Chapter 6: Physical Development & Health during the First Three Years

Prepared by Debbie Laffranchini
From Papalia, Olds, and Feldman
• Patterns of Growth
  • Children grow faster during first 3 years than any other time of life
  • 5 months: weight doubled (16 lbs)
  • 1 year: weight tripled (23 lbs)
• Height:
  • 10 inches first year
  • 5 inches second year
  • 3 inches third year
Patterns of Growth

- Teething around 5 – 9 months
- By 1 year, 6 – 8 teeth
- By 2 ½ years, 20 teeth
Nourishment

• When germs discovered, the bottle was known as the “poisonous bottle”
• By early 1900’s, refrigeration, pasteurization, sterilization, manufactured formula modified, and improved design of bottle, bottle feeding became safe, nutritious and popular
• By mid-1900’s, formula feeding became the norm in US, 1971 only 25% of US mothers breastfed
• Now recognized as beneficial and 2/3 of American mothers breast-feed at least briefly
  – 35% breast-feed until 6 months
    • Only 13% are exclusively breast-feeding
• Worldwide: ½ of infants are breast-fed
Encouraging Breast-Feeding

• Emotional and physical act
  – Warm contact with the mother’s body

• Nutritionally: always best food (RARE exceptions)
  – American Academy of Pediatrics recommends:
    • Exclusively breast-feeding for 6 months
    • Expressed human milk for infants unable to nurse
    • Breastfeeding for at least one year
    • Formula should contain iron
    • Cow’s milk at 1 year

• Health advantages:
  – Fewer illnesses: diarrhea, respiratory infections, otitis media, staphylococcal, bacterial, and urinary tract infections
  – May reduce risk of postneonatal death
Nourishment
Breast-Feeding: Benefits and Cautions

- Benefits to infant development:
  - Visual acuity
  - Neurological development
  - Long-term cardiovascular health
    - Cholesterol levels
  - Prevention of:
    - Obesity
    - Diabetes
    - Lymphoma
    - Leukemia
    - Hodgkin disease
  - Less likely to be overfed (they actively regulate their intake)
  - Improved cognitive development, into young adulthood
Nourishment
Breast-Feeding: Benefits and Cautions

• Benefits to mother
  – Less postpartum bleeding
  – Quicker physical recovery
  – Earlier return to previous weight
  – After menopause, less risk of breast cancer and ovarian cancer, possibly less risk of osteoporosis and hip fractures

• Breastfeeding mothers must avoid:
  – Alcohol

• Mothers should not breastfeed if:
  – HIV/AIDS
  – Untreated active TB
  – Exposed to radiation
  – Taking any drug that is not safe for baby
  – Infectious illness
Nourishment
Encouraging Breast-Feeding

• Since 1991 US hospitals can be designated as “Baby Friendly” under United Nations initiative for encouraging support of breast-feeding
  – Rooming in
  – Tell benefits of breast-feedings
  – Assist them in beginning within 1 hour of birth
  – Show them how to maintain lactation
  – Encourage on-demand feeding
  – Give infants nothing except breast milk
Nutritional Concerns

• Iron-enriched solid foods beginning with cereal introduced gradually between 6 months to 12 months
  – Parents don’t follow this recommendation
  – Eat foods too early, juice too early, and foods that do not contribute to growth and development, too many calories
  – By 2 years, French fries are most commonly consumed vegetable, 1/3 don’t eat fruits, 60% eat baked desserts, 20% eat candy, and 44% drink sweetened drinks daily

• Overweight infants increased
  – Two factors influencing chance of overweight child becoming obese adult:
    • Obese parent
      – One obese parent increases odds of obesity in adulthood to 3 to 1
      – Two obese parents increases 10 to 1
    • Age of child
      – Before 3 parental obesity is stronger predictor
Building the Brain
Major Parts of the Brain

- **Brain stem**
  - Responsible for:
    - Breathing
    - Heart rate
    - Body temperature
    - Sleep-wake cycle
Building the Brain
Major Parts of the Brain

