

# **The Importance of Early Childhood**

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Mililani Sunrise Rotary Club  
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Aloha and good morning!

I am here this morning to talk with you about the critical importance of the early childhood years. I am not a professional in early childhood development—I am a parent and a YMCA leader who has spent some time learning about the early years because they are so important.

After looking at many of the issues that have an impact on our society, I am convinced that one of the most important things that we can do is to make sure that our children get what they need during their early years of life. For the most part, what they need is *us*—our love and attention as parents, aunts and uncles, grandpas and grandmas, and caregivers.

I want to focus on how to enjoy children and help them grow during their early years—birth to five years of age. These are exciting years.

Research over the past 30 years has revealed that babies are incredible learning machines. Here is a paragraph from a book titled *The Scientist in the Crib: Minds, Brains, and How Children Learn*.

“Walk upstairs, open the door gently, and look in the crib. What do you see? Most of us see a picture of innocence and helplessness, a clean slate. But, in fact, what we see in the crib is the greatest mind that has ever existed, the most powerful learning machine in the universe. The tiny fingers and mouth are exploration devices that probe the alien world around them with more precision than any Mars rover. The crumpled ears take a buzz of incomprehensible noise and flawlessly turn it into meaningful language. The wide eyes that sometimes seem to peer into your very soul actually do

just that, deciphering your deepest feelings. The downy head surrounds a brain that is forming millions of new connections every day. That, at least, is what thirty years of scientific research have told us.

According to the authors, Gopnik, Meltzoff, and Kuhl, this view of babies is almost totally different from the view that psychologists and scientists had as recently as 30 years ago. The authors themselves are pioneers in the field, going back to the late 1970's. They report that psychologists and scientists back then thought that babies were born with only a few reflexes and were not much more than animate vegetables—carrots that could cry.

Babies can't talk when they are born, so people thought that babies couldn't think, either. But as more women and mothers became scientists, and more male scientists began taking care of their own babies, they began to see things that suggested that babies can in fact think. When it became possible to videotape the behavior of babies, scientific research began. Study after study, replicated across the country and around the world, has now made it clear that babies can think, and in fact are very busy learning long before they can use words to tell us about it.

The authors say that babies are very much like scientists. They have an idea, a kind of theory, and they test it out—they experiment. When the experiment shows something new, they revise their theory, and experiment again. That is why a 3-month-old, a 1-year-old, and a 3-year-old see the world differently. They have been testing, revising, and reprogramming themselves as they learn and grow.

The authors point to three sources of learning: First, children are born already knowing quite a lot, because of their genetic codes; second, they are extraordinary learning machines that solve very difficult visual and language problems in only a few years; and third, they have parents and caretakers who are designed to help them learn.

So babies have a lot to do—a lot to touch, hear, smell, taste, and see. That's how they learn. Playing with them is fun because they are cute, and they are fascinating. One thing that is fascinating is the way they imitate adults.

Toddlers are busy, too. They become mobile and develop their muscular coordination. They toddle and they talk. We tend to hear “Mama” and “Dada” as their first words, even if they have already said dozens of other things that we didn’t recognize because we were hoping to hear “Mama” or “Dada” first. It is fun to play with toddlers and see the world in new ways through their eyes.

When you talk, sing, hug, and play with a baby or toddler, you’re *both* having fun. But what you are doing is serious— you are helping the baby and toddler to grow. The everyday things that we do to nurture children, also help them learn about other minds, physical objects, and language. So playing is fun, but it has serious benefits.

One of the astonishing things that happens during the first five years of life is brain growth. The brain begins growing while the baby is in the womb, and grows dramatically in physical size as well as internal complexity during the first five years of life. At birth, the brain weighs only 25% of its eventual adult weight. It triples in size during the first year after birth, and grows to its full size sometime around age 5.

One of the oldest debates is over the comparative influence of nature and nurture on our development as human beings. Certainly, brain development is influenced by both nature and nurture— probably in equal amounts. Scientists think that nature— genetics— determines the number of neurons and the *sequence of events* in brain development. Nurture— the environment— shapes the structure and *quality* of brain development.

