SUPER-CHARGE YOUR BABY?

Hundreds of toys promise to help babies read, learn, do math and walk earlier than expected—many without scientific backing

By Erik Vance
WHEN SETH POLLAK’S SON WAS A YEAR OLD, ERIK AND HIS WIFE, Jenny Saffran, took a trip to the Babies “R” Us store near their home in Madison, Wis. They wanted to buy a teething ring—nothing special, just a frozen band to numb the baby’s gums. Passing through the bears and bicycles, they found the correct display. They pulled a price package off the shelf, which read, “Promotes oral motor and language development.”

The couple had never heard of oral motor development, but it sounded important. Typical parents—worried about their child falling behind—might have bought the product without thinking. But Pollak and Saffran are not typical parents. “My wife is one of the world’s leading experts in language development, and we are both Ph.D.s in developmental psychology,” Pollak confesses. “We are looking at this, and we’re like, ‘What the hell? How in the world does chewing on a cold thing promote language?’

There is little evidence to say it does. And the claim is just one example of the disconnect between the research and marketing of child development. Every parent wants his or her baby to have an early jump on life. Shouldn’t toys be part of that? If your baby plays with the right gizmos during the right developmental window, the sales pitch goes, she or he can become an early reader, more successful than other babies.

The greatest benefit from play comes from interacting with another human being, so parents should be present and not stress out. ing rapidly, according to research firm Technavio. Exerts say that is because of a deep insecurity in American parents. Has their daughter breast-fed too long? Not long enough? Is their son in the right preschool? If babies are not crawling, walking, talking, reading and even doing math early, then they are doing it late.

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Although scientists are fervently trying to understand how the human brain develops and how to help babies and toddlers who are typically developmentally or socially lagging, many toy makers seem to suggest you can supercharge the average kid. Are there any findings that might support these claims?

EARLIER IS NOT BETTER

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Marketing to parents’ anxieties begins the moment they are pregnant. Some expectant parents must carefully manage nutrition, vitamins and stress for fear that any mistakes might have lasting effects on their children. All costs of pregnancy needs the proper music. That’s right: the fast track to a prized life starts with music in the womb. There are a number of products that come with speakers that attach to a woman’s belly to play music. One gadget, Babypod, goes a step further: it is a bulb-shaped silicone speaker that is inserted inside the woman’s vagina. The product site says, “Our initial hypothesis suggests that music creates a response which manifests as vocalisation movements, as it activates the brain circuits that stimulate language and communication, or written words, begins learning in utero.”

It is true that babies learn while in the womb and that music is enriching to young children. But there is no evidence that music enriches a fetus. The creators of Babypod published a paper in the British Medical Ultrasound journal. In the study, they showed that fetuses reacted more strongly to their mother’s voice than to external speakers, but it does not conclude that the reactions were positive or that this strategy translated into smarter children.

“I know of nothing out there that says that this stimulation does anything for your baby,” says Kathy Hirsh-Pasek, a developmental psychologist at Temple University and president of the International Congress of Infant Studies. Babies didn’t respond to the music in the study.

Hirsh-Pasek specializes in language acquisition in babies, which is a huge research area and a rich teething ring for claim makers. She says she displays her least favorite toys marketed to anxious parents on a wall in her office. Speaking is perhaps a baby’s most important milestone and is tied to later cognition and working memory. Studies show that babies and young children have certain age windows during which these abilities blossom. Some evidence suggests that how quickly babies learn new words predicts later pro-

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charge their baby to boost his or her long-term abilities. At least, that is what David Barner says. And he should know; he tried like crazy to supercharge his daughter.

Barner is an expert in the development of math education for children. He knows math learning is important for cognition and life skills. So he knew his two-year-old daughter to be a math whiz. He was never great at math himself—but both he and his wife preferred a career in reading—but he saw its value. So for months, he spent time each day quantizing his child using products that utilize flash cards, videos, games and books to teach math to toddlers and preschoolers.

In the end, although he delighted in watching a young mind absorb math in real time, that is pretty much all he got, while his daughter developed a distaste for math. True passion and skill? Reading, of course.

