

# Birth to Five Informational Packet

Questions: Concerns: Feedback

Jude Rose, Early Education Specialist

jude@casaofsantacruz.org



CASA OF SANTA CRUZ COUNTY

813 Freedom Boulevard- Watsonville, CA 95076 Phone 831.761.2956 - Fax 831.761.2913 www.casaofsantacruz.org



#### **Birth to Five Summary**

The incredible amount of brain development during the earliest stages of life creates an interest for CASA of Santa Cruz to assist with ensuring these vulnerable children get off to the best start as possible. The focus will always be the child, like it is for children of all ages. **Birth to Five Advocates** will support the caregiver in being the best parent they can be and this will be individualized for each caregiver and child.

The Advocate will be intentionally trained not to focus on building a deep relationship with the child or become a lifelong friend but rather act as a caring adult who provides the caregivers and professionals involved an informed picture of the child's well-being. Our current goal is to train Advocates to effectively support the important connection (attachment) between the primary caregiver(s) and the child. Note: this is a new approach for CASA of Santa Cruz as of January 2016.

The Advocate will take note of the child and caregiver in the home and in multiple settings, for the purpose of gathering information and providing this data back to the hard-working professionals involved as well as to Court. Gathered information is not exclusive to: connection to attachment figures, adaptation, developmental/health growth, mental health and home/community environment. An Advocate will offer information based upon the child's chronological age and developmental age, to encourage timely services are accessed and permanency is achieved.

#### Birth to Three

As we know, children birth to three are at an extremely vulnerable age, whether in a safe environment or not, whether they show physical signs of trauma or not. This vulnerability is due to a complex system of brain growth that is rapidly taking place faster than at any other stage of human development. This is the most crucial time for consistent, caring, and loving responses from the adults in their life.

Birth to Three Advocates will <u>not</u> take the child in the community without the caregiver. The Advocate will be trained regarding attachment, separations, trauma and how they relate to a child's development. These Advocates can help ensure that a responsive environment is being provided that allows for safety, security and well-being. Once a child turns three years old, the Advocates and their Supervisors will discuss their visits with the caregiver to ensure the child's needs are met and that safety precautions are understood prior to leaving the home without the caregiver if that is determined to be a benefit for the child.

An Advocate for a child birth to three can be involved at a frequency and duration that is in the best interest of the child and agreed upon by the caregiver. An Advocate will be involved to gather information for the Court and Social Work team; and often, at the request of the caregivers, an Advocate can be engaged with the caregivers meeting regularly and providing individual support that helps the child.

### What Children's Brains Tell Us About Trauma: Invest Early

This column was adapted from oral remarks given by the author, Wendy Smith, an associate dean at the University of Southern California's School of Social Work, during a Congressional roundtable sponsored by the National Foster Youth Institute and the Congressional Caucus on Foster Youth in February.

**Advocates, professionals, legislators**, families, caregivers and all those who interact with the child welfare system grapple with the question of when and how resources should be invested at local, state, and national levels, to most effectively help children and families who may be touched by the foster care system.

If we are serious about helping children, we must ask ourselves with greater urgency: At what point should we begin to pay attention to families who are at risk?

The vital importance of the early years of children's lives in setting the stage for their futures cannot be overstated.

To understand why foster care, as critical as it is in some instances, is a less effective intervention than assistance in advance of removing children from their homes, it will help to know something about stress, trauma and brain development. Some of what I will describe we know and have known for a long time, and some we didn't really know until quite recently, but all has important implications for how we approach child welfare decisions and policies.

Some 415,000 children are in foster care in the U.S. on any given day. As a nation, we know and believe that the safety of children who are determined to be at imminent risk of neglect or physical, sexual or emotional abuse, and for whom remaining in their homes poses immediate danger must be protected. Before that moment when a child is taken from her home and family, a great deal has already happened to all of the people in the family. And a great deal happens afterward as well.

In the past 10 years, there has been a veritable explosion of research in brain development, trauma and its long-term effects, and the importance of early attachments.

This new knowledge is crucial to the strengthening of families and the protection of children's development and well-being. I want to highlight each of these, but first, let me share some sobering statistics:

Children in foster care are more likely than other children to exhibit high levels of behavioral and emotional problems. They are more likely to be suspended or expelled from school, to have received mental health services, and to have a limiting physical, learning or mental health condition. In one study, 60 percent of children aged two months to two years in foster care were at high risk for a developmental delay.

Things do not improve for youth who age out of care (those who graduate from foster care without being reunited with their families or adopted): While many are highly resilient, too many have fared poorly. In one study, 38 percent had emotional problems, half had used illegal drugs and a quarter were involved with the criminal justice system.

Only 48 percent had graduated high school at the time of discharge, compared with 81 percent of their peers. Only 13 percent of foster youth enroll in college (compared with 78 percent of high-income peers, and 55 percent of low-income peers), and only 2-4 percent of foster youth graduate (compared with 41 percent in the U.S.). From 41 to 60 percent of those who aged out were unemployed, and up to half had received public assistance.

Most critically, *nearly 40 percent of foster youth are homeless within 18 months of discharge from foster care.* As adults, those who spent long periods in multiple foster care homes were more likely to be unemployed, homeless, incarcerated, become early parents, to be dependent on financial assistance and to have chronic health conditions.

These dismal outcomes for children in our care shame us all. Why should these outcomes be so dire, and the costs to young lives, and to society, so great?

Let us consider some of what recent research on brain development, attachment, and the effects of toxic stress and trauma tells us.

Early experiences profoundly affect the development of brain architecture, the foundation for future learning, behavior and health. The architecture of the brain is constructed over time, beginning before birth and continuing into adulthood.

It becomes increasingly complex over time, with brain cells (or neurons) proliferating most rapidly during the first few years, and another period of important changes during adolescence. The majority of brain development occurs in *the first five years*; however, throughout life, new connections continue to occur, and connections that are not used are pruned away.

Brain development is experience dependent; our genes interact with our experiences to shape our brains. Genes provide a kind of blueprint of circuits, but experience and use determine whether certain capabilities or potentials will emerge and be firmly established or die away. Experiences of both positive and negative kinds have this shaping potential.

So, for example, exposure to certain types of stimuli–intellectual, athletic, musical–might set the stage for intellectual or athletic potentials to be realized—which is why we often see succeeding generations of exceptionally talented individuals in one family.

In the same way, for infants who are rarely spoken or sung to, language development will be negatively impacted. The occurrence of abuse or neglect during the first three years can produce changes to important parts of the brain, sometimes leading to learning difficulties, attention deficits, problems in self-regulation and self-control.

Environment and relationships play an important role: Interaction with parents or other important adults *is* the medium or vehicle through which the infant or young child experiences the world and him or herself.

Responsive caregiving is the key ingredient that drives optimal brain development. When caregiver responses are unreliable, inappropriate or absent, the child's brain architecture cannot develop as expected, and this can lead to disparities in learning or behavior.

When parents' mental health is compromised, when the need to find shelter or addiction to drugs precludes a parent from attending to a child's needs or distress, the child is not soothed, and therefore cannot fully develop the capacity for self-soothing or self-regulation. The lack of ability to self-regulate can set the stage for all kinds of problems, including the use of substances to self-soothe.

Our brains have neurobiological plasticity, giving us the capacity to change throughout life in response to new opportunities, both positive and negative. The message here is that what happens <u>before</u>, <u>during</u>, <u>and after</u> engagement with the child welfare system can make profound differences to the ongoing development of children and youth.

Stress, toxic stress and trauma frequently, if not always, play a part in the lives of children and families who come to the attention of child welfare systems. Stress results when demands—either physical or psychological—exceed our coping resources. It is a normal part of human existence, and an effective stress response is necessary in the face of daily challenges. It becomes a problem when stress is excessive or when it is not followed by a period of rest and recovery.

There are three basic categories of stress: positive (brief increases in heart rate and mild elevation of stress hormones); tolerable (serious, temporary stress responses, buffered by supportive relationships); and toxic

(prolonged activation of stress response systems in the absence of protective relationships).

An example of toxic stress might be a homeless teen single mother with a colicky infant. These compound stressors over days or weeks, in the absence of a supportive other, might overwhelm the coping capacities of any young person; imagine if layered beneath the current difficult situation are experiences of childhood trauma.

The effects of early childhood abuse on the stress response system have been shown to continue into later life. Research suggests that many of the leading health and social problems have common origins in the enduring consequences of abuse and related negative experiences during childhood.

The ACE (adverse childhood experiences) study revealed the strong connections between trauma in childhood, cognitive and social problems, adoption of health risk behaviors, disease, disability and social problems, and, in fact, premature death.

Attachment plays an important role: The parent or caregiver mediates stress for the child. On a very basic level, think of an infant who is frightened and dysregulated by a loud noise. Ideally, a responsive adult picks up the child, providing reassuring contact and soothing, and the infant regains equilibrium.

Repeated cycles of equilibrium, disturbance and timely repair are what help us develop the ability to tolerate stress. If there is no responsive caregiver to act as a psychobiological regulator, the stress response remains in high gear, and the infant does not internalize the capacity to self-soothe. These are often the children who can't manage themselves on the school yard, seeing threats where there aren't any, getting into fights, or breaking down when frustrated.

Trauma is a particular version of toxic stress: high-risk events or situations in which one's physical or psychological integrity is threatened (school shooting, gang violence, natural disaster, sudden or violent loss of loved one, physical or sexual assault). The child feels intense fear, helplessness and horror. Serious incidents of child abuse or neglect can be composed of one or more trauma events. In situations of abuse or severe neglect, the adult who is the abuser or psychologically unavailable cannot be turned to as a source of comfort, soothing and recovery.

Trauma can be acute or chronic. Chronic trauma is more likely to lead to negative developmental outcomes. Reactions to traumatic events vary based on a child's coping responses and on the relationship between the child and perpetrator. The neurobiological response to trauma results in increased adrenaline levels and increased cortisol, the stress hormone.

Chronic abuse leads to overdevelopment of the stress response system (and reduced levels of pleasurable hormones), preparing a child to cope with negative environments, rather than having the expectations of a good experience with others. The child's attention is focused on detecting threats. In the classroom, a child might experience a teacher's criticism or correction as a threat to be defended against, or be unable to take in the lesson because he or she is caught up in worrying about a possible negative reaction from the teacher or other children. High levels of stress hormones also affect memory, and can interfere with learning in this way as well.

Foster children with histories of chronic abuse may have found themselves, in one placement after another, unable to make use of the best efforts of concerned caregivers because they have learned at the biological level to remain on alert.

What does all of this have to do with foster care? How can we best make use of what we now know about stress, trauma and attachment?

I would suggest that we can do much more to shore up families before they come to the point where children are in danger and must be removed, and that by doing so, we can substantially improve the lives of children and families at the same time that we decrease the injuries to them and the ultimate costs to society of our having to take over the role of parent for so many children.

We now know, as we didn't before, that experience and environment have profound effects, not only on social and psychological behavior, but at the biological level. Now we know that improving the quality of experience and family environments early in a child's life will positively affect every domain of functioning.

We all know, from having been children, or having our own, how frightening it might be when a parent is impaired or absent, or if you couldn't go home because the rent hadn't been paid. You might cling all the more tightly to your parent.

Many of the families of children who come into care are struggling with poverty, homelessness, health or mental health problems, addiction, or incarceration. The entry into care, while a lifesaver for some families or children, is for most a traumatic disruption of primary relationships, bringing the loss of parental figures, siblings, home, school—in short, all that is familiar or predictable.

So, layered atop the underlying problems, which may or may not be addressed, is a series of additional losses, stressors and problems. Families at risk can benefit from services that address these problems <u>before</u> children are in danger.

Our investments have typically been greater at the back end—trying to ensure that foster care is as good as it can be—and that is important, of course. But even if/when foster care is at its best, strengthening that family in advance of the extreme step of removal of a child sets the stage for more optimal development of the brain, and of the person.

When a child does not have to be occupied with managing or recovering from the trauma of maltreatment or removal, that child is much more likely to be healthy, to be able to learn and to grow into a successful member of society.



Published on Urban Child Institute (<a href="http://www.urbanchildinstitute.org">http://www.urbanchildinstitute.org</a>)

Home > Why 0-3? > Baby's Brain

## Baby's Brain Begins Now: Conception to Age 3

The fact that children are affected by their surroundings is too obvious to bear repeating. Child development specialists have produced decades of research showing that the environment of a child's earliest years can have effects that last a lifetime.

Thanks to recent advances in technology, we have a clearer understanding of how these effects are related to early brain development. Neuroscientists can now identify patterns in brain activity that appear to be associated with some types of negative early experiences.<sup>1</sup>

But the long-term effects of early stress, poverty, neglect and maltreatment were well documented and virtually uncontested years before we could "see" them with brain scanning tools. So why should we need an understanding of brain development to show us how important children's earliest experiences are for their well-being? Isn't neuroscience just telling us what we already know?