There are five stages in brain growth. First, neurons or nerve cells are generated in the brain. This is followed by the generation of synapses, or connections between nerve cells. Next comes the pruning process, during which synapses that haven’t been used are lost. Then there is the process of myelination during which the axons of the neurons are insulated to promote proper information flow. Finally, synapses are added later in life as the result of new learning.

Neurons are the basic building blocks of our brains. Each of us has about 100 billion neurons. At birth, only some of the neurons in a baby’s brain have already been hard-wired— those that control breathing, the heartbeat, body temperature, and reflexes. But there are so many neurons,

that there aren't enough genes to specify every synapse in order to complete the wiring of the brain.

Billions of neurons in the brain are not yet programmed at birth. This is where nurture comes in. These neurons connect to each other in response to external stimuli. The brain's physical structure and capacity is shaped by the child's experiences. The wiring of each person's brain is thus a little different because we each have different experiences.

Synapses connect the neurons. Each neuron in the brain's cortex can have as many as 15,000 synapses. There is explosive growth in the number of synapses. Between two months of gestation and two years after birth, the brain is generating 1.8 million synapses *per second*. By the age of two, the number of synapses or connections in a child's brain reaches adult levels. By the age of three, a child's brain may have 1,000 trillion synapses— or one quadrillion synapses— which is about twice as many as the child's pediatrician.

This “overproduction” of synapses makes it easy for the child's brain to respond to new experiences. The brain is malleable and adaptive. In fact, the brain continues to re-program itself. The child's experimenting and testing results in new brain structures. Later on, the synapses that are not used are selectively pruned away to make the brain more efficient.

Children lose approximately 20 billion synapses *per day* between childhood and adolescence. By the time a child reaches late adolescence, half of all the synapses in the brain have been discarded. This synaptic refinement makes our mental processes more streamlined and coherent. This is a good thing, if the synapses that are retained are high quality. And that depends to a great extent on us as parents and caregivers, because the stimulation that a child receives during the early years affects which synapses are retained.

There are some exciting, positive national campaigns and organizations that are focused on the importance of the first three years of life. While these are critical years, not all brain development occurs during the first three or even five years. The frontal lobes, which involve judgment and wisdom, are still developing during the teen years. And we all know that adults continue to learn. When adults learn new ideas or skills, the brain adds synapses to support the new learning. The brain is not as malleable in

later years, but new learning can still take place. It is never too late to learn and grow.

Because it is never too late to learn and grow, it is never too late to help a child of *any* age. But there are some critical periods during which certain types of brain growth need to occur. These critical periods relate to vision and language acquisition. If a child's eyes or ears don't function properly, the brain will not be receiving the stimuli it needs for visual and language development.

If the mother smoked, drank, or used drugs during pregnancy, the damage to the baby's brain can be anywhere from modest to devastating, and much of the damage can be permanent. However, except for babies born with specific disabilities, every baby is born with a chance to learn and grow in a healthy and balanced way. What happens to the child during the early years significantly influences the structure and content of his or her brain, and how he or she will end up later in life. That means that what happens to each child depends a lot on us as adults—how we nurture and stimulate our children.

Fortunately, stimulating proper growth and development in young children is something that any loving parent or caregiver can do. It doesn't require advanced or technical training to have a positive impact on a young child. You don't need any special "enrichment" tools or programs. *You* are the primary enrichment program. You just need to be willing to spend time interacting with your child.

To develop to their fullest potential, young children need a normal environment and caring adults who will hold them, talk to them, sing to them, and play with them. Any parent or caregiver can hug a child, talk with a child, sing to a child, and play with a child. It is fun for both you and your child.

Any parent or caregiver can expose a child to a variety of sights and sounds. Any parent or caregiver can help a child touch and explore things of different sizes, shapes, colors, and textures. Any parent or caregiver can play music for a child, walk with a child, play catch with a child. These are the simple kinds of activities that help your child grow.

In short, what we can do is all the things that we enjoy doing with young children. What we can do is all the things that come natural to us. As one group of scientists has said, “it is in our nature to nurture.” We just have to remember to take the time to enjoy our children.