- Cerebellum
  - Maintains balance
  - Maintains motor coordination
  - Grows fastest during first year of life
Building the Brain
Major Parts of the Brain

• Cerebrum
  – Largest part of the brain
  – Divided into right and left halves (hemispheres)
  – Hemispheres: lateralization
    • Specialize
      – Left: language and logic
      – Right: visual and spatial functions
Building the Brain
Major Parts of the Brain

Corpus Callosum
Building the Brain
Major Parts of the Brain

- Each cerebral hemisphere has four lobes
  - Lobes develop at different rates
  - Frontal lobe
  - Parietal lobe
  - Occipital lobe
  - Temporal lobe
- Cerebral cortex regions for vision, hearing, and other sensory information grow rapidly first few months and are mature by 6 months
- Frontal lobe with abstract thought, mental associations, remembering and deliberate motor responses are immature for several years
Building the Brain: Brain Cells

- Brain is composed of neurons and glia
  - Neurons send and receive information
  - Glia nourish and protect the neurons
  - At 2 months gestation, 250,000 immature neurons produced every minute through mitosis
  - At birth, 100 billion neurons in the brain
Building the Brain: Brain Cells, Axons and Dendrites
Building the Brain: Brain Cells, Synapses
Building the Brain: Brain Cells, Neurotransmitters
Building the Brain: Brain Cells, Axons and Dendrites

- Multiplication of dendrites and synaptic connections 6.5 months gestation, 6 months to 2 years causes brain to grow
  - Allows for emergence of new perceptual abilities
  - Allows for new cognitive abilities
  - Allows for new motor abilities

- Neurons multiply and migrate to their assigned locations
  - Integrate: coordinate activities
  - Differentiate: each neuron takes on specific, specialized structure and function

- Cell death (pruning): brain has more neurons that it needs
  - Those not used or not functioning well die
  - Begins prenatally to create efficient nervous system
Building the Brain: Myelination
Building the Brain: Myelination

- Myelination
  - Allows signals to travel faster and more smoothly
  - Begins halfway through gestation in some parts of the brain
  - Pathways related to sense of touch are the first to develop, by birth
  - Pathways related to vision slower to mature, beginning at birth through the 5th month
  - Pathways related to hearing may be myelinated 5th month of gestation but not complete until 4 years
Growth of Neural Connections During the First Two Years
1. An embryo’s brain produces many more neurons, or nerve cells, than it needs, then eliminates the excess.

2. The surviving neurons spin out axons, the long-distance transmission lines of the nervous system. At their ends, the axons spin out multiple branches that temporarily connect with many targets.

3. Spontaneous bursts of electrical activity strengthen some of these connections, while others (the connections that are not reinforced by activity) atrophy.

4. After birth, the brain experiences a second growth spurt, as the axons (which send signals) and dendrites (which receive them) explode with new connections. Electrical activity, triggered by a flood of sensory experiences, fine-tunes the brain’s circuitry—determining which connections will be retained and which will be pruned.
Early Reflexes

- Involuntary reflexes: automatic, controlled by the lower brain centers
  - Breathing and heart rate
- Human infants have 27 major reflexes, many present at birth or soon after
- Primitive reflexes related to survival and protection
  - Sucking, rooting, Moro reflex, grasping
- Postural reflexes result of higher brain centers becoming active during 2 – 4 months
  - Reactions to changes in position and balance
    • Parachute
- Locomotor reflexes look voluntary initially
  - Walking reflex, swimming reflex
Early Reflexes