Actually, there are several reasons why we should pay attention to the evidence provided by neuroscience. For instance, it may help us learn exactly how experiences affect children. This knowledge can aid our efforts to help children who are at risk and to undo, where possible, the effects of early adversity. Additionally, neuroscientists may help us learn when experiences affect children. If there are specific periods of vulnerability to certain types of experiences, then understanding these patterns will improve our attempts at intervention.

So far, neuroscience has not found conclusive answers to these questions. However, dramatic advances continue to be made in the field, and brain research continues to enhance education and intervention efforts. Accordingly, we have expanded this year's Brain Development chapter to include additional information reflecting the latest scientific research.

We begin with a thumbnail sketch of brain anatomy, followed by a closer look at neurons and synapses, the brain's communication specialists. We then discuss some unique features of early brain development and show how they make the first three years of life an especially critical period. Finally, we present an outline of brain development from conception to three, linking developmental events to the cognitive and behavioral changes associated with them.

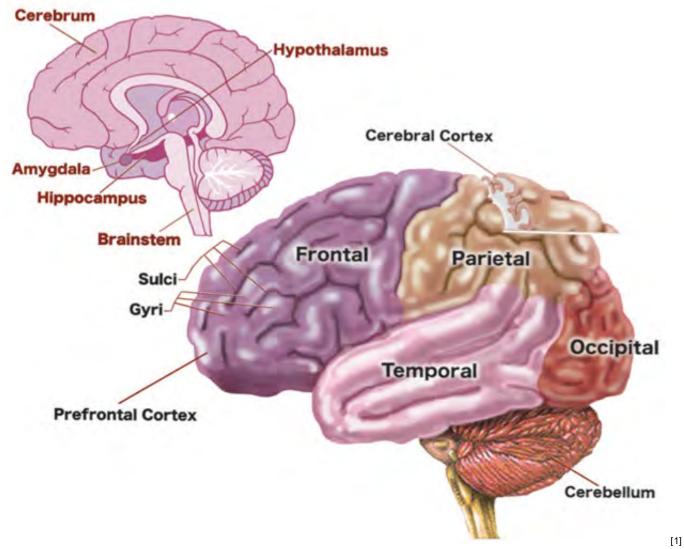
## An Overview of Brain Anatomy

The easiest way to get to know the brain is to learn the main structures of the adult brain and how they relate to its function (Figure 1). It should be kept in mind that the relationship between brain structure and function is never simple. Although we often hear claims about the "language area" or "emotion center" of the brain, statements like these are simplifications; in reality, even the simplest mental activities involve multiple brain regions.

The brain can be divided into three major parts. The brain stem, shaped like a widening stalk, connects the spinal cord to the upper brain. It controls reflexes and involuntary processes like breathing and heart rate. Behind the brain stem and below the upper brain is the cerebellum, which is involved in balance and coordination.

The cerebrum, the largest part of the brain, sits above the brain stem and cerebellum. While each of the brain's structures plays an essential role, the cerebrum is the area most involved in higher processes like memory and learning. The cerebrum's outer surface is called the cerebral cortex. Although less than one-fourth of an inch thick (in adulthood), it is where the brain's most advanced activities – such as planning and decision-making – take place.

The folds of the cerebral cortex, which give the brain its wrinkled appearance, are an important feature of the brain's structure. Appearing during prenatal development, these folds increase the surface area of the cerebral cortex and allow more of it to be "packed" inside the skull. The resulting ridges and grooves form a pattern that is essentially the same from person to person. The ridges are called gyri (singular=gyrus); the grooves are called sulci (singular=sulcus).



The Human Brain Figure 1

Source: Adapted from www.educarer.org [2], 2006.

Scientists use gyri and sulci to divide the cerebral cortex into smaller units called lobes. Each hemisphere has four lobes. The occipital lobes, at the back of the brain, control vision. The parietal lobes are associated with bodily sensations like heat, cold, pressure, and pain. The temporal lobes are involved with hearing, language skills, and social understanding, including perception of other people's eyes and faces. The frontal lobes are associated with memory, abstract thinking, planning, and impulse control. The forward-most section of the frontal lobes is a distinct area referred to as the prefrontal cortex. This is the last brain area to mature, undergoing important developmental changes as late as adolescence. The prefrontal cortex is the location of our most advanced cognitive functions, including attention, motivation, and goal-directed behavior.  $\frac{2}{3}$ ,  $\frac{3}{4}$ 

Although our advanced cognitive abilities are dependent on the cerebral cortex, it is not the only part of the brain relevant to child development. The limbic system, located in the inner brain beneath the cortex, is a collection of small structures involved in more instinctive behaviors like emotional reactions, stress responses, and reward-seeking behaviors. The hippocampus is involved in memory formation and spatial learning. The hypothalamus is the control center for one of the body's key stress systems, regulating the release of cortisol and other stress hormones. The amygdala evaluates threats and triggers the body's stress

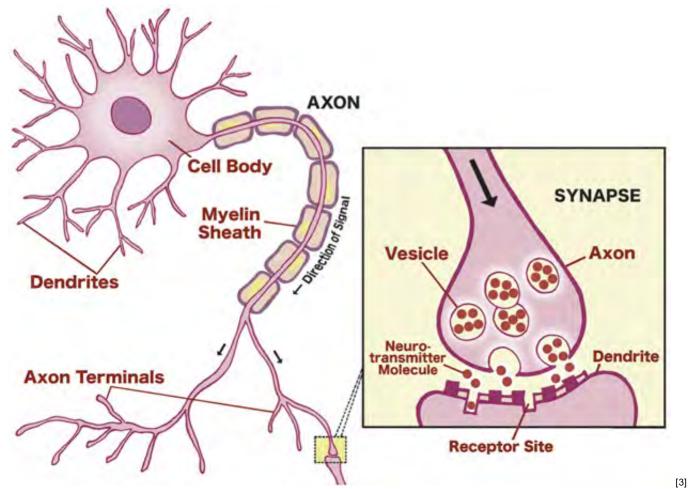
## Neurons and synapses form the wiring of the brain.

The brain processes information by forming networks of specialized nerve cells, called neurons, which communicate with one another using electrical and chemical signals (Figure 2). These messages are the physical basis of learning and memory. A neuron consists of a cell body and the branch-like structures that extend from it. These include multiple dendrites and an axon, which may have numerous axon terminals. The cell body is the neuron's control center; among other duties, it stores DNA and generates energy used by the cell. The dendrites receive incoming signals from other neurons, and the axon and its terminal branches relay outgoing signals to other neurons. Axons are sometimes coated with myelin, a fatty substance that insulates the axon and increases the efficiency of communication.

Messages are passed between neurons at connections called synapses. The neurons do not actually touch, however. There is a microscopic gap – the synaptic cleft – between the axon terminal of one neuron and the dendrite of another. Communication between neurons involves complex electrical and chemical processes, but its basics can be outlined simply:

When a neuron (let's call it Neuron A) receives a chemical signal from another neuron, Neuron A becomes electrically charged in relation to the surrounding fluid outside its membrane. This charge travels down its axon, away from the cell body, until it reaches the axon's end. Waiting here inside the axon terminals are a group of storage sites, called vesicles, that contain chemicals manufactured and delivered by the cell body. When the electrical charge arrives at the axon terminal, it causes these vesicles to fuse with the terminal's cell membrane, spilling their contents out of the cell and into the synaptic cleft.

As Neuron A returns to its resting state, the molecules it spilled – called neurotransmitters – make their way across the synaptic cleft to Neuron B's dendrite. When they arrive, they bind with receptor sites in the dendrite's membrane. Each time a neurotransmitter molecule from Neuron A binds with a receptor on Neuron B, ions from the fluid surrounding the cells enter Neuron B through the unlocked receptor. As a result, Neuron B develops an electrical charge, the charge travels down its axon, and the process continues.<sup>2</sup>



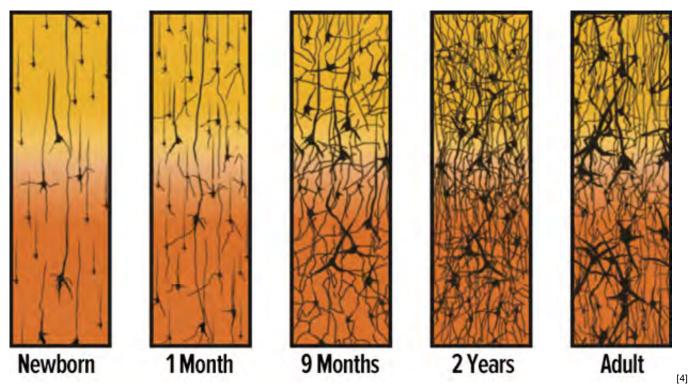
Communication Between Neurons Figure 2

Source: Adapted from www.educarer.org [2], 2006.

# In the first three years, a child's brain has up to twice as many synapses as it will have in adulthood.

Now that we're a little more familiar with the fundamentals of the brain, let's take a look at brain development in children. Between conception and age three, a child's brain undergoes an impressive amount of change. At birth, it already has about all of the neurons it will ever have. It doubles in size in the first year, and by age three it has reached 80 percent of its adult volume. 8,9,10

Even more importantly, synapses are formed at a faster rate during these years than at any other time. In fact, the brain creates many more of them than it needs: at age two or three, the brain has up to twice as many synapses as it will have in adulthood (Figure 3). These surplus connections are gradually eliminated throughout childhood and adolescence, a process sometimes referred to as blooming and pruning. 11



Synapse Density Over Time Figure 3

Source: Corel, JL. The postnatal development of the human cerebral cortex. Cambridge, MA: Harvard University Press; 1975.

# The organization of a child's brain is affected by early experiences.

Why would the brain create more synapses than it needs, only to discard the extras? The answer lies in the interplay of genetic and environmental factors in brain development.

The early stages of development are strongly affected by genetic factors; for example, genes direct newly formed neurons to their correct locations in the brain and play a role in how they interact. <sup>12,13</sup> However, although they arrange the basic wiring of the brain, genes do not design the brain completely. <sup>14,15</sup>

Instead, genes allow the brain to fine-tune itself according to the input it receives from the environment. A child's senses report to the brain about her environment and experiences, and this input stimulates neural activity. Speech sounds, for example, stimulate activity in language-related brain regions. If the amount of input increases (if more speech is heard) synapses between neurons in that area will be activated more often.

Repeated use strengthens a synapse. Synapses that are rarely used remain weak and are more likely to be eliminated in the pruning process. Synapse strength contributes to the connectivity and efficiency of the networks that support learning, memory, and other cognitive abilities. Therefore, a child's experiences not only determine what information enters her brain, but also influence how her brain processes information.

## Genes provide a blueprint for the brain, but a child's

## environment and experiences carry out the construction.

The excess of synapses produced by a child's brain in the first three years makes the brain especially responsive to external input. During this period, the brain can "capture" experience more efficiently than it will be able to later, when the pruning of synapses is underway. The brain's ability to shape itself – called plasticity – lets humans adapt more readily and more quickly than we could if genes alone determined our wiring. The process of blooming and pruning, far from being wasteful, is actually an efficient way for the brain to achieve optimal development.

# From Conception to Age Three: An Outline of Early Brain Development

First Trimester

The development of the brain begins in the first few weeks after conception. Most of the structural features of the brain appear during the embryonic period (about the first 8 weeks after fertilization); these structures then continue to grow and develop during the fetal period (the remainder of gestation). 19,20

The first key event of brain development is the formation of the neural tube. About two weeks after conception, the neural plate, a layer of specialized cells in the embryo, begins to slowly fold over onto itself, eventually forming a tube-shaped structure. The tube gradually closes as the edges of the plate fuse together; this process is usually complete by four weeks after conception. The neural tube continues to change, eventually becoming the brain and spinal cord  $\frac{20,21}{}$ 

About seven weeks after conception the first neurons and synapses begin to develop in the spinal cord. These early neural connections allow the fetus to make its first movements, which can be detected by ultrasound and MRI even though in most cases the mother cannot feel them. These movements, in turn, provide the brain with sensory input that spurs on its development. More coordinated movements develop over the next several weeks. 22

#### Second Trimester

Early in the second trimester, gyri and sulci begin to appear on the brain's surface; by the end of this trimester, this process is almost complete. The cerebral cortex is growing in thickness and complexity and synapse formation in this area is beginning. 20,21,23

Myelin begins to appear on the axons of some neurons during the second trimester. This process – called myelination – continues through adolescence. Myelination allows for faster processing of information: for the brain to achieve the same level of efficiency without myelination, the spinal cord would have to be three yards in diameter.  $\frac{14}{12}$ 

Third Trimester

The early weeks of the third trimester are a transitional period during which the cerebral cortex begins to assume many duties formerly carried out by the more primitive brainstem. For example, reflexes such as fetal breathing and responses to external stimuli become more regular. The cerebral cortex also supports early learning which develops around this time.  $\frac{24,25}{}$ 

Year One

The remarkable abilities of newborn babies highlight the extent of prenatal brain development. Newborns can recognize human faces, which they prefer over other objects, and can even discriminate between happy and sad expressions. At birth, a baby knows her mother's voice and may be able to recognize the sounds of stories her mother read to her while she was still in the womb.  $\frac{26,27}{}$ 

The brain continues to develop at an amazing rate throughout the first year. The cerebellum triples in size, which appears to be related to the rapid development of motor skills that occurs during this period. As the visual areas of the cortex grow, the infant's initially dim and limited sight develops into full binocular vision.  $\frac{28,29}{}$ 

At about three months, an infant's power of recognition improves dramatically; this coincides with significant growth in the hippocampus, the limbic structure related to recognition memory. Language circuits in the frontal and temporal lobes become consolidated in the first year, influenced strongly by the language an infant hears. For the first few months, a baby in an English-speaking home can distinguish between the sounds of a foreign language. She loses this ability by the end of her first year: the language she hears at home has wired her brain for English. 30,31

Year Two

This year's most dramatic changes involve the brain's language areas, which are developing more synapses and becoming more interconnected. These changes correspond to the sudden spike in children's language abilities – sometimes called the vocabulary explosion – that typically occurs during this period. Often a child's vocabulary will quadruple between his first and second birthday.

