

THE FACTS ABOUT BABY'S BRAIN

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Pathways to
Permanence 2

Parenting
Children
WHO HAVE
Experienced
Trauma
AND LOSS

Session 5
Creating
Positive
Attachments
Part 2

Parent's
Toolbox

- Every baby is born with about 100 billion neurons.
- By the end of the baby's eight month, a baby can have as many as 1,000 trillion synapses but by age 10 years, a child has about ½ as many; 500 trillion synapses.
- A baby's brain is experience dependent; not only does environment affect how large and how fast a baby's brain grows, but it helps direct the actual wiring of the brain's circuitry (the brain is mutable, such that its structural organization reflects the history of the organism, Luu and Tucker, 1996).
- The baby's brain develops, in order, from least complex – the brain stem, which controls basic involuntary life functions, like heart rate and body temperature – to the most complex – the top layer of the brain, called the cortex, which controls reasoning and abstract thought processes.
- The primary caregiver acts as an external psychobiological regulator of the “experience-dependent” growth of the infant's nervous system (Schore, 1994); the social environment can positively or negatively modulate the developing brain.
- Leaving the infant in chronic high-arousal states, with increased heart rate, increased respiratory rate, etc., negatively impacts the infants socio-emotional learning during critical periods of right brain development (Schore 1994).
- By age 3, about 90% of the child's core brain structures have been formed.
- Infants who experience trauma, abuse or neglect have elevated levels of cortisol, a stress hormone, in the brain. When increased levels of cortisol wash over the brain, it can cause regions of the brain that regulate emotional response and attachment to be 20–30% smaller than normal (Perry, 1999).
- The infant's immature brain is in a state of rapid development, and is therefore exquisitely vulnerable to early adverse experiences, including adverse social-emotional experiences.
- Maladaptive infant mental health is highly correlated with maladaptive adult mental health (attachment involves limbic imprinting); infant post traumatic stress disorder of hyper arousal and dissociation sets the template for future disturbances of autonomic arousal (Prins, Kaloupek, & Keane, 1995).

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