• Most early reflexes disappear during first 6 months to 1 year
• Protective reflexes remain
  – Blinking, yawning, coughing, gagging, sneezing, shivering, pupillary reflex
• When reflexes no longer needed disappear, sign that motor pathways in cortex have partially myelinated, leading to voluntary behavior
<table>
<thead>
<tr>
<th>Reflex</th>
<th>Stimulation</th>
<th>Baby's Behavior</th>
<th>Typical Age of Appearance</th>
<th>Typical Age of Disappearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moro</td>
<td>Baby is dropped or hears loud noise.</td>
<td>Extends legs, arms, and fingers; arches back, draws back head.</td>
<td>7th month of gestation</td>
<td>3 months</td>
</tr>
<tr>
<td>Darwinian (grasping)</td>
<td>Palm of baby's hand is stroked.</td>
<td>Makes strong fist, can be raised to standing position if both fists are closed around a stick.</td>
<td>7th month of gestation</td>
<td>4 months</td>
</tr>
<tr>
<td>Tonic neck</td>
<td>Baby is laid down on back.</td>
<td>Turns head to one side, assumes “fencer” position, extends arms and legs on preferred side, flexes opposite limbs.</td>
<td>7th month of gestation</td>
<td>5 months</td>
</tr>
<tr>
<td>Babkin</td>
<td>Both of baby’s palms are stroked at once.</td>
<td>Mouth opens, eyes close, neck flexes, head tilts forward.</td>
<td>Birth</td>
<td>3 months</td>
</tr>
<tr>
<td>Babinski</td>
<td>Sole of baby’s foot is stroked.</td>
<td>Toes fan out, foot twists in.</td>
<td>Birth</td>
<td>4 months</td>
</tr>
<tr>
<td>Rooting</td>
<td>Baby’s cheek or lower lip is stroked with finger or nipple.</td>
<td>Head turns, mouth opens, sucking movements begin.</td>
<td>Birth</td>
<td>9 months</td>
</tr>
<tr>
<td>Walking</td>
<td>Baby is held under arms, with bare feet touching flat surface.</td>
<td>Makes steplike motions that look like well-coordinated walking.</td>
<td>1 month</td>
<td>4 months</td>
</tr>
<tr>
<td>Swimming</td>
<td>Baby is put into water face down.</td>
<td>Makes well-coordinated swimming movements.</td>
<td>1 month</td>
<td>4 months</td>
</tr>
</tbody>
</table>

- Moro reflex
- Darwinian reflex
- Tonic neck reflex
- Babinski reflex
- Rooting reflex
- Walking reflex
Molding the Brain: The Role of Experience

• Plasticity: ability of brain to be modified positively and negatively by environmental experience
  – Brain is especially vulnerable during this time
    • Exposure to hazardous drugs, environmental toxins, or maternal stress before or after birth can threaten developing brain
    • Malnutrition can interfere with normal cognitive growth
    • Early abuse can harm brain permanently
    • Sensory impoverishment can harm brain permanently
  – Enriched experiences can spur brain development and make up for past deprivation in many instances

• Age of restoration of experiences determines outcome
  – Younger children have best outcome, under the age of 2 – 3 years
Early Sensory Capacities

- Touch and Pain
- Smell and Taste
- Hearing
- Sight
• First sense to develop, most mature first few months of life
• Newborns do feel pain (evidence of pain in third trimester)
• Infants do feel pain (circumcision)
• Prolonged or severe pain can do long-term harm to newborns
Smell & Taste

- Begin to develop in the womb
- Flavors and odors of foods mother consumes may transmit to fetus through amniotic fluid
  - Later, through breast milk
- Preference for fragrance of their mother’s breast milk
- Taste preferences largely innate
  - Prefer sweet to sour, bitter or salty
    - Many bitter substances are toxic, may be survival mechanism
- Taste preferences developed in infancy may last into early childhood
Hearing

• Hearing is functional before birth
  – Fetus responds to sounds and can recognize sounds
  – Early recognition of voices and language heard in the womb may be a foundation for relationship with mother

• Hearing is key to language development and problems need to be identified
Sight

- Vision is least developed sense at birth
  - Not much to see in womb!
- Peripheral vision is very narrow, doubles between 2 and 10 weeks
- Tracking develops rapidly in first months
- Color perception develops in first few months
- Visual acuity at birth is 20/400 and reaches 20/20 by 8 months
- Binocular vision develops about 4 – 5 months
- Early detection is critical to prevent life-long problems
Motor Development

- Milestones
- Motor Development & Perception
- Eleanor & James Gibson’s Ecological Theory of Perception
- Cultural Influences
## Milestones