During the second year, there is a major increase in the rate of myelination, which helps the brain perform more complex tasks. Higher-order cognitive abilities like self-awareness are developing: an infant is now more aware of his own emotions and intentions. When he sees his reflection in a mirror, he now fully recognizes that it is his own. Soon he will begin using his own name as well as personal pronouns like "I" and "me." 14,28

Year Three

Synaptic density in the prefrontal cortex probably reaches its peak during the third year, up to 200 percent of its adult level. This region also continues to create and strengthen networks with other areas. As a result, complex cognitive abilities are being improved and consolidated. At this stage, for example, children are better able to use the past to interpret present events. They also have more cognitive flexibility and a better understanding of cause and effect.  $\frac{14,32}{2}$ 

# The earliest messages that the brain receives have an enormous impact.

Early brain development is the foundation of human adaptability and resilience, but these qualities come at a price. Because experiences have such a great potential to affect brain development, children are especially vulnerable to persistent negative influences during this period. On the other hand, these early years are a window of opportunity for parents, caregivers, and communities: positive early experiences have a huge effect on children's chances for achievement, success, and happiness.

### References

- 1. Lipina SJ, Colombo JA. Poverty and Brain Development During Childhood: An Approach From Cognitive Psychology and Neuroscience. Washington, DC: American Psychological Association; 2009.
- 2. Carter R, Aldridge S, Page M, Parker S. The Human Brain Book. New York, NY: DK Publishing; 2009.
- 3. Durston S, Casey BJ. What have we learned about cognitive development from neuroimaging? Neuropsychologia. 2006;44:2149-2157.
- 4. Holmboe K, Pasco Fearon RM, Csibra G, et al. Freeze-frame: a new infant inhibition task and its relation to frontal cortex tasks during infancy and early childhood. Journal of Experimental Child Psychology. 2008;100:89–114.
- 5. Morgane PJ, Galler JR, Mokler DJ. A review of systems and networks of the limbic forebrain/limbic midbrain. Progress in Neurobiology. 2005;75:143-160.
- 6. Wiedenmayer CP, Bansal R, Anderson GM, et al. Cortisol levels and hippocampus volumes in healthy preadolescent children. Biological Psychiatry. 2006;60:856-861.
- 7. Li Z, Sheng M. Some assembly required: the development of neuronal synapses. Nature Reviews. 2003;4:833-841.
- 8. Gilmore JH, Lin W, Prasatwa MW, et al. Regional gray matter growth, sexual dimorphism, and cerebral asymmetry in the neonatal brain. Journal of Neuroscience. 2007;27(6):1255-1260.
- 9. Nowakowski RS. Stable neuron numbers from cradle to grave. Proceedings of the National Academy of Sciences of the United States of America. 2006;103(33):12219-12220.
- 10. Rakic, P. No more cortical neurons for you. Science. 2006;313:928-929.
- 11. Huttenlocher P. Neural Plasticity: The Effects of the Environment on the Development of the Cerebral Cortex. Harvard University Press; 2002.
- 12. Rutter M. Nature, nurture and development: from evangelism through science towards policy and practice. Child Development. 2002;73(1):1-21.
- 13. Skaliora I. Experience-dependent plasticity in the developing brain. International Congress Series. 2002;1241:313-320.
- 14. Kagan J, Herschkowitz N, Herschkowitz E. A Young Mind in a Growing Brain. Mahwah, NJ: Lawrence Erlbaum Associates; 2005.
- Elman JL, Bates EA, Johnson MH, et al. Rethinking Innateness: A Connectionist Perspective on Development. Cambridge, MA: MIT Press; 1996.
- 16. Johnston MV, Ishida A, Ishida WN, et al. Plasticity and injury in the developing brain. Brain & Development. 2009;31:1-10.
- 17. Mangina CA, Sokolov EN. Neuronal plasticity in memory and learning abilitites:

- theoretical position and selective review. International Journal of Psychophysiology. 2006;60:203-214.
- 18. Pascual-Leone A, Amedi A, Fregni F, et al. The plastic human brain cortex. Annual Review of Neuroscience. 2005;28:377-401.
- 19. Marsch R, Gerber AJ, Peterson BS. Neuroimaging studies of normal brain development and their relevance for understanding childhood neuropsychiatric disorders. Journal of the American Academy of Child and Adolescent Psychiatry. 2008;47(11):1233-1251.
- 20. O'Rahilly R, Mueller F. Significant features in the early prenatal development of the human brain. Annals of Anatomy. 2008;190:105-118.
- 21. Lenroot RK, Giedd JN. The structural development of the human brain as measured longitudinally with magnetic resonance imaging. In Coch D, Fischer KW, Dawson G, eds. Human behavior, learning, and the developing brain: Typical development. New York, NY: Guilford Press; 2007:50-73.
- 22. Kurjak A, Pooh RK, Merce LT, et al. Structural and functional early human development assessed by three-dimensional and four-dimensional sonography. Fertility and Sterility. 2005;84(5):1285-1299.
- 23. Webb SJ, Monk CS, Nelson CA. Mechanisms of postnatal neurobiological development: implications for human development. Developmental Neuropsychology. 2001;19(2):147-171.
- 24. DiPietro JA, Caulfield LE, Costigan KA, et al. Fetal Neurobehavioral development: a tale of two cities. Developmental Psychology. 2004;40(3):445-456.
- 25. Dirix CEH, Nijhuis JG, Jongsma HW, et al. Aspects of fetal learning and memory. Child Development. 2009;80(4):1251-1258.
- 26. Dehaene-Lambertz G, Montavont A, Jobert A, et al. Language or music, mother or Mozart? Structural and environmental influences on infants' language networks. Brain and Language. 2009; in press.
- 27. Farroni T, Massaccesi S, Menon E, et al. Direct gaze modulates face recognition in young infants. Cognition. 2007;102:396-404.
- 28. Herschkowitz N. Neurological bases of behavioral development in infancy. Brain & Development. 2000;22:411-416.
- 29. Knickmeyer RC, Gouttard S, Kang C, et al. A structural MRI study of human brain development from birth to 2 years. Journal of Neuroscience. 2008;28(47):12176-12182.
- 30. Imada T, Zhang Y, Cheour M, et al. Infant speech perception activates Broca's area: a developmental magnetoencephalography study. NeuroReport. 2006;17(10):957-962.
- 31. Kuhl PK. A new view of language acquisition. Proceedings of the National Academy of Sciences of the United States of America. 2000;97(22):11850-11857.
- 32. Bunge SA, Zelazo PD. A brain-based account of the development of rule use in childhood. Current Directions in Psychological Science. 2006;15(3):118-121.

#### **Data References**

- 1. Educarer. 2006. Available at: http://www.educarer.org/brain.htm. Accessed June 4, 2010.
- 2. Corel JL. The postnatal development of the human cerebral cortex. Cambridge, MA; Harvard University Press; 1975.
- © 2016 The Urban Child Institute. All Rights Reserved. Privacy Policy | Grants | Login

#### Links:

- [1] http://www.urbanchildinstitute.org/sites/all/files/databooks/2011/ch1-fg1-the-human-brain.jpg
- [2] http://educarer.org
- [3] http://www.urbanchildinstitute.org/sites/all/files/databooks/2011/ch1-fg2-communication-between-neurons.jpg
- [4] http://www.urbanchildinstitute.org/sites/all/files/databooks/2011/ch1-fg3-synapse-density-over-time.jpg

A secure
attachment
occurs when the
child perceives
"the attachment
figure as
available and
responsive when
needed"
(Cassidy, 1999,
p.7)

#### **Attachment Relationships**

The emergence of attachments between infants and primary caregivers is also considered fundamental to a child's development (Bowlby, 1969). A central premise of attachment is that "virtually all infants develop close emotional bonds, or attachments, to those who regularly care for them in the early years of life" (National Research Council, 2000, p. 230), and that these attachments have a significant impact on development. Attachment relationships are described as "secure" or "insecure" depending on the nature and consistency of interactions between the child and his primary caregiver(s). A secure attachment occurs when the child perceives "the attachment figure as available and responsive when needed" (Cassidy, 1999, p.7) and provides a base from which the child is able to explore his environment and manage stress.

Awareness of the importance of attachment relationships is critical for parents and caregivers of infants and toddlers. According to attachment theory, the attachment model established with primary caregivers during the earliest years becomes the child's "working model" for the formation of future relationships (Thompson, 1999). Thus, the nature of a child's early relationships has long-lasting implications for relationships, learning, and development over time.

There is evidence that infants develop multiple attachments, typically with those who are most responsive and interactive with the infant (Cassidy, 1999), and that attachment relationships are specific to the caregiver (National Research Council, 2000, p. 235). Criteria for the development of attachment relationships include: "1.) the provision of physical and emotional care; 2.) continuity or consistency in a child's life; and 3.) emotional investment in the child" (Howes, 1999, p. 673). These criteria indicate that infants may form attachment relationships with caregivers in child care settings.

The awareness that child care providers may be identified as attachment figures heightens the importance of the relationship between the child and the caregiver. Kalmanson & Seligman (1992) state that "relationships are the organizing focus of all early development" (p. 47). If the relationship is nurturing and positive, the child will seek out and respond to the caregiver in ways that further her experience and contribute positively to her development. If the relationship is consistently harsh and unpredictable, the child may seek to avoid interactions with her caregiver, thus restricting opportunities to interact and learn from and through the relationship.

#### INBRIEF | THE SCIENCE OF NEGLECT

A series of brief summaries of essential findings from recent scientific publications and presentations by the Center on the Developing Child at Harvard University Thriving communities depend on the successful development of the people who live in them, and building the foundations of successful development in childhood requires responsive relationships and supportive environments.

Beginning shortly after birth, the typical "serve and return" interactions that occur between young children and the adults who care for them actually affect the formation of neural connections and the circuitry of the developing brain. Over the next few months, as babies reach out for greater engagement through cooing, crying, and facial expressions—and adults "return the serve" by responding with similar vocalizing and expressiveness—these reciprocal and dynamic exchanges literally shape the architecture of the developing brain. In contrast, if adult responses are unreliable, inappropriate, or simply absent, developing brain circuits can be disrupted, and subsequent learning, behavior, and health can be impaired.

Because responsive relationships are both expected and essential, their absence is a serious threat to a child's development and wellbeing. Sensing threat activates biological stress response systems, and excessive activation of those systems can have a toxic effect on developing brain circuitry. When the lack of responsiveness persists, the adverse effects of toxic stress can compound the lost opportunities for development associated with limited or ineffective interaction. This multifaceted impact of neglect on the developing brain underscores why it is so harmful in the earliest years of life and why effective early interventions are likely to pay significant dividends in better, long-term outcomes

in educational achievement, lifelong health, and successful parenting of the next generation.

Chronic neglect is associated with a wider range of damage than active abuse, but it receives less attention in policy and practice. Science tells us that young children who experience significantly limited caregiver responsiveness may sustain a range of adverse physical and mental health consequences that actually produce more widespread developmental impairments than overt physical abuse. These can include cognitive delays, stunting of physical growth, impairments in executive function and self-regulation skills, and disruptions of the body's stress response.

### Science Helps to Differentiate Four Types of Unresponsive Care

OCCASIONAL INATTENTION	CHRONIC UNDER-STIMULATION	SEVERE NEGLECT IN A FAMILY CONTEXT	SEVERE NEGLECT IN AN INSTITUTIONAL SETTING
Intermittent, diminished attention in an otherwise responsive environment	Ongoing, diminished level of child-focused responsiveness and developmental enrichment	Significant, ongoing absence of serve and return interaction, often associated with failure to provide for basic needs	"Warehouse-like" conditions with many children, few caregivers, and no individualized adult-child relationships that are reliably responsive
Can be growth- promoting under caring conditions	Often leads to developmental delays and may be caused by a variety of factors	Wide range of adverse impacts, from significant developmental impairments to immediate threat to health or survival	Basic survival needs may be met, but lack of individualized adult responsiveness can lead to severe impairments in cognitive, physical, and psychosocial development
No intervention needed	Interventions that address the needs of caregivers combined with access to high-quality early care and education for children can be effective	Intervention to assure caregiver responsiveness and address the developmental needs of the child required as soon as possible	Intervention and removal to a stable caring, and socially responsive environment required as soon as possible

With more than a half million documented cases in the U.S. in 2010 alone, neglect accounts for 78% of all child maltreatment cases nationwide, far more than physical abuse (17%), sexual abuse (9%), and psychological abuse (8%) *combined*. Despite these compelling findings, child neglect receives far less public attention than either physical abuse or sexual exploitation and a lower proportion of mental health services.

