
- Risk of oxygen deprivation increases
- Placenta malfunctions
- Toxic environment
- Labor induced
- Positive outcomes in development
- Table 4.2

# Newborn Baby's Capacities:

## Reflexes

- Reflex = inborn, automatic response to stimulation
- Survival value -- Some reason for the reflex
- Develop into voluntary movement
- Indication of a healthy CNS
- Most disappear at 6 months

# Infant States of Arousal

5 Stages during the day normally

1 ■ **Regular Sleep (NREM)**

2 ■ **Irregular Sleep (REM)**

- Brain active --Synapses Form
- 50% of sleep time

3 ■ **Drowsiness**

4 ■ **Quiet Alertness**

5 ■ **Waking Activity and Crying**



# Newborn Sense of Touch

- Helps stimulate physical and emotional development
- Form of interaction
- Sensitivity to touch, pain and temperature present at birth



# Newborn Senses of Taste and Smell

- Prefer sweet tastes at birth
- Quickly learn to like new tastes
- Facial expressions -- Hilarious ones
  
- Have odor preferences from birth
- Attracted to odor of mother's lactating breast - survival -- mmmmm



# Newborn Sense of Hearing

- Can hear a wide variety of sounds at birth
- Prefer complex sounds and patterns
- High pitched
- expressive



# Newborn Sense of Vision



- Least developed of senses at birth
- Unable to see long distances, focus clearly
- Visual centers incomplete
- Prefer colour