**Table 6-2: Milestones of Motor Development**

<table>
<thead>
<tr>
<th>Skill</th>
<th>50 percent</th>
<th>90 percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolling over</td>
<td>3.2 months</td>
<td>5.4 months</td>
</tr>
<tr>
<td>Grasping rattle</td>
<td>3.3 months</td>
<td>3.9 months</td>
</tr>
<tr>
<td>Sitting without support</td>
<td>5.9 months</td>
<td>6.8 months</td>
</tr>
<tr>
<td>Standing while holding on</td>
<td>7.2 months</td>
<td>8.5 months</td>
</tr>
<tr>
<td>Grasping with thumb and finger</td>
<td>8.2 months</td>
<td>10.2 months</td>
</tr>
<tr>
<td>Standing alone well</td>
<td>11.5 months</td>
<td>13.7 months</td>
</tr>
<tr>
<td>Walking well</td>
<td>12.3 months</td>
<td>14.9 months</td>
</tr>
<tr>
<td>Building tower of two cubes</td>
<td>14.8 months</td>
<td>20.6 months</td>
</tr>
<tr>
<td>Walking up steps</td>
<td>16.6 months</td>
<td>21.6 months</td>
</tr>
<tr>
<td>Jumping in place</td>
<td>23.8 months</td>
<td>2.4 years</td>
</tr>
<tr>
<td>Copying circle</td>
<td>3.4 years</td>
<td>4.0 years</td>
</tr>
</tbody>
</table>

*Note: This table shows the approximate ages when 50 percent and 90 percent of children can perform each skill, according to the Denver Training Manual II.*

*Source: Adapted from Frankenburg et al., 1992.*
Milestones

• Denver Developmental Screening (Denver II) charts normal progress 1 month - 0 6 years and to identify children who are not developing normally
  – Assesses gross motor skills
  – Assesses fine motor skills
  – Assesses language development
  – Assesses personality and social development
  – 50% of children can perform at that age
  – Developed with Western populations
• Head Control:  simple to complex, going for higher and longer periods
• Hand Control:  grasping about 3.5 months, then transfer, and then build a 2-block tower at 15 months
  – Needs to be able to hold two objects, let go of objects
• Locomotion
  – Walkers don’t assist in walking: restrict exploration, dangerous (197,200 walker-related injuries treated in US ERs in 11-year period
    • American Academy of Pediatrics has asked for a ban on the sale of walkers
  – Simple to complex:  rolling, sitting, crawling, creeping
    • Assists in development of depth perceptions
Motor Development & Perception

• Sensory perception: allows infants to learn about themselves and their environment
  – Make better judgments
  – Bidirectional connection between perception and action
    • Mediated by the develop brain

• Depth perception: ability to perceive objects and surfaces in three dimensions

• Haptic perception: ability to get information by handling objects instead of just looking
Eleanor & James Gibson’s Ecological Theory of Perception: Posture-specific
• 6 month old babies were placed on a Plexiglas tabletop laid over a checkerboard pattern that created the illusion of a vertical drop in the center - a visual cliff. Would the infant perceive the illusion of depth? Was there a difference between the “ledge” and the “drop”.
How Motor Development Occurs: Thelen’s Dynamic Systems Theory

• Typical sequence of motor development was traditionally thought to be genetically programmed
  – Automatic, preordained series of steps directed by the maturing brain

• Thelen says motor development is a continuous process of interaction between baby and the environment
  – Development does not have a single, simple cause

• Infant and environment are interconnected and dynamic
  – Includes infant’s motivation
    • Intensity of desire
  – Includes muscular strength
  – Includes position in the environment at a particular moment in time, including energy level and speed
• 6 month old babies were placed on a Plexiglas tabletop laid over a checkerboard pattern that created the illusion of a vertical drop in the center—a visual cliff. Would the infant perceive the illusion of depth? Was there a difference between the “ledge” and the “drop”.
Cultural Influences