- Studies on children in a variety of settings show conclusively that severe deprivation or neglect:
- disrupts the ways in which children's brains develop and process information, thereby increasing the risk for attentional, emotional, cognitive, and behavioral disorders.
- alters the development of biological stressresponse systems, leading to greater risk for anxiety, depression, cardiovascular problems, and other chronic health impairments later in life.
- is associated with significant risk for emotional and interpersonal difficulties, including high levels of

- negativity, poor impulse control, and personality disorders, as well as low levels of enthusiasm, confidence, and assertiveness.
- is associated with significant risk for learning difficulties and poor school achievement, including deficits in executive function and attention regulation, low IQ scores, poor reading skills, and low rates of high school graduation.

The negative consequences of deprivation and neglect can be reversed or reduced through appropriate and timely interventions, but merely removing a young child from an insufficiently responsive environment does not guarantee positive outcomes. Children who experience severe deprivation typically need therapeutic intervention and highly supportive care to mitigate the adverse effects and facilitate recovery.

For more information, see "The Science of Neglect: The Persistent Absence of Responsive Care Disrupts the Developing Brain" and the Working Paper series from the Center on the Developing Child at Harvard University. www.developingchild.harvard.edu/resources/

#### IMPLICATIONS FOR POLICY AND PROGRAMS

Science tells us that repeated and persistent periods of prolonged unresponsiveness from primary caregivers can produce toxic stress, which disrupts brain architecture and stress response systems that, in turn, can lead to long-term problems in learning, behavior, and both physical and mental health. These advances in science should inform a fundamental re-examination of our approaches to the identification, prevention, reduction, and mitigation of neglect and its consequences, particularly in the early years of life.

- Address the distinctive needs of children who are experiencing significant neglect. The immediate circumstances and long-term prospects of neglected children could be enhanced significantly by: (1) disseminating new scientific findings to child welfare professionals and focusing on the implications of this evidence for practice; (2) supporting collaboration between child development researchers and service providers to develop more effective prevention and intervention strategies; (3) coordinating across policy and service sectors to identify vulnerable children and families as early as possible; and (4) creating contexts for cooperation among policymakers, family court judges, and practitioners to improve access to non-stigmatizing, community-based services.
- Invest in prevention programs that intervene as early as possible. The earlier in life that neglected children receive appropriate intervention, the more likely they are to achieve long-term, positive outcomes and contribute productively to their communities. Key personnel in the primary health care, child welfare, mental health, and legal systems can work together to assure the earliest possible identification of families that require preventive assistance as well as children who need therapeutic intervention. Because child neglect often co-occurs with other family problems (particularly parental mental health disorders and addictions), specialized services that address a variety of medical, economic, and social needs in adults present important opportunities to identify and address neglectful circumstances for young children. Policies and programs that provide preventive interventions in high-risk situations before the onset of neglect present a particularly compelling goal.

The authors gratefully acknowledge the contributions of the National Governors Association Center for Best Practices and the National Conference of State Legislatures.



www.developingchild.harvard.edu

#### ALSO IN THIS SERIES:

INBRIEF: The Science of Early Childhood Development
INBRIEF: The Impact of Early Adversity on Brain Development

IN**BRIEF**: Early Childhood Program Effectiveness IN**BRIEF**: The Foundations of Lifelong Health

IN**BRIEF**: Executive Function: Essential Skills for Life and Learning

INBRIEF: Early Childhood Mental Health

## **Tipping the Scale Toward Positive Outcomes**

Child development is like a balance scale with two sides. Experiences that can result in toxic stress, such as repeated or chronic exposure to violence, poverty, or maltreatment, pile on the negative side of the scale. Positive influences that can help make significant stress tolerable, such as supportive relationships, skill-building opportunities, and practice dealing with manageable challenges, tip the scale the other way. Part of the reason for the variability in how individual children develop is that their scales can be loaded and tipped in different ways. Even under highly adverse conditions, development can proceed in a positive direction if parents and other caregivers provide consistent responsiveness, and if communities provide resources and supports that strengthen families' capacities and make a broader environment of protective relationships accessible to all children.

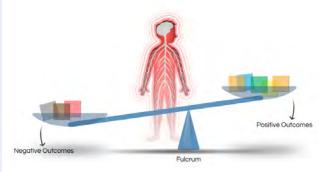
There is another part of the scale that affects how it tips, called the fulcrum. As with any scale or seesaw, if a child's fulcrum is placed closer to one end than the other, it becomes harder to tip the scale in that direction. In this representation, the initial placement of the fulcrum represents individual predispositions, which vary from one child to another. These variations in temperament and innate abilities, which reflect underlying genetic differences, mean that individual children start with their fulcrums in different places along the scale. This placement affects how they respond to the weight of experiences they have—whether minor adversity will tip the child's scale toward poor outcomes, for example, or whether major therapeutic intervention is needed to tip the scale toward positive outcomes.

Although the initial placement of the fulcrum has an early impact on a child's developmental trajectory, advances in science are now showing us that the position of the fulcrum is not fixed. To the contrary, the cumulative impacts of life experiences that tip the scale in either direction can also shift the fulcrum's location over time. Stated differently, the continuing accumulation of positive and negative experiences over time actually influences the child's mental and physical constitution—and thus has the power to slide the fulcrum.

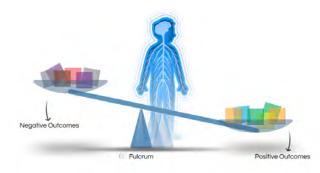
One way to actively move the fulcrum to a position that makes the scale better able to bear the weight of negative experiences is to build the capabilities needed to manage stress. These include the ability to focus attention, solve problems, plan ahead, adjust to new circumstances, regulate behavior, and control impulses. These skills, many of which fall within what is called executive function and selfregulation, constitute important building blocks for dealing



When positive experiences outweigh negative experiences, a child's "scale" tips toward positive outcomes.



The initial placement of the fulcrum affects how easily the scale tips toward positive or negative outcomes.



Over time, the cumulative impact of positive life experiences and coping skills can shift the fulcrum's position, making it easier to achieve positive outcomes.

with adversity, and the mastery of these skills can positively reposition the fulcrum. It is important to note that the fulcrum's position is never completely locked. However, the brain's ability to change decreases with age, making it more difficult to shift the fulcrum's location as children get older.

# Developmental Milestones

# Three Months:

- Raises head and chest when lying on stomach
- Takes swipes at dangling objects with hands
- Watches faces intently
- Recognizes familiar objects and people at a distance
- Smiles at the sound of your voice
- Begins to imitate some sounds
- Imitates some movements and facial expressions

## One Year:

- Prefers regular caregiver over all others
- Repeats sounds or gestures for attention
- Finger-feeds himself
- Reaches sitting position without assistance
- Creeps on hands and knees
- Pulls self up to stand
- Walks holding on to furniture
- Responds to simple verbal requests
- Uses simple gestures, such as shaking head for "no"
- Babbles with inflection
- Says "dada" and "mama"
- Tries to imitate words
- Imitates gestures
- Explores objects in many different ways (shaking, banging, throwing, dropping)

# five Years:

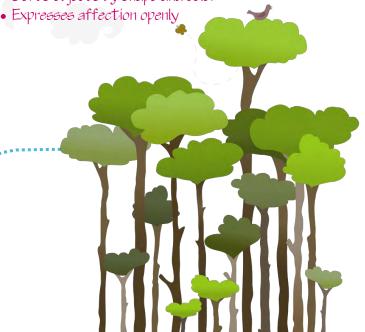
- Stands on one foot for 10 seconds or longer
- Hops, somersaults, swings, climbs
- Copies triangle and other geometric patterns
- Draws person with body
- Prints some letters
- Dresses and undresses without assistance
- Speaks sentences of more than five words
- Uses future tense
- Says name and address
- Can count 10 or more objects
- Correctly names at least four colors
- Wants to please friends
- Likes to sing, dance and act
- Able to distinguish fantasy from reality
- Sometimes demanding, sometimes eagerly cooperative

# Seven Months.

- · Rolls both ways
- Sits with, and then without, support of hands
- Transfers object from hand to hand
- Responds to own name
- Uses voice to express joy and displeasure
- Finds partially hidden object
- Struggles to get objects that are out of reach
- Enjoys social play
- Interested in mirror images

# Three Years:

- Walks up and down stairs, alternating feet
- Bends over easily without falling Runs easily
- Holds a pencil in writing position
- Kicks ball
- Screws and unscrews jar lids, nuts and bolts
- Follows a two- or three-component command
- Understands physical relationships ("on," "in," "under")
- Uses four- and five-word sentences
- Can say name, age and sex Can take turns in games
- Uses pronouns (I, you, me, we, they) and some plurals (cars, dogs, cats)
- Understands concept of "mine" and "his/hers"
- Completes puzzles with three or four pieces
- Spontaneously shows affection for familiar playmates
- Sorts objects by shape and color



# Etapas del Desarrolló

# Tres Meses:

- Alza cabeza y pecho cuando esta acostado de estomago
- Con las manos intenta darle golpes a objetos que cuelgan
- Mira caras intensamente
- Reconoce objetos o personas a una distancia
- Sonríe al escuchar su voz
- Comienza a imitar algunos sonidos
- Imita algunos movimientos y expresiones faciales

# Un Ato:

- Prefiere proveedor regular de cuidado a otros
- Repite sonido o gestos para atención
- Puede comer solo con las manos
- Logra sentarse sin asistencia
- Se arrastra en manos y rodillas
- Se jala para pararse
- Camina sosteniéndose de muebles
- Responde a petición verbal sencilla
- Usa gestos simples, como mover la cabeza para "no
- Balbucear con inflexion
- Dice "papa" o "mama"
- Trata de imitar palabras
- Imita gestos
- Explora objetos de diferentes maneras (sacudiendo, golpeando, aventando, dejando caer)

# Cinco Años:

- Se mantiene de pie un pie por 10 segundos o mas
- Copea triángulos o otros patrones geométricos
- Dibuja persona con cuerpo
- Salta, hace volteretas (maromas), se columpia, escala
- Escribe algunas letras
- Se viste y desviste sin niguna asistencia
- Habla oraciones con mas de cinco palabras
- Habla del tiempo futuro
- Dice nombre y dirección
- Puede contar 10 o mas objetos
- Correctamente nombra al menos cuatro colores
- Quiere complacer a amigos
- Le gusta cantar, bailar y actuar
- Puede distinguir fantasía de la realidad
- A veces demanda, a veces copera con entusiasmo

# Siete Meses:

- Voltea de ambos lados
- Se sienta con, y luego sin, el apoyo de sus manos
- Transfiere objetos de una mano a otra
- Responde a su propio nombre
- Usa su voz para expresar alegría y desagrado
- Encuentra objetos que están parcialmente escondidos
- Lucha para obtener objetos que están fuera de su alcance
- Desfruta de juegos sociales
- Se interesa por imágenes en el espejo

# Tres Años:

- Sube y baja las escaleras caminado y alternando los pies
- Se agacha fácilmente sin caerse
- Corre fácilmentePatea pelota
- Sujeta un lápiz en posición para escribir
- Abre y cierra tapadera de frascos, tornilla y
- desatornilla tornillos Puede tomar turnos en juegos
- Sigue una orden de dos o tres componentes (pasos)
- Entiende relaciones físicas ("sobre," "en," "debajo")
- Usa frases con cuatro a cinco palabras
- Usa Pronombres (Yo, tu, mi, nosotros, ellos) y algunos plurales (carros, perros, gatos)
- Entiende concepto de "mío" y "de el/de ella"
- Termina rompecabezas con tres a cuatro piezas
- Separa objetos por forma y color
- Expresa afecto abiertamente
- Puede decir nombre, edad y sexo
- Espontáneamente demuestra afecto por compañeros conocidos



# Developmental Milestones: 3-5 Years

Children go through many changes from ages 3 to 5 years. These changes unfold in stages over time and are marked by generally accepted developmental milestones.

But no two children develop at the same pace, and there are age ranges for all behaviors. One child may reach a milestone early in the acceptable range—another, later. Also, all children can have a difficult day or week. So, observe your child for at least a few weeks before suspecting a possible delay. Children born prematurely tend to reach milestones a little later. And it is not unusual for a child to regress in one skill or another from time to time. For example, a new sibling or other big change at home can cause anxiety, disrupt a child's sleep, and lead to crankiness and disobedience.