If there is anything to worry about, it is those critical periods. To avoid problems, we need to make sure that our children have normal eye functions. We need to make sure they can hear properly. We need to get them to the doctor for regular medical check-ups, and we need to make sure they get proper nutrition— a balanced diet, with a daily multivitamin.

Children deprived of normal environments and caring adults can receive insufficient stimulation. This deprivation early in life can have long-lasting negative impacts on children. The goal is to make sure that children do not suffer deprivation in their early years.

However, we shouldn’t try to overdo it. Flash cards and Mozart tapes and super enrichment tools or activities probably do not make a difference. Too many toys or too much music or noise may cause a young child to be confused instead of enriched. Also, a baby who is overwhelmed with stimulation may “shut down.” When that happens, too much stimulation can ironically result in too little stimulation. We shouldn’t force a child’s development. Young children, like adults, need times of quiet and rest. You can take your cues from the baby or toddler— when they tire, let them relax or sleep.

There are many organizations that work with parents and families in raising babies and young children. The YMCA is one of those organizations. The YMCA’s Parent-Child Programs serve approximately 1,600 parents and young children each year throughout all nine branches on Oahu.

We know that children learn and grow faster and better when exposed to a variety of environments and activities. Parents can provide variety within the home— even placing a familiar toy in a different room or moving it up onto the kitchen table can create a new experience for an infant. Taking infants and toddlers on excursions to a park, a library, a store, or a friend’s house can result in more rapid brain development than would occur by staying at home. Children need to be exploring, discovering, pondering, and re-ordering their views of the world based on their new experience. YMCA

programs are designed to expose children to new environments and activities.

YMCA programs are also designed to provide parents and children with things to do together. Research emphasizes the importance of developing trust, self-control, and motivation during the early years. Stable, loving relationships with adults can result in children having fewer behavior problems in school, more confidence, and more positive social relationships with other children. The YMCA creates times and places and activities so that parents and children can be together.

The leading expert on early childhood development in the YMCA in Honolulu is here this morning—Debbie Bickell. Debbie has designed and built parent-child programs at the Nuuanu YMCA, and has recently become the Executive Director of the West Oahu/Mililani YMCA. She is a tremendous resource for our organization and the larger community.

The Nuuanu Branch has three Parent-Child Programs for children aged 6 months to kindergarten. The three programs are (1) Kindergym, (2) Movin' On!, and (3) Parent/Tot Swim. These programs serve approximately 200 children each year at the Nuuanu Branch. The Mililani Branch also has the Parent/Tot Swim.

- *Kindergym* is for children aged 6 months to 3 years and their parents. It provides parents the opportunity to play with their children, exposing them to new equipment and skills, while encouraging social skills. It also provides parents the opportunity to meet and share with other parents who have children the same age as their own.
- *Movin' On!* is for children aged 20 months through 4 years and their parents. The focus is on movement education, sports skills, and fitness. It introduces the children and their parents to social and physical skills in a structured class environment.
- *Parent/Tot Swim* is for children 6 months to 3 years and their parents. The program promotes water enrichment and aquatic readiness activities for children and their parents. This is a great way for parents and children to “bond.” Skills are developed

around five main components: personal safety, personal growth, stroke development, water sports/games, and rescue.

In addition to Parent-Child Programs, the Nuuanu Branch offers programs for young children without their parents. For example: (a) Tumbling for 3-to-5 year olds; (b) Preschool swim lessons for 3-to-5 year olds; (c) Kid's Club for children 18 months to 3 years old; (d) PALS (Play and Learn Skills) for 3-to-4 year olds; and (e) Count Down to Kindergarten for 4-to-5 year olds. I know that Debbie will be building some of these programs at the Mililani Branch as well.

In conclusion, helping a child grow during his or her early years is a fun, natural process that can change the child's life and give new meaning to your own. Whether you are a parent, auntie or uncle, grandpa or grandma, friend or YMCA staff member, being with babies and toddlers can be one of the great joys of your life. We at the YMCA wish everyone that joy!

Thank you!