- Dynamic Systems Theory: pacing of introduction of play and ideas is cultural
  - Development is likely to be normal when:
    - Children are well fed
    - Children are well cared for
    - Children have physical freedom
    - Children have the chance to explore their surroundings

- African babies more advanced than US and European infants in sitting, walking, running (gross motor)
  - Asian babies develop these skills more slowly
  - Can be way infants are handled (handling routines)
  - Some cultures discourage early motor development
    - Ache from Paraguay, pull babies on lap when attempt to crawl away, closely supervise to protect them from hazards of nomadic life
      - By 8 – 10 years, climb tall trees and play in ways that enhance their motor skills

- African and West Indian cultures have handling routines, such as bouncing and stepping exercise, to strengthen babies muscles.
- Asian ethnic differences in temperament and child rearing processes.
• Infant Mortality
• Immunization for Better Health
Infant Mortality

• Worldwide, in 2000, 8 million infants died before their first birthday
  – 1 in 20 born alive-died before 1st birthday
  – ½ occurred during neonatal period
  – ¾ during 1st week of life
  – 2/3 from Africa and Southeast Asia

• Primary cause of neonatal death is preterm delivery, sepsis or pneumonia, asphyxiation at birth
  – Many are preventable deaths
  – Result of poverty, poor maternal health and nutrition, infection, and poor medical care
Infant Mortality (cont)

• US infant mortality rate fallen almost every year since 1950
  – Attributable largely to prevention of SIDS and effective treatment for RDS (respiratory distress syndrome)
  – Birth defects are leading cause of infant deaths in US**
  – Disorders related to prematurity or LBW, SIDS, maternal complications of pregnancy and unintentional injuries are next leading causes of infant deaths in US

• Due to prevalence of LBW, US infant mortality rates remain higher than other industrialized countries
  – Nearly half of all US infant deaths were the 0.8% of infants whose birth weight was less than 1,000 grams (2 pounds)
  – There has been improvement in US mortality rates since 1990, is largely attributable to the prevention of SIDS.
Infant Mortality Rate in Industrialized Countries

- Hong Kong: 2.3
- Singapore: 2.7
- Japan: 3.0
- Finland: 3.1
- Sweden: 3.1
- Norway: 3.4
- Czech Republic: 3.9
- Spain: 3.9
- Greece: 4.0
- Portugal: 4.1
- Germany: 4.2
- Switzerland: 4.3
- France: 4.4
- Denmark: 4.4
- Austria: 4.5
- Italy: 4.6
- Australia: 4.8
- Netherlands: 4.8
- Israel: 4.9
- New Zealand: 4.9
- Korea: 5.0
- Ireland: 5.1
- United Kingdom: 5.3
- Cuba: 6.3
- United States: 6.9

*Provisional data
2003: the US has the highest infant mortality rate than the other 25 nations due to its diverse population, health disparities for disadvantaged groups, and its high percentage of LBW in infants. Especially among its African American babies.
Infant Mortality (cont.)

Racial/Ethnic Disparities in Infant Mortality

- All races and ethnic groups have decreased in infant mortality rates
- Disparities remain between races
  - Black babies 2.5 X more likely to die in first year
    - Attributed to LBW and SIDS
  - American Indian/Alaskan Natives 1.5 X more likely to die in first year
    - Attributed to SIDS and FAS
- Intragroup disparities exist
  - Within Hispanics, Puerto Rican infants twice as likely to die as Cuban infants, etc.

- There has been some decline but non-Hispanic blacks continue to have the highest infant mortality rates. This disparity largely reflects the greater prevalence of low birth weight and SIDs among African Americans.
- Behavioral factors may also play a part. Obesity, smoking, and alcohol consumption contribute to poor outcomes of pregnancy. African Americans have the highest obesity rates, American Indians and Alaska Natives tend to be heavy smokers and drinkers.
Infant Mortality (cont.)

