

## Chapter 2

### From Conception to Birth

### From Zygote to Newborn

- 3 main periods
- Germinal: First 14 Days
  - Within hours of conception, zygote (single cell) begins to divide
- Embryo: Wk 3--8-- 2-8 weeks
  - Wk 4: head forms (eyes, nose, mouth)
  - Wk 5: arms and legs
- Fetus: Wk 9 – birth (Wk 38)
  - Fetus
  - Wk 9: sex organs (see in ultrasound)
  - Age of viability: 22 Wks

\*dont need to know the weeks

\* need to know what happens in each stage

### You're On Your Way OUT!

- Fetal brain signals release of hormone oxytocin, preparing fetus to come out
- First birth: labour ~ 12 hrs
- Second +: ~ 7 hrs

### APGAR

- 5 Vital signs to check at 1 and 5 minutes
- **A**ppearance: skin colour
- **P**ulse: heartbeat
- **G**rimace: reflex irritability (crying, sneezing)
- **A**ctivity: muscle tone
- **R**espiration
- Score of 0, 1, 2
- Good = 7+

### Birth-Related Issues

- C-sections
  - Easier to schedule, quicker, more expensive
  - ↑ complications
  - ↓ breastfeeding
- Epidural: needle to spin, alleviate pain
  - ↑ C-section
  - ↓ readiness of infant sucking
- Induced labour

### Fathers!

- Couvade: experience similar bio and psych experiences
- Weight gain, labour pains, stress hormones, indigestion
- Fathers are important!
- Shift from traditional roles to co-parenting: employment, caregiving, playing, chores

### Postpartum Depression (PPD)

- ~ half will experience physical problems
  - Incisions from C, painfully sore nipples, urination
- As hormones ↓, 8 – 15% PPD
- Sense of inadequacy, sadness (baby blues)
- Baby care (feeding, diapering) seen as a burden
- A sign: high euphoria – can't sleep, stop talking, or worrying about baby
- Need to watch for a crash from the high
- Marital problems, finances, mother alone during birth, infant issues (sleeping, health, feeding)

### Parent-Infant Bond

- Involvement in pregnancy, birth, and care helps develop strong bond with infant
- Kangaroo care
  - Infants sleep more deeply, gain weight more quickly, more time alert

### Teratogens & Pregnancy

- Teratogen: anything that harms the fetus
  - Drugs, pollutants, stress, malnutrition
- Critical time: timing of embryo and exposure can thwart/alter/stop dev't
- Table 2.6: Read (not on test, good to know!)

### Low Birth Weight (LBW)

- Under 2,500 grams
- Differs by ethnicity: smaller than non-European and North American
- Pre-term: more than 3 wks
- Pre-term, LBW have long-term consequences to adulthood (e.g., heart disease, diabetes)
- Read: A View from Science: Infant mortality

## Chapter 3

### The First Two Years

### Growth

- Body size
  - Lose weight in first 3 days, then ↑ 30 grams/day for several mons
  - 2x in 4 mons
  - 3x in 1 yr
- Brain dev't
  - Plasticity: brain can be modified and changed by environ.
    - Brain looks different: non-stimulating vs. enriched environ.

### Plasticity of Brain

- Important as brain can re-design due to accident/disease
- \* Brain is highly influenced by environ.
- Need stimulating environ. to ensure dev't

### Sleep

- Newborns: 15 – 17 hrs!
- ↓ sleep over time: 6 – 17 mons, ~ 13 hrs

### The Senses

- At birth, all are working
- Touch and pain
  - Touch is important – soothing
  - Holding, kissing, massaging, tickling....
  - Pain (not a sense) – distress cries

### Hearing

- Hearing
  - Hearing: 3<sup>rd</sup> trimester!
  - Prefer mother's to female voice
  - Female than male
  - 24 wks!
  - Read *Cat in the Hat* 2x for 6.5 wks
- Prefer familiar, rhythmic sounds, soothing

### Vision

- Last to develop
- Legally blind, see up to 75 cm away

### Smelling & Tasting

- Through amniotic fluids, infants develop taste and smell
- If mothers ate anise-flavoured products, newborn preferred that smell

### Motor Skills

- Gross: large movements (legs, arms)
- 3 mons: sit up with support
- 6 mons: sit unsupported
- 5 mons: use arms, then legs to move on belly
- 8 – 10 mons: can crawl (coordinated)
- Don't need to crawl before walking

### Fine Motor Skills

- Fingers (small movements)
- Tongue, jaw, other small movements also
- 2 mons: waving hands
- 3 mons: touch objects, can't grab
  - No eye-hand coordination yet
- 4 mons: grab but timing may be off
  - Close hand before touching object
- 6 mons: can grab, and pass to other hand
- 1 year! Watch out – pincer movement!!!

### Nutrition

- Breastfeeding is best, esp. premies!
- Colostrum, a thick, high-calorie fluid
- Sterile
- Room temperature
- Rich in iron, vitamins
- Other nutrients for brain and body
- FREE
- Babies only on breast milk, less sick
- Provides antibodies
- Decreases allergies, asthma
- For first 4 – 6 mons

### Piaget: Level I: Sensorimotor Intelligence (6 Stages)

- Focus on self
- Stage 1: Simple reflexes
  - Neonatal reflexes during first mon (sucking, grabbing)
- Stage 2: Primary circular reactions
  - Sensation leads to perception circular, repeating
- Putting 2 actions/sensations together (looking, touching), doing it over and over
- Put hand in mouth – ohhh soothing, so do it again and again

### Stages 3 & 4: Infant Interacting With X

- External world is interesting!
- Stage 3: *Secondary circular reaction*
  - By chance, object produces exciting experiences
  - Realize rattle makes noise, so shakes arms when someone rattles it
- Stage 4: *Coordination of secondary circ rx*
  - Intentional!
  - Means to an end, goal-directed
  - More thinking involved
  - Waiting for X to look, then point to rattle to have it shaken

### Object Permanence

- Out of sight, out of mind?
- Permanent = lasting, for good!
- ~ 8 mon
- A-not-B error
  - Show infant, placing block under cloth A
  - Let infant find it
  - Place under A again and again
  - Then place under B in front of infant
  - Infant will look under A!

### Stages 5 & 6: Thinking & Acting

- *Stage 5: Tertiary circ rx*
  - New means via active experimentation
  - Intentional, purposive AND knowing BEFORE acting
  - “Little scientist” as they experiment to see “what will happen”
- *Stage 6: Mental Representation*
  - New means via mental representation
  - Mental: in the mind
  - Figure out solution BEFORE acting out
  - Toy out of reach, on blanket

### Language

- Hear before birth
- Prefer mother language
- Even watching facial and know if native language (mouth movements)
- Prefer sounds than content
- Prefer rhymes, repetition....
- Prefer native music
- Cooing: 2 mons
- Babbling: 6 mons, make sounds (mamama)
  - Using gestures before speech
- First words: ~ 1 yr
- Holophrase: 1 word = 1 thought

### Child-Directed Speech

- Motherese, parentese, baby talk
- Higher pitch
- Simpler words
- Repetition
- Varied speeds
- Exaggerated movements, tones

### Test 1 Review

- 50 Questions, 2 bonuses!
- Multiple choice, up to D
- UNLIMITED Time!
- Next week, Chapter 4 (7 – 8 PM)
- Test **STARTS** at 8 PM

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