Chapter 8

Early Childhood: Biosocial Development

I. Body Changes

A. Growth Patterns

1. Children become slimmer as the lower body lengthens.
2. By Age 6 a child’s body proportions are similar to those of the adult
3. Well nourished children add about 3” and 4½ pds. per year
4. The range of normal development is very broad - By age 6, the average child in a developed nation:
   ● Is at least 3. feet tall (more than 110 centimeters)
   ● Weighs between 40 and 50 pounds (between 18 and 23 kilograms)
   ● Looks lean, not chubby
   ● Has adult-like body proportions (legs constitute about half the total height)
5. The 3 main factors that influence growth are genetic background, health care and nutrition
6. Nutrition is the most responsible for the large variance – poor nutrition stunts growth.
7. Cultural patterns can also affect growth. In some south Asian families males are better fed and cared for than girls. The girls tend to be much shorter and smaller and more likely to die.

B. Nutrition and Nutritional deficiencies

1. Growth is slower during this time, --need fewer calories – appetites are now smaller
2. Past twenty years decline in calcium: children drink more juice instead of milk
3. Iron deficiency 3x more common among low income children
4. Too much sugar is the main cause of tooth decay
5. Children in low-income families are especially vulnerable to obesity because their cultures still guard against undernutrition and their parents may rely on fast foods.
6. Many children also consume too much fat – children in poverty and children 3x above level are most likely to consume exceed 30% fat limit
7. Overfeeding is causing an epidemic of illnesses associated with obesity, such as heart disease and diabetes.
8. Obesity is a more frequent problem than malnutrition.
9. Many developmentalists promote more exercise in children
Nutritional Deficiencies:

10. Most children in developed nations consume more than enough calories but not enough iron, zinc, and calcium.
11. Many customs entice children to eat sweets which are a poor substitute for balanced, varied diet.
12. Gender, ethnicity, and income correlate with body fat.
13. Estimated 3 to 8 percent of all young children are allergic to a specific food—almost always a common, healthy one.
14. Insistence on eating only certain foods prepared a certain way is common at this age: Just right, Just so.
15. 75% of 2 year olds display one or more of following:
   • Preferred to have things done in a particular order or in a certain way
   • Had strong preferences for wearing or not wearing certain clothing
   • Prepared for bed with a special activity, routine, ritual
   • Had strong preference for certain foods
16. By age 6 this rigidity begins to fade.
17. The best tactic is to offer ample healthy foods when the child is hungry and limit high-calorie snacks.

Oral health
18. Too much sugar, too little fiber, diet, and health cause tooth decay.
19. Parental childhood experiences and habits and income may create barriers to good dental care.
20. USPS urges addition of fluoride coat to teeth of preschoolers who have no other source of fluoride.

II. Brain Growth and Development

A. Size
   1. By age 2, a child’s brain weighs 75 percent of what it will in adulthood.
   2. Extensive sprouting and then pruning of dendrites has already taken place.
   3. The brain reaches 90 percent of adult weight by age 6—the body is 33% of its adult weight.

B. Speed of thought
   4. Primary reason for faster thinking is new and extensive myelination.
   5. A gradual increase in myelination makes 6-year-olds much quicker than 3-year-olds, who are quicker than toddlers.
   6. Experience affects the rate of myelination; practice makes thoughts come more quickly.
7. Myelination occurs most rapidly in the areas that are dedicated to memory and reflection

C. The Brain's Connected Hemispheres

1. Corpus callosum
   - Long, thick band of nerve fibers that connects the left and right hemispheres of the brain and allows communication between them
   - Corpus collumus becomes notably thicker due to dendrite growth and myelination

2. Lateralization
   - Specialization in certain functions by each side of the brain, with one side dominant for each activity
   - Left side of the brain controls the right side of the body, and vice versa.
   - The right ear is specialized for understanding speech; and the left ear is specialized for understanding tunes and emotions
   - Specialization begins before birth

3. Handedness
   - Handedness is preference for a dominant hand.
   - Children who are left handed make take longer to learn a written language that is right handed based
   - Handedness is partly genetic.
   - 1 in 10 children prefers left hand.
   - Many cultures support on right-handedness (difference-equals-deficit error).