Sudden Infant Death Syndrome (SIDS)
• “Crib Death”, sudden death of infant under one year, cause of death unexplained
• Leading cause of postneonatal infant death in US**
• Peaks at 2 – 3 months
• Most common among African American and American Indian/Alaska Native babies, boy babies, premature, young mothers, late or no prenatal care
• Probably result of combination of factors
  – Underlying biological defect causing vulnerability
  – Prenatal exposure to smoke
  – Possibly neural network responsible for arousal from sleep
  – Possible disturbance in the brain mechanism that regulates breathing
• Six gene mutations affecting the heart are linked to SIDS
  – Arrhythmia
• Defects in brain stem (regulates breathing, heartbeat, body temperature, and arousal)
• Defects in the brain’s ability to use serotonin
  – Prevents babies who are sleeping face down or on sides from waking or turning their heads when breathing stale air containing carbon dioxide trapped under blankets
• SIDS decreased in US by 53% from 1992 to 2001 by sleeping on the back
• Recommendations: don’t sleep on soft surfaces (pillows, quilts, sheepskin)
• SIDS increased 20 times when sleeping in adult beds, sofas, chairs
• Use of pacifiers lowers risk of SIDS
• Co-sleeping controversial
Sharing a bed with a mother is common practice in some cultures. By snuggling up together, mother and baby stay orientated toward each others subtle body signals, and mothers can respond more quickly and easily to an infant’s first whimpers of hunger. However under certain conditions, bed sharing can increase the risk of SID.- more than 1 person, infant between 8-11 weeks, bed sharer has been smoking, drinking, or is overtired. However Japan has common practice of bed sharing yet have the lowest rate of SIDS, perhaps because they sleep on then mats on the floor.
Recommendations to Prevent SIDS

Table 6-4  Physicians’ Recommendations to Prevent SIDS

1. Place infant to sleep on the back (not tummy or side).
2. Use a firm sleep surface.
3. Keep soft objects and loose bedding out of the crib.
4. Do not smoke during pregnancy, and avoid exposing infant to second-hand smoke.
5. Let the infant sleep in his or her own bed, near the mother.
6. Consider offering a pacifier at nap time and bedtime during the 1st year of life. For breast-fed infants, delay introducing the pacifier until 1 month, so that breast-feeding is firmly established.
7. Avoid overheating and overbundling. Infant should be clothed lightly, and room temperature should be comfortable for an adult.
8. Avoid commercial devices that claim to reduce the risk of SIDS. These have not been tested for efficacy or safety.
9. Do not use home monitors to reduce the risk of SIDS; there is no evidence for their effectiveness.
10. Encourage tummy time when the infant is awake and someone is watching.

Infant Mortality (cont.)

Injuries

- Unintentional injuries are 5th leading cause of death in infancy
- Black infants 2.5 times more likely to die of injuries as white infants
- Black infants more than 3 times more likely to be victims of homicide
- Falls are number one cause of injury: 60%
- Ingesting harmful substances VERY distant second cause: 7%
- Burns third cause: 6%
Immunization for Better Health

- 2 million child deaths were prevented by vaccinations in 2003 worldwide
- 2.5 million vaccine-preventable deaths under 5 years old in 2003
  - In US: 95% improvement in vaccine-preventable infectious diseases
- DPT and MMR concern for some parents for autism
  - No research has substantiated that fear
- Too many vaccines at one time is concern for some

- Some parents hesitate to give the DPT & MMR
- Children receive 11 vaccines and as many as 20 shots by age 2.
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
<th>Birth</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>15 months</th>
<th>18 months</th>
<th>19–23 years</th>
<th>2–3 years</th>
<th>4–6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
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<td>Diphtheria, Tetanus, Pertussis</td>
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<td>Haemophilus influenza type b</td>
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<td>Influenza (Yearly)</td>
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<td>Measles, Mumps, Rubella</td>
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<td>Hepatitis A</td>
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<td>HepA (2 doses)</td>
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This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2006, for children aged 0–6 years. Additional information is available at [http://www.cdc.gov/nip/recs/child-schedule.htm](http://www.cdc.gov/nip/recs/child-schedule.htm). Any dose not administered at the recommended age should be administered at any subsequent visit, when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective Advisory Committee on Immunization Practices statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at [http://www.vaers.hhs.gov](http://www.vaers.hhs.gov) or by telephone, 800-822-7967.
Maltreatment: Abuse & Neglect