Use these milestones as a general guide. What matters most is that your child progresses from one stage to another at a fairly steady pace. Reaching a milestone earlier or later does not mean a child will achieve other milestones earlier or later does not mean a child will achieve other milestones earlier or later. It is not until age 4 or 5 years that developmental success or delay are strong indications of what a child will be able to do later.

Milestones during ages 3–5 years

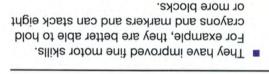
The following is a general guide to some basic milestones for physical, cognitive, language, and social and emotional development reached during ages 3–5 years.

# 3 years Physical development milestones:

- All of a child's baby teeth are in.
- Children are able to climb stairs one foot at a time.
- They have greater gross motor skills. For example, they can stand briefly on one foot, kick a large ball, throw overhand, and play catch with a large ball.
- They like activities such as peddling a tricycle and swinging on a swing set.

Foster Child

You and Your



They may use the potty all of the time by this age.

### Cognitive development milestones:

- Children pay close attention to stories and make remarks related to the story.
   They know and can identify basic
- shapes—square, circle, triangle.

  They are able to sort things by color,
- size, or shape.They understand the concept of size, such as which is smallest or largest.
- They at least know the primary colors red, yellow, and blue.
- You and Your Foster Child is a publication of the University of Pittsburgh Office of Child Development made possible with help from the Frank and Theresa Caplan Fund for Early Childhood Development and Parenting Education. Additional topics in the You and Your Foster Child series are available on the Internet at

www.education.pitt.edu/ocd/family. You and Your Foster Child may be reproduced for nonprofit use only.

www.education.pitt.edu/ocd/publications/fosterparent. Other helpful publications on parenting, children, youth, and families from the University of Pittsburgh Office of Child Development are also available online at

HORUERITIS SO YTISSENINU

OCD CHIED DEVELOPMENT

Supporting families and professionals through research, education, practice, and policy

#### Cognitive development milestones:

- Children know whether words sound alike or not, such as "sat" and "pat."
- Some may be able to start reading basic books with a few words on each page.
- They like to create nonsense words and sayings.
   They know concepts such as largest, highest, and alike.
- They are able to respond correctly when asked to point to the picture of the highest building.
- They can count up to 20.
- Near the end of their fourth year, children can name
   18–20 capital letters and write them. They also can print

their name and identify a few printed words.

#### Language development milestones:

- Children are able to respond to questions such as, "Whose?" and "Why?"
- They use more complex sentences. For example: "The doggie took the ball and ran upstairs after I
- threw the ball."

  They start to use verbs properly in the past tense:
- "Mommy went upstairs."

  They can talk about things, people, and activities not currently happening.
- They respond appropriately with solutions when asked about what to do if they are sleepy, thirsty, or chilly.
- A child can give his or her name, gender, and, possibly, telephone number.

#### Social and emotional development milestones:

- Children's emotions can quickly swing—from laughing to crying, for example.
- They may boast a lot and stretch the truth about their abilities.
- They become more cooperative with peers, especially in group activities. But they also may show increased selfcenteredness and fail to wait their turn.
- They have a strong desire to do things independently.
- They like to pretend they are other people and to play dress-up.
- Peer groups are closer, and children this age may develop a favorite friend.

- They enjoy counting and can do it out loud.
- They begin to understand dangerous situations, such as

a hot stove or cars driving along the street.

#### Language development milestones:

- Children have better conversational skills. They respond properly to questions, continue a conversation with an appropriate comment, and ask questions that lead to conversations. For example, "Why did he do that?"
- Their attention span is about three minutes.
- They can speak 300 to 1,000 words.
- They can sing songs, recite nursery rhymes, and label
- many common objects.

  They are understood most of the time.

### Social and emotional development milestones:

### Children understand the idea of taking turns, but they

- o not always do it.
- They may develop fears, especially at night.
- They may have conversations with themselves.
- They play alongside other children and may join in other children's play
- They begin to play make believe, both with themselves
- and others.

# 4 years Physical development milestones:

#### Children can hop using only one foot.

- Running is easier. They can stop and start more easily and sidestep obstacles.
- They enjoy climbing on playground equipment.
- They can feed themselves with a spoon and fork.
- They can reed themselves with a spoon and rork.
- Improved fine motor skills enable them to make shapes out of play dough, hold a pencil and write letters, use round-tipped scissors, and thread beads onto a string.
- They can use the bathroom by themselves.

#### Social and emotional development milestones:

- duonbs. Children are able to share, take turns, and play in
- and costumes. Their play is more involved and includes roles, props,
- cially smaller children, animals, or a child who is hurt. They show a great deal of affection toward others, espe-
- follow instructions. ■ They usually comply with requests and
- They enjoy entertaining their caregivers and other chil-Children this age are better at controlling their emotions.
- shy about talking about them. They are very proud of their achievements and are not dren. They also like to make them laugh.

#### When to seek professional help

you observe the following: with your child's pediatrician or other health professional if will show all of the behaviors on the lists. However, consult children reach them early, some later, and not all children Remember, these milestones are a general guide. Some

- after the end of a stage. milestones within a reasonable period of time Your child does not achieve a majority of the
- consistent progress. Your child does not appear to be making

developmental delays. early to improve the outcomes of children who do have appropriate steps to take. It is very important to intervene diagnose developmental delays if present and suggest the Pediatricians and other health care professionals can

#### Physical development milestones: 5 years

- Children can walk backwards easily.
- feet without help. They can climb up and down stairs interchanging their
- changing their feet, and easily catch a ball. Their gross motor skills advance; they can tumble, skip
- ward 10 paces and keep their balance while standing on Better coordination enables them to jump or hop for-
- within the boundaries of a coloring book picture. and letters, cut with scissors better, and start to color Advanced fine motor skills enable them to copy shapes one foot for at least 10 seconds.
- By this age, a child has a dominant hand.

#### Cognitive development milestones:

- numerals 1-10. Children can count from at least 1 to 20 and identify
- container that holds the most. They begin to understand volume and can identify the
- They understand night and day and their relation
- They begin to understand the concept of time, and to time.
- some begin to tell time.
- They understand what a calendar is.
- different coins. Children understand and can label the value of
- the alphabet. They may be able to identify all of the letters in
- They know what it means to divide something in half.

#### Children this age know about 1,500 words. Language development milestones:

- They can retell a story while following along with pic-
- They can explain what things do according to their purtures in a book.
- making shapes. pose. A bike is to ride, for example, or play dough is for
- point them out. They know the names of four to eight colors and can
- They can identify their city, birth date, and the names of
- They are able to answer the telephone properly. their parents.
- went, caught, and swam. They can use irregular verbs in the past tense, such as

# Infant

# CUES

BIRTH to 6 MONTHS



"I want to be near you."



**DISENGAGEMENT**"I need something to be different."

#### **ENGAGEMENT CUES**

- eyes open
- · looks intently at your face
- · follows your voice and face
- smiles
- relaxes face
- smooth body movements
- · feeding sounds
- rooting

#### CAREGIVER/PARENT RESPONSE

Time to play or feed (if baby shows hunger cues).

Remember, playing is hard work for baby and baby tires easily.

#### **DISENGAGEMENT CUES**

- turns or looks away
- pushes away or arches back
- cries
- coughs
- · extends fingers with a stiff hand
- · yawns or falls asleep
- grimaces
- · has a glazed look

#### CAREGIVER/PARENT RESPONSE

Play detective and follow the cues to figure out what needs to be different.







# INFANT STATES

#### BIRTH to 6 MONTHS



#### CRYING

- Tears
- Jerky movements
- · Color changes
- Muscle tension
- · Rapid breathing
- · Generally doesn't respond quickly



#### IRRITABLE

- Lots of movement
- Irregular breathing
- Eyes open, but not focused
- Sometimes fussy
- · Sensitive to body and surroundings
- · Common before feeding



#### QUIET ALERT

- · Little body movement
- Eyes wide open
- · Steady, regular breathing
- · Very responsive
- · Wants to play and interact
- Requires energy and can make babies tired



#### **DROWSY**

- Variable movement
- Irregular breathing
- · Opens and closes eyes
- · Tired eyes
- · Delayed reaction time



#### LIGHT SLEEP (ACTIVE SLEEP)

- Some movement
- Irregular breathing
- Facial movement
- Rapid eye movement (REM)
- Easily awakened and startled



#### DEEP SLEEP (QUIET SLEEP)

- No body movement
- Regular breathing
- · Bursts of sucking
- Not easily awakened



Source: Brazelton, TB (1973) Neonatal Behavioral Assessment Scale. Clinics in Developmental Medicine, No. 50 JP Lippincott, Philadelphia.

# Activities for Infants 1-4 Months Old



Talk softly to your baby when beeding him, changing his diapers, and holding him. He may not understand every word, but he will know your voice and be comforted by it.	When you see your baby responding to your voice, praise and cuddle her. Talk back to her and see if she responds again.	Take turns with your baby when he makes cooing and gurgling sounds. Have a "conversation" back and forth with simple sounds that he can make.	Sing to your baby (even if you don't do it well). Repetition of songs and lullabies helps your	With your baby securely in your arms or in a front pack, gently swing and sway to music that you are singing or playing on the radio.
Place a shatterproof mirror close to your baby where she can see it. Start talking, and tap the mirror to get her to look. The mirror will provide visual stimulation. Eventually your baby will understand her reflection.	Rock your baby gently in your arms and sing "Rock-a-bye Baby" or another lullaby. Sing your lullaby and swing your baby to the gentle rhythm.	Put a puppet or small sock on your finger. Say your baby's name while moving the puppet or sock up and down. See whether he follows the movement. Now move your finger in a circle. Each time your baby is able to follow the puppet, try a new movement.	With your baby on her back, hold a brightly colored stuffed animal above her head, in her line of vision. See if she watches the stuffed animal as you move it slowly back and forth.	Make sure your baby is positioned so that you can touch his feet. Gently play with his toes and feet, tickling lightly. Add the "This Little Piggy Went to Market" rhyme, touching a different toe with each verse.
Rest your baby, tummy down, on your arm, with your hand on her chest. Use your other hand to secure your baby—support her head and neck. Gently swing her back and forth. As she gets older, walk around to give her different views.	Hold your baby in your lap and softly shake a rattle on one side of his head, then the other side. Shake slowly at first, then faster. Your baby will search for the noise with his eyes.	Place your baby on her tummy with head to one side, on a blanket/towel on carpeted floor. Lie next to her to provide encouragement. Until she has the strength, have her spend equal time facing left and right. Make "tummy time" a little longer each day. Closely watch your baby in case she rests her face on the floor, which could restrict breathing. As her strength grows, she will be able to lift her head and push up on her arms, leading to rolling and crawling.	Lay your baby on his back and touch his arms and legs in different places. Make a "whooping" sound with each touch. Your baby may smile and anticipate the next touch by watching your hand. When you make each sound, you can also name the part of the body you touch.	In nice weather, take your baby on a nature walk through a park or neighborhood. Talk about everything you see. Even though she might not understand everything, she will like being outside and hearing your voice.
Read simple books to your baby. Even if he does not understand the story, he will enjoy being close and listening to you read.	bull's eyes, checkerboards, triangles).	Lay your baby on his back on a soft, flat surface such as a bed or a blanket. Gently tap or rub your baby's hands and fingers while singing "Pata-Cake" or	Gently shake a rattle or another baby toy that makes a noise. Put it in your baby's hand. See if she takes it, even for a brief moment.	Hold your baby closely, or lay him down on a soft, flat surface. Be close enough (8"–12") so that he can see you. Face to face, start with small movements (stick out your tongue, open your mouth with a wide grin). If you are patient, your baby may try to imitate you. As he gets older, you can try larger body movements with your head, hands, and arms. You can also try to imitate your baby.