4. Contemporary views on left-right distinction
   - Distinction exaggerated
   - No exclusive sidedness in healthy people
   - Both sides of brain involved in almost every skill- Every cognitive skill requires both sides of the brain, just as every motor skill requires both sides of the body
   - Brain is flexible, especially in early life
   - Damage to the brain is more traumatic to adults than to children
   - If a child’s left side of the brain is injured where most language functions take place, then the right side often takes over this role.
   - The left side of the brain controls the right side of the body and the areas of the brain dedicated to logic, analysis and language; and the right side controls the left side of the body and creative impulses and emotions
D. Planning and Analyzing

Maturation of prefrontal cortex
- Prefrontal cortex is the front part of the brain and is very limited in infancy and continues to develop at least until early adulthood.
- Between ages 2 and 6, neurological increases are especially notable in the areas of the cortex, where planning, thinking, social awareness, and language occur.
- Neurological immaturity is another reason adults need to prevent childhood injury.

Impulsiveness and preservation
- Maturation of the prefrontal cortex gradually facilitates focused attention and curbed impulsiveness.
- Before such maturation, many young children jump from task to task; they cannot stay quiet.
- Others act in the opposite way: In a phenomenon called perseveration, some children persevere in, or stick to, one thought or action, unable to quit.
- A crucial function of the prefrontal cortex is to halt, or inhibit, various impulses, stopping immediate reactions, especially emotional ones.
- Assists in self control and self-regulation.
- Since young children have little ability to plan and select they are generally impulsive and perseverative.

Advances in neurological control between ages 2 and 6 are evident in several ways:
- Sleep becomes more regular.
- Emotions become more nuanced and responsive.
- Temper tantrums subside.
- Uncontrollable laughter and tears are less common.
1. Brain development does not occur at the same age for every child.
2. Areas of the brain for eye movement and visual focus grow measurably during the preschool years.
3. Most 6 year olds are able to:
   - Sit in one place for an hour or so
   - Scan a page of print, moving eyes from left to right & top to bottom
   - Balance the sides of the body enabling skipping galloping and kicking catching balls
   - Draw and write with one hand accurately copying letters and shapes
   - Listen and think before talking
   - Remember important facts and instructions for a few seconds
   - Control emotions with tears, temper, or laughter seldom erupting at the wrong time
4. Experience is crucial in all of these abilities.
Early traumatic or stressful events

- Increased risk
- Permanent learning and memory deficits related to toxic stress
- Later major depression, PTSD, and ADHD
- Benefits
- Cognitive and memory growth with reassuring adults
- Context, duration, parental support, and child temperament are important
- Children with highly stressful lives or whose emotions are too unhandled are severely handicapped in their brains as well as their actions

III. Improved Motor Skills

- Children develop all their motor skills spontaneously and diligently as they play.
- By age 6, most North Americans ride tricycles; climb ladders; pump their legs on swings; and throw, catch, and kick balls.
- Muscle growth, brain maturation, and guided practice advance every gross motor skill.
- Practice improves dexterity and advances fine motor skills, which involve small body movements.

A. Gross Motor Skills

1. Brain maturation, motivation, and guided practice make gross motor skills possible.
2. Influence of culture and locale is important.
3. By 5 more skilled and graceful
4. Most can ride a tricycle, climb hand over hand, throw, catch, kick a ball
5. There is generally a peak in activity level at around 2 and then a decline throughout childhood
6. Generally learn motor skills best through their own exploration and peers rather than from adults
7. Needs opportunities to practice

B. Fine Motor Skills

1. Are more difficult to master
2. Main reason for difficulty is they haven’t gained the necessary control, patience, and judgement (CNS)
3. Involve small hand and finger movements
4. Often involve both sides of brain
5. Influenced by practice and maturation
6. On average, mature 6 months earlier in females
7. Neural immaturity is compounded by short stubby fingers, tools designed for adults and confusion about which hand is dominant

8. Need opportunities to practice

9. Adults can help by offering tools, time, and encouragement, and if left hand is dominate offering appropriate tools (left handed scissors)

10. Children love to express themselves artistically

11. Apply different affordances to the materials and use them for symbolic representation and to express their understandings

12. Pictures children draw are closely related to their perception and cognition

E. Injuries and abuse

Accidents
1. In almost all families of every income, ethnicity, and nation, parents want to protect their children while fostering their growth.
2. In every nation, more young children die from accidents than from any other specific cause.
3. Accidents are the major cause of death
4. Boys have more accidental deaths than girls

Avoidable Injury
   Age-related dangers
   Falls
   Motor-vehicle deaths
   Poison
   Fire
   Drowning