- Facts & Figures
- Contributing Factors: An Ecological View
- Helping Families in Trouble
- Long-Term Effects
Maltreatment: Facts & Figures

- Maltreatment:
  - Physical abuse (bodily injury: punching, beating, kicking, burning)
  - Neglect: don’t meet basic needs including supervision
  - Sexual abuse
  - Emotional maltreatment: rejection, terrorization, isolation, exploitation, degradation, ridicule, failure to provide emotional support, love, affection
- 872,000 reported cases in 2004 (actual number considerably higher)
- Infant boys more frequent victims
- 1/3 of child fatalities attributed to neglect
- Graph: 81% are children younger than 4 and 45% younger than 1.

Deaths from maltreatment by age, 2004.
Shaken Baby Syndrome

Never, never, never shake your baby!

Shaken Baby Syndrome is the medical term used to describe the violent shaking and retort sustained from shaking. These injuries can include:

- Brain swelling and damage, subdural hemorrhage, mental retardation, and death. Shaken baby syndrome can occur when children are violently shaken as part of a pattern of abuse or neglect because an adult has mentally succumbed to the frustration of responding to a crying baby. Because babies have large heads and underdeveloped bones, the whiplash action created by shaking causes the brain to bounce around in the skull, often breaking delicate vessels that connect the brain to the skull. This can result in brain edema, subdural, subarachnoid, or death. If you feel like you are losing control and have the urge to shake your baby, STOP, place your baby in a safe position, and walk away. Call someone with authority and take a few deep breathes. Do anything to calm yourself down. Be the best for your baby's sake.

Special care must be taken when handling children in the infant to 2-year age range and remember,

Children must never be shaken for any reason.

Babies are fragile.

Please don't shake a child.

Learn about Shaken Baby Syndrome.

www.preventchildabuse.com
Scenario is too common. Baby 6 weeks- 4 months old brought to ER symptoms ranging from lethargy, irritability, breathing problems, tremors, or vomiting, pale blue skin to seizures. No visible sign of injury….claiming th child fell. But the CT or MRI find hemorrhaging of the brain or retina from the baby being violently shaken, dropped, or thrown. This baby is named Christian. He is the first documented case of SBS. Four months old taken to Arnold Palmer Hospital in Orlando Florida. His dad had, not only shaken him, he had twisted his arms and legs, he had spiral fractures, he had also broken his ribs. These had gone unnoticed until brought in for SBS. Grandmother and mother took pictures of Christian hoping to create awareness. Injuries included, blind, thought process destroyed, could not eat by mouth was feed through a tube, brain stem twisted so his hypothalamus was not working and did not control his body temperature. Cerebral palsy, heart failure, osteoporosis, epilepsy, and took 30 meds a day. Died at age 7.
No baby has ever died from crying, but too many have died from being shaken.

Never Shake A Baby Arizona
www.nbaz.org  www.pcaaz.org

Never Shake A Baby Arizona is a project of Present Child Abuse, Inc. Sponsored by a grant from the Child Abuse Prevention License Plate Fund.
Contributing Factors: An Ecological View

Characteristics of Abusive and Neglectful Parents and Families

- 80% of maltreatment are child’s parents, usually mother
  - 7% are other relatives
  - 4% unmarried partners of parents
- Maltreatment by parents is symptom of extreme disturbance in child rearing
  - Aggravated by other family problems
    - Poverty
    - Lack of education
    - Alcoholism
    - Depression
    - Antisocial behavior
- Parents who abuse their children tend to have marital problems, fight physically, have disorganized households, more stressful events than other families
- Abuse and neglect sometimes occur in same families
- Sexual abuse often occurs with physical abuse, emotional maltreatment, substance abuse, and family violence

- As in Bronfenbrenner’s bioecological theory, abuse and neglect reflect the interplay of multiple layers of contributing factors involving the family, the community, and the larger society.
Contributing Factors: An Ecological View