# Activities for Infants 4-8 Months Old



		and the same of th		
Put a windup toy beside or behind your baby. Watch to see if your baby searches for the sound.	Give your baby a spoon to grasp and chew on. It's easy to hold and feels good in the mouth. It's also great for banging, swiping, and dropping.	While sitting on the floor, place your baby in a sitting position inside your legs. Use your legs and chest to provide only as much support as your baby needs. This allows you to play with your baby while encouraging independent sitting.	Gently rub your baby with a soft cloth, a paper towel, or nylon. Talk about how things feel (soft, rough, slippery). Lotion feels good, too.	Let your baby see herself in a mirror. Place an unbreakable mirror on the side of your baby's crib or changing table so that she can watch. Look in the mirror with your baby, too. Smile and wave at your baby.
Common household items such as measuring spoons and measuring cups make toys with interesting sounds and shapes. Gently dangle and shake a set of measuring spoons or measuring cups where your baby can reach or kick at them. Let your baby hold them to explore and shake, too.	Play voice games. Talk with a high or low voice. Click your tongue. Whisper. Take turns with your baby. Repeat any sounds made by him. Place your baby so that you are face to face—your baby will watch as you make sounds.	Fill a small plastic bottle (empty medicine bottle with child-proof cap) with beans or rice. Let your baby shake it to make noise.	Make another shaker using bells. Encourage your baby to hold one in each hand and shake them both. Watch to see if your baby likes one sound better than another.	Place your baby on her tummy with favorite toys or objects around but just slightly out of reach. Encourage her to reach out for toys and move toward them.
Fill an empty tissue box with strips of paper. Your baby will love pulling them out. (Do not use colored newsprint or magazines; they are toxic. Never use plastic bags or wrap.)	Safely attach a favorite toy to a side of your baby's crib, swing, or cradle chair for him to reach and grasp. Change toys frequently to give him new things to see and do.	Place your baby in a chair or car seat, or prop her up with pillows. Bounce and play with a flowing scarf or a large bouncing ball. Move it slowly up, then down or to the side, so that your baby can follow movement with her eyes.	With your baby lying on his back, place a toy within sight but out of reach, or move a toy across your baby's visual range. Encourage him to roll to get the toy.	Play Peekaboo with hands, cloth, or a diaper. Put the cloth over your face first. Then let your baby hide. Pull the cloth off if your baby can't. Encourage her to play. Take turns.
Place your baby in a chair or car seat to watch everyday activities. Tell your baby what you are doing. Let your baby see, hear, and touch common objects. You can give your baby attention while getting things done.	Place your baby on your knee facing you. Bounce him to the rhythm of a nursery rhyme. Sing and rock with the rhythm. Help your baby bring his hands together to clap to the rhythm.	Your baby will like to throw toys to the floor. Take a little time to play this "go and fetch" game. It helps your baby to learn to release objects. Give baby a box or pan to practice dropping toys into.	Once your baby starts rolling or crawling on her tummy, play "come and get me." Let your baby move, then chase after her and hug her when you catch her.	Place your baby facing you. Your baby can watch you change facial expressions (big smile, poking out tongue, widening eyes, raising eyebrows, puffing or blowing). Give your baby a turn. Do what your baby does.

# Activities for Infants 8-12 Months Old



Let your baby feed himself. This gives your baby practice picking up small objects (cereal, cooked peas) and also gives him experience with textures in his hands and mouth. Soon your baby will be able to finger feed an entire meal.	Your baby will be interested in banging objects to make noise. Give your baby blocks to bang, rattles to shake, or wooden spoons to bang on containers. Show your baby how to bang objects together.	A good pastime is putting objects in and out of containers. Give your baby plastic containers with large beads or blocks. Your baby may enjoy putting socks in and out of the sock drawer or small cartons (Jell-O, tuna or soup cans) on and off shelves.	Mirrors are exciting at this age. Let your baby pat and poke at herself in the mirror. Smile and make faces together in the mirror.	Your baby will begin using his index fingers to poke. Let your baby poke at a play telephone or busy box. Your baby will want to poke at faces. Name the body parts as your baby touches your face.
Put toys on a sofa or sturdy table so that your baby can practice standing while playing with the toys.	Find a big box that your baby can crawl in and out of. Stay close by and talk to your baby about what she is doing. "You went in! Now you are out!"	Read baby books or colorful magazines by pointing and telling your baby what is in the picture. Let your baby pat pictures in the book.	Play hide-and-seek games with objects. Let your baby see you hide an object under a blanket, diaper, or pillow. If your baby doesn't uncover the object, just cover part of it. Help your baby find the object.	Play ball games. Roll a ball to your baby. Help your baby, or have a partner help him roll the ball back to you. Your baby may even throw the ball, so beach balls or Nerf balls are great for this game.
Turn on a radio or stereo. Hold your baby in a standing position and let your baby bounce and dance. If your baby can stand with a little support, hold her hands and dance like partners.	Play imitation games like Peeka- boo and So Big. Show pleasure at your baby's imitations of movements and sounds. Babies enjoy playing the same games over and over.	Let your baby play with plastic measuring cups, cups with handles, sieves and strainers, sponges, and balls that float in the bathtub. Bath time is a great learning time.	Play Pat-a-Cake with your baby. Clap his hands together or take turns. Wait and see if your baby signals you to start the game again. Try the game using blocks or spoons to clap and bang with.	Your baby will play more with different sounds like "la-la" and "da-da." Copy the sounds your baby makes. Add a new one and see if your baby tries it, too. Enjoy your baby's early attempts at talking.
Make a simple puzzle for your baby by putting blocks or Ping- Pong balls inside a muffin pan or egg carton.	You can make a simple toy by cutting a round hole in the plastic lid of a coffee can. Give your baby wooden clothes pins or Ping-Pong balls to drop inside.	Say "hi" and wave when entering a room with your baby. Encourage your baby to imitate. Help your baby wave to greet others. Waving "hi" and "bye" are early gestures.	Let your baby make choices. Offer two toys or foods and see which one your baby picks. Encourage your baby to reach or point to the chosen object. Babies have definite likes and dislikes!	New places and people are good experiences for your baby, but these can be frightening. Let your baby watch and listen and move at her own speed. Go slowly. Your baby will tell you when she is ready for more.
			l ————————————————————————————————————	

## Activities for Infants 12–16 Months Old



Babies love games at this age (Pat-a-Cake, This Little Piggy). Try different ways of playing the games and see if your baby will try it with you. Hide behind furniture or doors for Peekaboo; clap blocks or pan lids for Pat-a-cake.	Make puppets out of a sock or paper bag—one for you and one for your baby. Have your puppet talk to your baby or your baby's puppet. Encourage your baby to "talk" back.	To encourage your baby's first steps, hold your baby in standing position, facing another person. Have your baby step toward the other person to get a favorite toy or treat.	Give your baby containers with lids or different compartments filled with blocks or other small toys. Let your baby open and dump. Play "putting things back." This will help your baby learn how to release objects where he wants them.	Loosely wrap a small toy in a paper towel or facial tissue without tape. Your baby can unwrap it and find a surprise. Use tissue paper or wrapping paper, too. It's brightly colored and noisy.
Babies enjoy push and pull toys. Make your own pull toy by threading yogurt cartons, spools, or small boxes on a piece of yarn or soft string (about 2 feet long). Tie a bead or plastic stacking ring on one end for a handle.	Tape a large piece of drawing paper to a table. Show your baby how to scribble with large nontoxic crayons. Take turns making marks on the paper. It's also fun to paint with water.	Arrange furniture so that your baby can work her way around a room by stepping across gaps between furniture. This encourages balance in walking.	Babies continue to love making noise. Make sound shakers by stringing canning rims together or filling medicine bottles (with child-proof caps) with different-sounding objects like marbles, rice, salt, bolts, and so forth. Be careful to secure lids tightly.	This is the time your baby learns that adults can be useful! When your baby "asks" for something by vocalizing or pointing, respond to his signal. Name the object your baby wants and encourage him to communicate again—taking turns with each other in a "conversation."
Play the naming game. Name body parts, common objects, and people. This lets your baby know that everything has a name and helps her begin to learn these names.	Make an obstacle course with boxes or furniture so that your baby can climb in, on, over, under, and through. A big box can be a great place to sit and play.	Let your baby help you clean up. Play "feed the wastebasket" or "give it to Mommy or Daddy."	Make a surprise bag for your baby to find in the morning. Fill a paper or cloth bag with a soft toy, something to make a sound, a little plastic jar with a screw-top lid, or a book with cardboard pages.	Play "pretend" with a stuffed animal or doll. Show and tell your baby what the doll is doing (walking, going to bed, eating, dancing across a table). See if your baby will make the doll move and do things as you request. Take turns.
Cut up safe finger foods (do not use foods that pose a danger of your baby's choking) in small pieces and allow your baby to feed himself. It is good practice to pick up small things and feel different textures (bananas, soft crackers, berries).	Let your baby "help" during daily routines. Encourage your baby to "get" the cup and spoon for mealtime, to "find" shoes and coat for dressing, and to "bring" the pants or diaper for changing. Following directions is an important skill for your baby to learn.	Your baby is learning that different toys do different things. Give your baby a lot of things to roll, push, pull, hug, shake, poke, turn, stack, spin, and stir.	Most babies enjoy music. Clap and dance to the music. Encour- age your baby to practice bal- ance by moving forward, around, and back. Hold her hands for support, if needed.	Prepare your baby for a future activity or trip by talking about it beforehand. Your baby will feel like a part of what is going on rather than being just an observer. It may also help reduce some fear of being "left behind."

# Activities for Toddlers 16-20 Months Old



Toddlers love to play in water. Put squeezable objects in the pathtub, such as sponges or squeeze bottles, along with dump-and-pour toys (cups, poowls).	Toddlers are excited about bub- bles. Let your toddler try to blow bubbles or watch you blow bubbles through a straw. Bub- bles are fun to pop and chase, too.	Pretend play becomes even more fun at this age. Encourage your toddler to have a doll or stuffed toy do what he does—walk, go to bed, dance, eat, and jump. Include the doll in daily activities or games.	Make instant pudding together. Let your toddler "help" by dumping pudding, pouring milk, and stirring. The results are good to eat or can be used for finger painting.	Use boxes or buckets for your toddler to throw bean bags or balls into. Practice overhand release of the ball or bean bag.
Play Hide and Seek. Your tod- dler can hide with another per- son or by herself for you to find. Then take your turn to hide and let your toddler find you.	Toddlers love movement. Take him to the park to ride on rocking toys, swings, and small slides. You may want to hold your toddler in your lap on the swing and on the slide at first.	Sing action songs together such as "Ring Around the Rosy," "Itsy-Bitsy Spider," and "This Is the Way We Wash Our Hands." Do actions together. Move with the rhythm. Wait for your toddler to anticipate the action.	Put favorite toys in a laundry basket slightly out of reach of your toddler or in a clear container with a tight lid. Wait for your toddler to request the objects, giving her a reason to communicate. Respond to her requests.	Your toddler may become interested in "art activities." Use large nontoxic crayons and a large pad of paper. Felt-tip markers are more exciting with their bright colors. Let your toddler scribble his own picture as you make one.
A favorite pull toy often is a small wagon or an old purse for collecting things. Your toddler can practice putting objects in and out of it. It can also be used to store favorite items.	Make a picture book by putting common, simple pictures cut from magazines into a photo album. Your toddler will enjoy photos of herself and family members. Pictures of pets are favorites, too.	Toddlers are interested in playing with balls. Use a beach ball to roll, throw, and kick.	Play the "What's that?" game by pointing to clothing, toys, body parts, objects, or pictures and asking your toddler to name them. If your toddler doesn't respond, name it for him and encourage imitation of the words.	Fill a plastic tub with cornmeal or oatmeal. Put in kitchen spoons, strainers, measuring cups, funnels, or plastic containers. Toddlers can fill, dump, pour, and learn about textures and use of objects as tools. Tasting won't be harmful.
Toddlers will begin putting objects together. Simple puzzles (separate pieces) with knobs are great. Putting keys into locks and letters into mailbox slots is fun, too.	"Where did it go?" Eventually	Help your toddler sort objects into piles. He can help you sort laundry (put socks in one pile and shirts in another). Play "clean up" games. Have your toddler put toys on specified shelves or boxes.	Save milk cartons or gelatin or pudding boxes. Your toddler can stack them to make towers. You can also stuff grocery bags with newspapers and tape them shut to make big blocks.	Lay out your toddler's clothes on the bed before dressing. Ask her to give you a shirt, pants, shoes, and socks. This is an easy way to learn the names of common items.