   Injury control (harm reduction)
   Safety surfaces
   Car seats
   Bike helmets
   Safety containers for medications
   Pool monitoring
   Injury control – safety laws have lowered the risk of death
   • Child safety caps—reduced deaths by 80%
   • Flame retardant sleep wear < 97%
   • Fence around pools decreased deaths by 51%
   • Car seats < 70%
   • Helmets for bikes <88%
IV. Child Maltreatment

A. Facets

1. **Child maltreatment** – Intentional harm to or avoidable endangerment of anyone under 18 years of age
2. **Abuse** – Deliberate action that is harmful to a child's physical, emotional, or sexual well-being
3. **Neglect** – Failure to meet a child's basic physical, educational, or emotional needs
4. **Substantiated maltreatment** - Harm or endangerment that has been reported, investigated, and verified
5. **Reported maltreatment** - Harm or endangerment about which someone has notified the authorities
6. **Frequency of maltreatment** - Reports have increased since 1950, but substantiated rates have decreased every year since 1990. Fewer homes with many small children. Variation in level of professional scrutiny related to abuse. Maltreatment may be under-reported.

7. Hypervigilancy -- (excessive watchfulness)
8. The event most often witnessed by children in developed countries is father beating mother; in developing nations it is gunfire and torture in war
9. Must look at cultural context and customs (i.e. Pierced ears, circumcision, castor oil, forced feeding of hated foods, ceremonial facial scars, permed or tightly braided hair, encouragement of sports that bring bruising or injury, forced sleeping alone despite tears, harsh words designed to shame)
10. Poverty and social isolation seem universally conducive to maltreatment
11. Maltreatment occurs more frequently and more severely as family income falls, particularly if the following are present:
   • 3 or more siblings
   • An unemployed father
   • A mother who did not complete high school
   • Homes in poor, high crime neighborhoods

**Warning Signs**

- In general: Delayed development (slow growth, immature communication, lack of curiosity, unusual social interactions)
- By early childhood: Fearful, startled by noise, defensive, quick to attack, confused between fantasy and reality
  - These are the symptoms of post-traumatic stress disorder
B. Consequences

Effects of maltreatment are devastating and long-lasting—the child and the community are affected.

*Mistreated and neglected children*

1. Regard people as hostile and exploitative
2. Are less friendly, more aggressive, and more isolated than other children
3. Experience greater social deficits
4. May experience large and enduring economic consequences
5. Chronically abused or neglected children tend to be
   a. Underweight
   b. Slower to talk
   c. Less able to concentrate
   d. Delayed in academic growth
   e. Deficits in social skills
   f. Less friendly
   g. More aggressive
   h. More isolated
   i. Often a bully or victim or both

6. The longer the abuse continues the worse their relationships with peers
7. As adolescents and adults –
   a. Typically use drugs and alcohol to numb emotions
   b. Choose unsupportive relationships
   c. Sabotage their own careers
   d. Eat too much or too little
   e. Engage in self-destructive behavior

8. Generation to generation
   a. Intergenerational transmission is 30-40%

Three levels of prevention

- **Primary prevention**: Focus on macrosystem and exosystem; stable neighborhood, family cohesion, decreasing financial instability, family isolation, and teenage parenthood. Some neighborhoods are better at preventing child abuse—stability of residents, home ownership, support of churches and community centers. Basic values, 2 parent homes, planned and wanted children, raised by a community that cherishes their children. A large gap between rich and poor increases neglect and an increase in runaways.

- **Secondary prevention**: Focus on identifying and intervening; insecure attachment

- **Tertiary prevention**: Focus on limiting harm after maltreatment
C. Tertiary Prevention and Placement

1. Permanency planning
2. Foster care
3. Kinship care
4. Adoption

Permanency planning
   a. An effort by child welfare authorities to find a long-term living situation that will provide stability and support for a maltreated child. A goal is to avoid repeated changes of caregiver or school, which can be particularly harmful to the child.

Foster care
   b. A legal, publicly supported system in which a maltreated child is removed from the parents’ custody and entrusted to another adult or family, which is reimbursed for expenses incurred in meeting the child’s needs.

Kinship care
   c. A form of foster care in which a relative of a maltreated child, usually a grandparent, becomes the approved caregiver.

Adoption
   d. A legal proceeding in which an adult or couple unrelated to a child is granted the joys and obligations of being that child’s parent(s).