Speaking with his professional hat on, Barner thinks parents have less impact on their kids than “things like who your friends are, what school you go to, whether you have access to good resources.” Many analyses, such as an ongoing University of Minnesota study with separated twins, also show that personality and proclivities are surprisingly heritable.

Barner’s work has revealed that many kids between three and five who can count and even seem to do simple addition do not actually comprehend the principles of numbers. But some memorized tricks to get the right answers. Although U.S. toddlers are intensely trained to count, they are quickly passed in math skills by children in Asia.

GOING FOR GOLD

NOT ALL MATHS

WHAT A DIFFERENCE A YEAR MAKES!

Adolph knows there is another key difference between movement and cognition: the parents she sees in the laboratory are far less worked up about motor learning in their babies, which corresponds to the toy market as well. No one is selling Baby Can Backflip. Some products, such as little pushchairs and walkers, promise to help babies learn to walk, but the marketing statements about that seem mutated and secondary to just having fun. If you give a baby a rattle, she or he will learn to shake it. Is that the first step to becoming the drummer in a Rush revival band?

Adolph points to running cultures such as the Tarahumara people of Mexico: they begin running at a young age, but they do not walk or crawl especially early. She is now working in Tajikistan, where babies are bound for most of the day. The practice delays or stops the walk, but her early evidence shows no differences compared with how Western babies walk by preschool age.

LEARN GRAVITY FIRST

SCIENCE-BASED INVESTIGATIONS indicate that parents cannot supercharge their babies. But that does not mean science has not generated advice for what babies should play with. Play is incredibly important for developing minds. Just as food nourishes the body, play promotes language, cognition, spatial reasoning and other talents in ways scientists are still trying to understand. And like food, sometimes the simplest options can be among the best.

For instance, blocks and Legos pop up often in scientific literature. Kids who build stuff have better spatial reasoning and, in one controversial study, better math skills. According to experts, there simply must be cool toy, perhaps find one that they can get.

Standing in front of the teething ring display, they had to decide whether to try to increase their son’s motor development. They burst out laughing and put the ring back.

“We went to the grocery store, and we bought him a package of frozen bagels for 99 cents,” Pollak says. “Dimitri Christakis, a child psychologist at the University of Washington, who directs a children’s center at Seattle Children’s Hospital. He studies the effect of video screen time on an child’s use tablets, phones and laptops. He has found that it is not the screen that causes problems but the pace of the programming on it. Games and cartoons that speed up the action or quickly switch scenes may affect a child’s ‘internal metronome,’ a mechanism that Christakis believes develops in the first three years to help individuals understand the pace of the world. If that pace is set too fast, it can lead to attentional problems—a theory backed by studies in which he has induced deficits in cognition and attention in mice.

Christakis compares older studies such as Mister Rogers’ Neighborhood with modern, frenetic cartoons or video products for infants such as those put out in the past by Baby Einstein. He is concerned that not only are TV and video games faster today but their consumers are younger. Hirsh-Pasek agrees. Her lab has also shown that no matter how interactive a game or show seems to be, it is not as beneficial as a live human being—for example in person or via a video phone call. The key for nutrients play is another human who interacts at a normal pace.

Chau, the LeapFrog director, agrees that videos should not replace human interaction but says they can be a part of a child’s development. Rather than playing with a real wedge or lever, a baby might do it on a screen while she is not interacting with real people.

But Christakis worries screens could have lasting detrimental effects. By looking at how parts of the brain are used, Christakis implicated a transmitter involved in learning and memory, he has found connections to cocaine addiction in this attention-challenged mice. Overstimulation led to more enjoyment of cocaine, less sensitization to it and even more hyperactivity. This is not to say that the same is true in humans or that overstimulated kids will turn to drugs, but addictions require the same neural mechanisms and habit formation. To better understand these ideas, Christakis is now studying screen addiction in children as young as two years old. That would have been unheard of a decade ago, and he says he has found it in almost 10 percent of his subjects.

“My fear is that we are going to see that go up and that we’ll see it at a younger and younger age as more and more infants and toddlers spend time” on screens, Christakis says. “These devices have a lot of addictive features.

Hidden danger can lurk behind certain products. It seems. But even if educational products aimed at babies may no show deficits that they convey benefits in the long term. If you simply must buy some cool toy, perhaps find one that

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