# Activities for Toddlers 20-24 Months Old



Toddlers enjoy looking at old pictures of themselves. Tell simple stories about him as you look at the pictures. Talk about what was happening when the picture was taken.	Cut a rectangular hole in the top of a shoebox. Let your toddler insert an old deck of playing cards or used envelopes. The box is easy storage for your tod- dler's "mail."	Set up your own bowling game using plastic tumblers, tennis ball cans, or empty plastic bottles for bowling pins. Show your toddler how to roll the ball to knock down the pins. Then let your toddler try.	Many everyday items (socks, spoons, shoes, mittens) can help your toddler learn about matching. Hold up an object, and ask if she can find one like yours.  Name the objects while playing the game.	Hide a loudly ticking clock or a softly playing transistor radio in a room and have your child find it. Take turns by letting him hide and you find.
A good body parts song is "Head, Shoulders, Knees, and Toes." Get more detailed with body parts by naming teeth, eyebrows, fingernails, and so forth.	Make your toddler an outdoor "paint" set by using a large wide paint brush and a bowl or bucket of water. Your toddler will have fun "painting" the side of the house, a fence, or the front porch.	Turn objects upside down (books, cups, shoes) and see if your toddler notices they're wrong and turns them back the right way. Your toddler will begin to enjoy playing "silly" games.	Give your toddler some of your old clothes (hats, shirts, scarves, purses, necklaces, sunglasses) to use for dress up. Make sure your toddler sees herself in the mirror. Ask her to tell you who is all dressed up.	Use plastic farm animals or stuffed animals to tell the Old McDonald story. Use sound ef- fects!
Make grocery sack blocks by filling large paper grocery sacks about half full with shredded or crumpled newspaper. Fold the top of the sack over and tape it shut. Your toddler will enjoy tearing and crumpling the paper and stuffing the sacks. The blocks are great for stacking and building. Avoid newsprint contact with mouth. Wash hands after this activity.	"Dress up" clothes offer extra practice for putting on and tak- ing off shirts, pants, shoes, and socks. Toddlers can fasten big zippers and buttons.	Put small containers, spoons, measuring cups, funnels, a bucket, shovels, and a colander into a sandbox. Don't forget to include cars and trucks to drive on sand roads.	Rhymes and songs with actions are popular at this age. "Itsy-Bitsy Spider," "I'm a Little Teapot," and "Where Is Thumb-kin?" are usual favorites. Make up your own using your toddler's name in the song.	Make your own playdough by mixing 2 cups flour and 3/4 cup salt. Add 1/2 cup water and 2 tablespoons salad oil. Knead well until it's smooth; add food coloring, and knead until color is fully blended. Toddlers will love squishing, squeezing, and pounding the dough.
Playing beside or around other children the same age is fun but usually requires adult supervision. Trips to the park are good ways to begin practicing interacting with other children.	Play the "show me" game when looking at books. Ask your toddler to find an object in a picture. Take turns. Let your toddler ask you to find an object in a picture. Let him turn the pages.	Add a few Ping-Pong balls to your toddler's bath toys. Play a "pop up" game by showing your toddler how balls pop back up after holding them under the water and letting go.	Clean plastic containers with push or screw-on lids are great places to "hide" a favorite object or treat. Toddlers will practice pulling and twisting them to solve the "problem" of getting the object. Watch to see if your toddler asks you to help.	Make a book by pasting different textures on each page. Materials such as sandpaper, feathers, cotton balls, nylon, silk, and buttons lend themselves to words such as rough, smooth, hard, and soft.
	1			

## Activities for Children 24-30 Months Old



				1H
Add actions to your child's favorite nursery rhymes. Easy action rhymes include "Here We Go 'Round the Mulberry Bush," "Jack Be Nimble," "This Is the Way We Wash Our Clothes," "Ring Around the Rosy," and "London Bridge."	Play Target Toss with a large bucket or box and bean bags or balls. Help your child count how many she gets in the target. A ball of yarn or rolled-up socks also work well for an indoor tar- get game.	Wrap tape around one end of a piece of yarn to make it stiff like a needle and put a large knot at the other end. Have your child string large elbow macaroni, buttons, spoons, or beads.  Make an edible necklace out of Cheerios.	Children at this age love outings. One special outing can be going to the library. The librarian can help you find appropriate books. Make a special time for reading (like bedtime stories).	Play a jumping game when you take a walk by jumping over the cracks in the sidewalk. You may have to hold your child and help him jump over at first.
Take time to draw with your child when she wants to get out paper and crayons. Draw large shapes and let your child color them in. Take turns.	During sandbox play, try wetting some of the sand. Show your child how to pack the container with the wet sand and turn it over to make sand structures or cakes.	Add an old catalog or two to your child's library. It's a good "picture" book for naming common objects.	Give your child soap, a wash- cloth, and a dishpan of water. Let your child wash a "dirty" doll, toy dishes, or doll clothes. It's good practice for hand washing and drying.	Make "sound" containers using plastic Easter eggs or pantyhose eggs. Fill eggs with noisy objects like sand, beans, or rice and tape the eggs shut. Have two eggs for each sound. Help your child match sounds and put them back in an egg carton together.
Show your child how to make snakes or balls or how to roll out pancakes with a small rolling pin using playdough. Use large cookie cutters to make new playdough shapes.	Children at this age love to pretend and really enjoy it when you can pretend with them. Pretend you are different animals, like a dog or cat. Make animal sounds and actions. Let your child be the pet owner who pets and feeds you.	Your child will begin to be able to make choices. Help him choose what to wear each day by giving a choice between two pairs of socks, two shirts, and so forth. Give choices at other times like snack or mealtime (two kinds of drink, cracker, etc.).	Enhance listening skills by playing compact discs or cassettes with both slow and fast music. Songs with speed changes are great. Show your child how to move fast or slow with the music. (You might find children's cassettes at your local library.)	Children can find endless uses for boxes. A box big enough for your child to fit in can become a car. An appliance box with holes cut for windows and a door can become your child's playhouse. Decorating the boxes with crayons, markers, or paints can be a fun activity to do together.
Play "Follow the Leader." Walk on tiptoes, walk backward, and walk slow or fast with big steps and little steps.	Try a new twist to fingerpainting. Use whipping cream on a washable surface (cookie sheet, Formica table). Help your child spread it around and draw pictures with your fingers. Add food coloring to give it some color.	Action is an important part of a child's life. Play a game with a ball where you give directions and your child does the actions, such as "Roll the ball." Kick, throw, push, bounce, and catch are other good actions. Take turns giving the directions.	Make an obstacle course using chairs, pillows, or large cartons. Tell your child to crawl over, under, through, behind, in front of, or between the objects. Be careful arranging so that the pieces won't tip and hurt your child.	Collect little and big things (balls, blocks, plates). Show and describe (big/little) the objects. Ask your chilt to give you a big ball, then all of the big balls. Do the same for little. Another big/little game is making your self big by stretching your arms up high and making yourself little by squatting down.

## Activities for Children 30-36 Months Old



- 1				The state of the s	
	Tell or read a familiar story and pause frequently to leave out a word, asking your child to "fill it in." For example, Little Red Riding Hood said, "Grandmother, what big you have."	Teach somersaults by doing one yourself first. Then help your child do one. Let her try it alone. Make sure furniture is out of the way. You may want to put some pillows on the floor for safety.	Give a cup to your child. Use bits of cereal or fruit and place one in your child's cup ("one for you") and one in your cup ("one for me"). Take turns. Dump out your child's cup and help count the pieces. This is good practice for early math skills.	Put an old blanket over a table to make a tent or house. Pack a "picnic" sack for your camper. Have your child take along a pillow on the "camp out" for a nap. Flashlights are especially fun.	Get a piece of butcher paper large enough for your child to lie on. Draw around your child's body to make an outline. Don't forget fingers and toes. Talk about body parts and print the words on the paper. Let your child color the poster. Hang the poster on a wall in your child's room.
	Children at this age may be interested in creating art in different ways. Try cutting a potato in half and carving a simple shape or design for your child to dip in paint and then stamp onto paper.	Add water to tempera paint to make it runny. Drop some paint on a paper and blow through a straw to move the paint around the paper, or fill an old roll-on deodorant bottle with watered-down paint. Your child can roll color onto the paper.	A good activity to learn location words is to build roads and bridges with blocks. Use toy cars to go on the road, under or over a bridge, between the houses, and so forth.	Trace around simple objects with your child. Use cups of different sizes, blocks, or your child's and your hands. Using felt-tip markers or crayons of different colors makes it even more fun.	Have your child help you set the table. First, have your child place the plates, then cups, and then napkins. By placing one at each place, he will learn one-to-one correspondence. Show your child where the utensils should be placed.
	Collect empty boxes (cereal, TV dinners, egg cartons) and help your child set up her own grocery store.	Help your child learn new words to describe objects in everyday conversations. Describe by color, size, and shape (the blue cup, the big ball). Also, describe how things move (a car goes fast, a turtle moves slowly) and how they feel (ice cream is cold, soup is hot).	Make your own puzzles by cutting out magazine pictures of whole people. Have your child help glue pictures onto cardboard. Cut pictures into three pieces by cutting curvy lines. Head, trunk, and legs make good pieces for your child to put together.	Dribble different colors of paint in the middle or on one side of a paper. Fold the paper in half. Let your child open the paper to see the design it makes.	A good game for trips in the car is to play a matching game with a set of Old Maid cards. Place a few different cards in front of your child. Give him a card that matches one displayed and ask him to find the card like the one you gave him.
	Cut pictures out of magazines to make two groups such as dogs, food, toys, or clothes. Have two boxes ready and put a picture of a dog in one and of food in the other. Have your child put additional pictures in the right box, helping her learn about categories.	Cut a stiff paper plate to make a hand paddle and show your child how to use it to hit a balloon. See how long your child can keep the balloon in the air or how many times he can hit it back to you. This activity helps develop large body and eye—hand coordination. Always carefully supervise when playing with balloons.	To improve coordination and balance, show your child the "bear walk" by walking on hands and feet, keeping the legs and arms straight. Try the "rabbit hop" by crouching down and then jumping forward.	Encourage your child to try the "elephant walk," bending forward at the waist and letting your arms (hands clasped together) swing freely while taking slow and heavy steps. This is great to do with music.	Make a poster of your child's favorite things using pictures from old magazines. Use safety scissors and paste or a glue stick to allow your child to do it independently, yet safely.

## Activities for Children 36-48 Months Old



Make a book "about me" for your child. Save family pictures, leaves, magazine pictures of a favorite food, and drawings your child makes. Put them in a photo album, or glue onto sheets of paper and staple together to make a book.	Make a bird feeder using peanut butter and bird seed. Help your child find a pine cone or a piece of wood to spread peanut butter on. Roll in or sprinkle with seeds and hang in a tree or outside a window. While your child watches the birds, ask her about the number, size, and color of the different birds that visit.	Grow a plant. Choose seeds that sprout quickly (beans or peas), and together with your child place the seeds in a paper cup, filling almost to the top with dirt. Place the seeds 1/2 inch under the soil. Put the cup on a sunny windowsill and encourage your child to water and watch the plant grow.	Before bedtime, look at a magazine or children's book together. Ask your child to point to pictures as you name them, such as "Where is the truck?" Be silly and ask him to point with an elbow or foot. Ask him to show you something that is round or something that goes fast.	Play a matching game. Make two sets of 10 or more pictures. You can use pictures from two copies of the same magazine or a deck of playing cards. Lay the pictures face up and ask your child to find two that are the same. Start with two picture sets and gradually add more.
While cooking or eating dinner, play the "more or less" game with your child. Ask who has more potatoes and who has less. Try this using same-size glasses or cups, filled with juice or milk.	Cut out some large paper circles and show them to your child. Talk with your child about things in her world that are "round" (a ball, the moon). Cut the circle in half, and ask her if she can make it round again. Next, cut the circle into three pieces, and so forth.	During bath time, play Simon Says to teach your child names of body parts. First, you can be "Simon" and help your child wash the part of his body that "Simon says." Let your child have a turn to be "Simon," too. Be sure to name each body part as it is washed and give your child a chance to wash himself.	Talk about the number 3. Read stories that have 3 in them (The Three Billy Goats Gruff, Three Little Pigs, The Three Bears). Encourage your child to count to 3 using similar objects (rocks, cards, blocks). Talk about being 3 years old. After your child gets the idea, move up to the numbers 4, 5, and so forth as long as your child is interested.	Put out several objects that are familiar to your child (brush, coat, banana, spoon, book). Ask your child to show you which one you can eat or which one you wear outside. Help your child put the objects in groups that go together, such as "things that we eat" and "things that we wear."
When your child is getting dressed, encourage her to practice with buttons and zippers. Play a game of Peekaboo to show her how buttons go through the holes. Pretend the zipper is a choo-choo train going "up and down" the track.	Practice following directions. Play a silly game where you ask your child to do two or three fun or unusual things in a row. For example, ask him to "Touch your elbow and then run in a circle" or "Find a book and put it on your head."	Encourage your child's "sharing skills" by making a play corner in your home. Include only two children to start (a brother, sister, or friend) and have a few of the same type of toys available so that the children don't have to share all of the time. Puppets or blocks are good because they encourage playing together. If needed, use an egg or oven timer with a bell to allow the children equal time with the toys.	Listen for sounds. Find a cozy spot, and sit with your child. Listen and identify all of the sounds that you hear. Ask your child if it is a loud or soft sound. Try this activity inside and outside your home.	Make an adventure path outside. Use a garden hose, rope, or piece of chalk and make a "path" that goes under the bench, around the tree, and along the wall. Walk your child through the path first, using these words. After she can do it, make a new path or have your child make a path.
Find large pieces of paper or cardboard for your child to draw on. Using crayons, pencils, or markers, play a drawing game where you follow his lead by copying exactly what he draws. Next, encourage your child to copy your drawings, such as circles or straight lines.	When reading or telling a familiar story for bedtime, stop and leave out a word. Wait for your child to "fill in the blank."	Make a necklace you can eat by stringing Cheerios or Froot Loops on a piece of yarn or string. Wrap a short piece of tape around the end of the string to make a firm tip for stringing.	Listen and dance to music with your child. You can stop the music for a moment and play the "freeze" game, where everyone "freezes," or stands perfectly still, until you start the music again. Try to "freeze" in unusual positions for fun.	Make long scarves out of fabric scraps, old dresses, or old shirts by tearing or cutting long pieces. Use material that is lightweight. Hold on to the edge of the scarf, twirl around, run, and jump.

