

Smart From The Start

An Article from Dallas Child

by Gretchen Sparling

Is the blueprint for future brain development set during the 0-to-3-year period?

You've bought your bundle of joy home and now what? Time to start planning for Harvard, right? Among the fury of emotions (and hormones) we experience soon after becoming parents, there is an overwhelming desire to make sure we are doing everything possible to give our children the best advantages – but how soon can you start training their minds? Some experts say from day one.

You probably didn't know it, but a group of smart scientists are sitting in a Manhattan high-rise plotting a better future for your little cherub. Children's Progress (a research group located at Columbia University and at the forefront of education assessment) focuses on early education – and they are partnering with an infant-based program here in Dallas.

PlayWisely, a curriculum and pioneering developmental play system for little ones ages four months to 3 years, serves as a potential mechanism to jump start a child's intellectual and athletic foundation – something that may prove to help children learn more efficiently during their formal education, says Dr. Chris Camacho, director of science and research at Children's Progress.

A new concept? No. But, surprisingly, it's an area of science that is gaining momentum.

A Hunger for Knowledge

More than a decade of research highlights the revolutionary processes occurring in babies' brains from ages 0 to 2. According to 2007 report, "The Science of Early Childhood Development: Closing the Gap Between What We Know and What We Do," released by Harvard University's National Scientific Council, babies are born with a "self-initiated, in-born drive toward competence". At the wheel of this drive: Neurons, or brain cells, that are wired by genetics, experience and environment, says the report. It's the latter two – or the baby's interaction with his caregivers – that can have a profound effect on the child's later learning ability, writes Dr. William Sears, author of 30 books on childcare.

Dallas mom of three and former All American gymnast Patty Hannan says she was overwhelmed by the amount of research supporting the early education of infants, and she decided to find a way to bring the "lab to the living room".

And where there's a will, there's certainly a way: Hannan built off of her work with NASA on human performance research and studied under a Dallas area neurologist. Culminating nearly 20 years of research (and her own mommy know-how), Hannan applied for a patent for her method and launched PlayWisely, a weekly, 30-minute program for babies (up to age 3) and their parents.

And, Hannan's techniques have researchers (and educators around the world) standing at attention. "We are looking to track the success of infants who go through the PlayWisely courses, so we can assess the benefits and have a better idea of how the foundation of a sound body and mind (in an infant) translates into later education", Camacho says.

The core of the PlayWisely curriculum goes back to the basis of newborn neurons. Hannan says that it's not about teaching your baby the ABCs and 123s per se. "It's about wiring the neurosensory skills that will allow these skills to be learned efficiently," says Hannan.

For parents, this means playtime – something you might not associate with serving up a platter of baby brain food. Every new baby needs social, motor and language experience as early as day one, says Dr. Van Miller, pediatric neurologist at Presbyterian Hospital of Dallas. But why?

Think of your baby's brain like a sponge – a neuron-infused sponge – with lots of loose ends that are searching to make connections to other cells. These connections, or neural networks, help speed the processes of a baby's mind, making it easier for them to advance from a basic task to a more challenging one, according to Harvard's National Scientific Council's report.

So how can a parent enhance the process of wiring these critical connections? First and foremost, an infant needs a safe and secure environment, which is easy to achieve by holding your baby and verbally soothing your child, Hannan says. A baby will feel much less stress when the parent is calm.

Learning begins with a baby orienting herself in the environment, which includes using the visual, auditory and "feeling" senses, Hannan explains.

To stimulate these early visual and auditory senses, Hannan developed an animated system in which she uses flashcards that "grab the child's attention and removes excess noise". It's all a part of her "Directionality Method". Devised to create innovative play techniques to enhance learning and movement at each developmental stage.

Parents can do this in a more ad-lib fashion, of course. Start by switching off the TV or making sure that baby has a neutral environment with reduced visual and auditory noise. Then, try placing a toy or object in front of the child and let her follow it with her eyes.

As development progresses, the goal is to continue challenging the baby. Now, you might place the toy under a cloth napkin or play traditional game of peek-a-boo. These activities help the baby develop her vision and depth perception, Hannan says. But more importantly the infant is learning how to focus (a priceless lesson for youngsters in a world where Attention Deficit Hyperactivity Disorder is on the rise). Think of it this way: "If you're showing a baby a toy with color, they're not learning the color, they're learning to see the color", Hannan says.