Community Characteristics and Cultural Values

- High-abuse neighborhoods have higher criminal activity, dreary community programs
- Low-abuse neighborhoods can be poor but decent, robust social support networks, well-known community services, strong political leadership
- Two cultural factors associated with child abuse
  - Societal violence
  - Physical punishment of children
    - 90% of American parents of preschoolers and 50% of school-age parents report using physical punishment at home

- Societal: in countries where violent crime is infrequent and children are rarely spanked, such as Japan, China, and Tahiti, child abuse is rare. In the United States, homicide, domestic violence, and rape are common, and many states still permit corporal punishment in school….child abuse more common.
Helping Families in Trouble

- Services for children who have been abused and their parents
  - Shelters
  - Education in parenting skills
  - Therapy
- Parents Anonymous offer free, confidential support groups
- Foster care: 19% of victims of maltreatment were placed in foster homes
  - Often unstable, further alienates the child from the family and can be another abusive situation
- Kinship care (31%)- under care of other family members.
- Foster children: 28% reenter foster care following reunification, more likely to become homeless, more likely to be involved in criminal activity, more likely to become teen mother
- Locally: Leaps and Bounds and Sierra Vista

Leaps and Bounds is an outpatient behavior health program focused on serving infants, toddlers and preschool children, ages 0 through 5 years and their families. Consultation services are provided at pre-schools and family day care settings. The model for the Leaps and Bounds program is relationships based. Focusing on the relationship between parent/guardian and their child has proven to have long-term positive outcomes, not only for the children but for the parents as well.
Long-Term Effects of Maltreatment

- Effects dependent on child’s age and developmental status
- Consequences of maltreatment depends on type, frequency, duration, and severity
- Consequences of abuse depends on relationship between victim and perpetrator
- Consequences of abuse depends on child’s personal characteristics
- Maltreated children often grow up to victimize their own children
  - 30%
- Long-term consequences
  - Poor physical, mental, emotional health
  - Impaired brain development
  - Cognitive, language, academic difficulties
  - Problems with attachment and social relationships
  - Memory problems
  - Teens:
    - Poor academic achievement, delinquency, pregnancy, alcohol and drug use, suicide
Long-Term Effects of Maltreatment (cont)

• Long-term consequences of sexually abused children:
  – Disturbed behavior
  – Low self-esteem
  – Depression
  – Anxiety
  – Unhappy
  – May become sexually active at early age

• Adults who were sexually abused as children:
  – Anxious, depressed, angry, hostile, mistrusting, feel isolated and stigmatized, sexually maladjusted, abuse alcohol or drugs
Long-Term Effects of Maltreatment (cont)

• Why do some abused children grow up antisocial or abusive?
  – Genes
  – Maternal rejection and abuse early in life
    • Brains produce less serotonin
    • Low levels of serotonin associated with anxiety, depression, and impulsive aggression

• Many maltreated children show remarkable resilience

• Protective factors for resilience:
  – Optimism, self-esteem, intelligence, creativity, humor, independence, social support of a caring adult
Children Learn What They Live
By Dorothy Law Nolte, Ph.D.

If children live with criticism, they learn to condemn.
If children live with hostility, they learn to fight.
If children live with fear, they learn to be apprehensive.
If children live with pity, they learn to feel sorry for themselves.
If children live with ridicule, they learn to feel shy.
If children live with jealousy, they learn to feel envy.
If children live with shame, they learn to feel guilty.
If children live with encouragement, they learn confidence.
If children live with tolerance, they learn patience.
If children live with praise, they learn appreciation.
If children live with acceptance, they learn to love.
If children live with approval, they learn to like themselves.
If children live with recognition, they learn it is good to have a goal.
If children live with sharing, they learn generosity.
If children live with honesty, they learn truthfulness.
If children live with fairness, they learn justice.
If children live with kindness and consideration, they learn respect.
If children live with security, they learn to have faith in themselves and in those about them.
If children live with friendliness, they learn the world is a nice place in which to live.