## Activities for Children 48-60 Months Old



Play the "who, what, and where" game. Ask your child who works in a school, what is in a school, and where is the school. Expand on your child's answers by asking more questions. Ask about other topics, like the library, bus stop, or post office.	When you are setting the table for a meal, play the "what doesn't belong" game. Add a small toy or other object next to the plate and eating utensils. Ask your child if she can tell you what doesn't belong here. You can try this game any time of the day. For example, while brushing your child's hair, set out a brush, barrette, comb, and a ball.	'Let your child help prepare a picnic. Show him what he can use for the picnic (bread, peanut butter, and apples). Lay out sandwich bags and a lunch box, basket, or large paper bag. Then go have fun on the picnic.	On a rainy day, pretend to open a shoe store. Use old shoes, paper, pencils, and a chair to sit down and try on shoes. You can be the customer. Encourage your child to "write" your order down. Then she can take a turn being the customer and practice trying on and buying shoes.	Play the "guess what will happen" game to encourage your child's problem-solving and thinking skills. For example, during bath time, ask your child, "What do you think will happen if I turn on the hot and cold water at the same time?" or "What would happen if I stacked the blocks to the top of the ceiling?"	
Play "bucket hoops." Have your child stand about 6 feet away and throw a medium-size ball at a large bucket or trash can. For fun outdoors on a summer day, fill the bucket with water.	Write your child's name often. When your child finishes drawing a picture, be sure to put his name on it and say the letters as you write them. If your child is interested, encourage him to name and/or to copy the letters. Point out the letters in your child's name throughout the day on cereal boxes, sign boards, and books.	Invite your child to play a counting game. Using a large piece of paper, make a simple game board with a straight path. Use dice to determine the count. Count with your child, and encourage her to hop the game piece to each square, counting each time the piece touches down.	Make a person with playdough or clay using sticks, buttons, toothpicks, beads, and any other small items. Start with a playdough (or clay) head and body and use the objects for arms, legs, and eyes. Ask your child questions about his person.	Encourage your child to learn her full name, address, and telephone number. Make it into a singing or rhyming game for fun. Ask your child to repeat it back to you when you are riding in the car or on the bus.	
Cut out three small, three medium, and three large circles. Color each set of circles a different color (or use colored paper for each). Your child can sort the circles by color or by size. You can also ask your child about the different sizes. For example, ask your child, "Which one is smallest?" Try this game using buttons removed from an old shirt.	Go on a walk and pick up things you find. Bring the items home and help your child sort them into groups. For example, groups can include rocks, paper, or leaves. Encourage your child to start a collection of special things. Find a box or special place where he can display the collection.	Play a picture guessing game. Cover a picture in a familiar book with a sheet of paper and uncover a little at a time until your child has guessed the picture.	Let your child help you prepare a meal. She can spread peanut butter and jelly, peel a banana, cut with a butter knife, pour cereal, and add milk (using a small container). Never give her a task involving the stove or oven without careful supervision.	"Write" and mail a letter to a friend or relative. Provide your child with paper, crayons or pencil, and an envelope. Let your child draw, scribble, or write; or he can tell you what to write down. When your child is finished, let him fold the letter to fit in the envelope, lick, and seal. You can write the address on the front. Be sure to let him decorate the envelope as well. After he has put the stamp on, help mail the letter.	
Play "circus." Find old, colorful clothes and help your child put on a circus show. Provide a rope on the ground for the high wire act, a sturdy box to stand on to announce the acts, fun objects for a magic act, and stuffed animals for the show. Encourage your child's imagination and creativity in planning the show. Don't forget to clap.	Take a pack of playing cards and choose four or five matching sets. Lay the cards out face up, and help your child to find the pairs. Talk about what makes the pairs of cards the "same" and "different."	Make bubbles. Use ½ cup dishwashing liquid (Dawn or Joy works best) and 2½ cups water. Use straws to blow bubbles on a cookie sheet. Or make a wand by stringing two pieces of a drinking straw onto a string or piece of yarn. Tie the ends of the string together to make a circle. Holding onto the straw pieces, dip the string in the bubble mixture. Pull it out and gently move forward or backward. You should see lovely, big bubbles.	Make a bean bag to catch and throw. Fill the toe of an old sock or pantyhose with 3/4 cup dry beans. Sew the remaining side or tie off with a rubber band. Play "hot potato" or simply play catch. Encourage your child to throw the ball overhand and underhand.	Pretend to be an animal. Encourage your child to use her imagination and become a kitty. You can ask, "What do kitties like to eat?" or "Where do kitties live?" Play along, and see how far the game can go.	

## Activities for Children 60-66 Months Old



AND THE RESERVE OF THE STATE OF	- THE STATE OF THE			
Make a nature collage. Collect leaves, pebbles, and small sticks from outside and glue them on a piece of cardboard or stiff paper. (Cereal and cracker boxes can be cut up and used as cardboard.)	Practice writing first names of friends, toys, and relatives. Your child may need to trace the letters of these names at first. Be sure to write in large print letters.	Encourage dramatic play. Help your child act out his favorite nursery rhyme, cartoon, or story. Use large, old clothes for costumes.	Play simple ball games such as kickball. Use a large (8″–12″) ball, and slowly roll it toward your child. See if your child can kick the ball and run to "first base."	When reading stories to your child, let her make up the ending, or retell favorite stories with "silly" new endings that she makes up.
Let your child help you with simple cooking tasks such as mashing potatoes, making cheese sandwiches, and fixing a bowl of cereal. Afterward, see if he can tell you the order that you followed to cook and mash the potatoes or to get the bread out of the cupboard and put the cheese on it. Supervise carefully when your child is near a hot stove.	Play "20 Questions." Think of an animal. Let your child ask 20 yes/no questions about the animal until she guesses what animal it is. (You may need to help your child to ask yes/no questions at first.) Now let your child choose an animal and you ask the 20 questions. You can also use other categories such as food, toys, and people.	You can play "license plate count- up" in the car or on the bus. Look for a license plate that contains the number 1. Then try to find other plates with 2, 3, 4, and so forth, up to 10. When your child can play "count-up," play "count-down," starting with the number 9, then 8, 7, 6, and so forth, down to 1.	Practice pretend play or pantomime. Here are some things to act out: 1) eating hot pizza with stringy cheese; 2) winning a race; 3) finding a giant spider; 4) walking in thick, sticky mud; and 5) making footprints in wet sand.	Make a simple concentration game with two or three pairs of duplicate playing cards (two king of hearts), or make your own cards out of duplicate pictures or magazine ads. Start with two or three pairs of cards. Turn them face down and mix them up. Let your child turn two cards over to see if they match. If they don't, turn the cards face down again. You can gradually increase to playing with more pairs of cards.
Make an obstacle course either inside or outside your home. You can use cardboard boxes for jumping over or climbing through, broomsticks for laying between chairs for "limbo" (going under), and pillows for walking around. Let your child help lay out the course. After a couple of practice tries, have him complete the obstacle course as quickly as possible. Then try hopping or jumping the course.	After washing hands, practice writing letters and numbers in pudding or thinned mashed potatoes spread on a cookie sheet or cutting board. Licking fingers is allowed!	Play mystery sock. Put a common household item in a sock. Tie off the top of the sock. Have your child feel the sock and guess what is inside. Take turns guessing what's inside.	Make color rhymes. Take turns rhyming a color and a word: blue, shoe; red, bed; yellow, fellow. You can also rhyme with names (Dad, sad; Jack, sack). Take turns with the rhyming.	Make an "I can read" poster. Cut out names your child can read—fast-food restaurant names, names from cereal cartons, and other foods. You can write your child's name, names of relatives, and names of friends on pieces of paper and put them on the poster. Add to the poster as your child learns to read more names.
Play "what doesn't belong?" Let your child find the word that doesn't belong in a list of six or seven spoken words. The one that doesn't belong can be the word that doesn't rhyme or the word that is from a different category. Some examples are 1) fly, try, by, coat, sigh, my; 2) Sam, is, ram, am, spam, ham; 3) red, orange, purple, green, yellow, beetle; 4) spoon, fork, shirt, pan, spatula, knife. Have your child give three to four words with one that doesn't belong.	Play the "memory" game. Put five or six familiar objects on a table. Have your child close her eyes. Remove one object, and rearrange the rest. Ask your child which object is missing. Take turns finding the missing object.	Make puppets out of ice cream sticks, paper bags, socks, or egg carton cups. Decorate the puppets with yarn, pens, buttons, and colored paper. Make a puppet stage by turning a coffee table or card table on its side. Be the audience while your child crouches behind the table and puts on a puppet show.	Play the old shell game. Get four cups or glasses that you cannot see through. Find a small ball, object, or edible item such as a raisin or cracker that fits under the cups. Have your child watch as you place the object under one of the cups and move all of the cups around. Have your child try to remember which cup the object is under. Have your child take a turn moving the objects while you guess.	Play "mystery sound." Select household items that make distinct sounds such as a clock, cereal box, metal lid (placed on a pan), and potato chip bag. Put a blindfold on your child and have him try to guess which object made the sound. Take turns with your child.

# Tips for Travel with Children 3-5 Years Old

### Things to Consider

- A car seat (as required by law). A car seat may be available from CASA or you can be reimbursed.
- You may want to put a towel under and around the car seat to protect your car seat.
- ➤ Little children often get hungry/thirsty at the most inconvenient times. It is possible they me be hungry when you pick them up. Before leaving for a visit check in with caregiver regarding the routines that have occurred before the visit so you can be prepared for the child's needs/behaviors.
- ➤ A tote bag containing the following:
  - Sunscreen and child's sunhat
  - o Moist towellets: toilet paper
  - o Crayons, coloring book, pencil, paper
  - o A small rubber ball for playing in the park or beach
  - o Age appropriate books. You can rotate them from the library at the CASA house or the public library.
  - o Snacks like bottled water, gold fish crackers, raisins etc.
  - o Change of clothing provided by the caregiver.
  - o First aid kit
  - o Cash in small bills or quarters
  - o Emergency numbers for child's caregivers, doctor and dentist.
- ➤ A bathroom intermission: taking the child to the bathroom can be a challenge when you are out and about, especially if you and the child are not the same gender. If you come across this challenge let your supervisor know and you can come up with a game plan for next time. Local places to use the bathroom:
  - o The CASA house
  - Public Libraries
  - o Target or local groceries stores such as Nob Hill
  - o Coffee shops
  - o The Capitola Mall

\*If you need a car seat or booster seat contact your Advocate Supervisor.\*



California's Child Passenger Safety Seat Laws You Need to Know

- ➤ SB 929-Current law from 2012: Children who are under 8 years old OR 4'8" and under must be properly secured in the back seat of the vehicle and in an appropriate child passenger restraint system meeting applicable federal motor vehicle safety standards.
- Children who are 8 years old OR have reached 4'9" in height must be secured by a safety shoulder and lap belt and sit in the back seat of the vehicle.
- ➤ AB 53 (NEW & Starts 1/1/2017 in California): Children who are 2 years old and under, must be secured in rear-facing child passenger restraint seat in the back seat of the vehicle, which meets federal standards. Unless the child weighs 40 or more pounds, OR is 40 or more inches tall.

Info on AB 53: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\_id=201520160AB53

#### RECOMMENDED RESOURCES

1. California Highway Patrol (CHP) Car Seat Inspection & Installation By Appointment:

(831) 662-0511, Monday-Friday 8AM-5PM

10395 Soquel Drive, Aptos, CA 95003

- CHP Proper Seat Installation Online Clips (All Ages): https://www.chp.ca.gov/ResearchAndPlanningSectionSite/Pages/Child-Safety-Seat-Videos.aspx
- 3. American Academy of Pediatrics Orange County Chapter (Age, Weight, & Height Guidelines for Car Seats & Booster Seats from birth to age 12 years of age): http://ockeepkidssafe.org/cps-pdf/The-Right-Seat-English-2010.pdf

# The Right Seat

# Fits the Child • Fits the Vehicle • Is Used Correctly on Every Trip

# Rear Facing Infant and Convertible Seats

- Never in front of an airbag
- Rear facing to upper weight or height limit
- Harness snug at or below shoulders
- Chest clip at armpit level
- Attach to car with seat belt or lower anchors
- Add nothing to or behind harness
- Rear facing 5 times safer between ages 1 and 2 years



# Forward Facing Seats

- Up to 40-65 or 80 pounds
- Lower anchors to 40-48 pounds
- Harness snug at or above shoulders
- Chest clip at armpit level
- Attach to car with top tether strap and seat belt or lower anchors
- Use a 5-point harness to upper weight or height limit of seat



# **Booster Seats**

- Until 4' 9" and 8 -12 years
- Always use lap/shoulder seat belt
- Never put shoulder belt behind back or under arm
- Use highback booster for vehicle seat without headrest



# Adult-Size Seat Belts

- Back straight against vehicle seat, and knees bent at seat edge
- Shoulder belt across chest, not neck or throat
- Lap belt low and snug across upper thighs, not stomach
- Children younger than 13 should always ride in the back seat



Always read car seat and vehicle manuals for specific directions