Talk is not cheap at this stage. Even though you may think your baby is too young to benefit from conversation, chat it up (singing is great, too). The auditory senses will start to recognize patterns in noises, such as the pronunciation of letters. The neurons will begin weaving a web that's adept to language development, Hannan explains. Additionally, adds Miller, everyday interactions such as reading help the child delete unnecessary connections in the brain.

"Wait a second", you might say. "I thought we should build these connections?"

A baby's brain has millions of neurons that make various unnecessary connections. "A baby's brain over wires itself" says Miller. "Experiences (via their senses) help them delete unnecessary connections, thus cleaning out their brain". And, he adds, a clean brain is a more efficient brain.

In other words, the more the infant has organized interaction with his environment, the more neurological connections he is able to develop, reports Sears.

Born to Play (Sports)

Not only do these neural networks build a foundation for your child's cognitive development, they also propel a sense of self and balance, which adds to her athletic foundation. Moving forward, backward, up or down requires a vast amount of neurological networks (even when crawling). Babies seek to orient themselves in their world upon birth, says Hannan, and this involves discovering their limbs, gravity, their own body axis and later, how to move and interact with the world – something her program hones in on.

Parents can stimulate the development of a child's motor skills by giving a newborn lots of tummy time and providing challenges like making the baby reach for their food. "Let the baby crawl around over pillows or on (safe) uneven surfaces", says Hannan. "Let her curiosity drive her desire to move and explore her surroundings".

The neural networks will weave together a foundation of motor skills and body confidence that could possibly give the child a basis for athletic development – just like the way teaching addition can lead to the more complex understanding of multiplication.

Additionally, Hannan says, "The sense of self that babies gain can make them more confident. It's not about creating a baby genius, but sharpening and building neural networks that your child will continue to fall back upon later in her life."

Research Playing Catch Up

One thing is certain – there is controversy over whether or not toys or products can make your baby smart. According to Sears, toys are merely icing on the brain-building cake. "your relationship with your baby is the real cake", he claims.

But, you might wonder, am I interacting correctly and doing all the right techniques? Is there a science to play? This is where a road map might make things easier for parents. "What's truly unique about Hannan's perspective is that she is building a foundation for both baby's body and mind- this is something that stands out among the sea of products and teaching material", says researcher Camacho.

"The field of neurological science is looking to uncover the overall effectiveness of this approach (tying body to mind)", he says. "This concept is highly under-researched, yet could potentially prove to be a way to form a foundation for a child to later build off of". Despite the lack of research, Miller says that any hands-on activity performed on a regular basis with your infant will add depth to their growing intellect.

"There are lots of trendy items out there for parents – the approach isn't questioned because experience is how babies learn", Miller says. "Sometimes (the products or programs) can overcomplicate what babies need, which is simple, an attentive parent who plays, reads, talks and sings to them."

But, he adds, "Supplementing your at-home parenting with classes or enriching both their mind and body can only help your baby. Any exposure is good exposure.", he says. "But don't be disappointed if they don't learn or master a skill that's higher level than what's recommended for their age".

What Happens After Age Three?

It's never too late to start using purposeful play techniques with your child, even if they're 7 years old (and denounces the idea of homework). According to The National Scientific Council, children's brains are "constructed through an ongoing process that begins before birth and continues into adulthood".

Hannan suggests letting your child lead the way. Listen and watch carefully to see what your child is interested in. Then, she says, help support his interest and take an active role by incorporating play into his passion. "If your child likes playing baseball, get out there and throw a ball with him." She says. "Feed him books about baseball history and talk to him about players." But if wiring the neurosensory and body confidence skills is proven to strengthen a baby's intellectual and athletic foundation, the 7 year-old could be throwing a mean fastball.

In the meantime (while researchers play catch-up), parents should keep an optimistic eye on their young one and have fun with their child. "Children are resilient", Hannan says. "Just plant the seed [of knowledge]; water it, and then stand back and watch it grow".