

JOHN MEDINA

brain rules
for

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New York Times bestselling author of *Brain Rules*

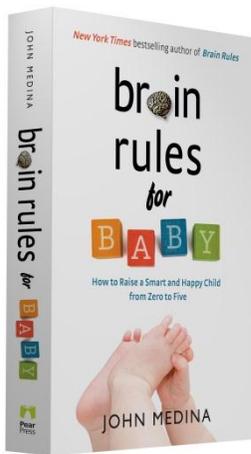
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B A B Y

How to Raise a Smart and Happy Child
from Zero to Five



JOHN MEDINA



BRAIN RULES FOR BABY

How to Raise a Smart and Happy Child
From Zero to Five

By Dr. John Medina

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"...a writing style that makes words leap off the page."
—USA TODAY (Review of *Brain Rules*)

"The greatest pediatric brain-boosting technology in the world is probably a plain cardboard box, a fresh box of crayons, and two hours. The worst is probably your new flat-screen TV."
— Dr. John Medina, from the introduction of *Brain Rules for Baby*

From the *New York Times* Bestselling Author of *Brain Rules*

brain
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for
BABY

**How to Raise a Smart and Happy Child
from Zero to Five**

By Dr. John Medina

Why is leaving your baby alone during the first part of pregnancy so important? Why is face time with Mom so crucial to maximizing your child's potential and screen time so damaging? What can you do to give your child the best chance at being smart and happy?

Scientists know.

Following the success of his long-running *New York Times* bestseller *Brain Rules*, John Medina, renowned developmental molecular biologist at the University of Washington School of Medicine and director of the Brain Center for Applied Learning Research at Seattle Pacific University, brings us **BRAIN RULES FOR BABY: How to Raise a Smart and Happy Child from Zero to Five** (Pear Press/Perseus Books Group; October 12, 2010; \$27.99).

The book combines all the latest science on how best to develop your baby's brain. Just one of the surprises: The best way to get your children into the college of their choice? Teach them impulse control.

Bridging the gap between what scientists know and what parents practice, each chapter describes **brain rules** — *what scientists know for sure about how the early childhood brain works*. The book presents the science behind the rules while offering practical ways for parents to apply the research. Medina, a dedicated father himself, shares his passion for brain science and for raising children, making the book easily accessible with humor, fascinating stories, and enlightening case studies throughout. Each chapter ends with a summary of key points.

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Just a few of the key points you'll learn along the way:

- ❑ We are just starting to learn what good parenting looks like.
- ❑ Every kid is different and every parent is different. Every brain is wired differently.
- ❑ The best advice neuroscience can give a woman in the first half of pregnancy? Do nothing.
- ❑ Pregnant moms inhale parenting information while pregnant but it is just as important to return later for more. What you do in your child's first five years of life—not just the first year—profoundly influences how he or she will behave as an adult.
- ❑ The brain's chief job description — yours, mine, and your hopelessly adorable children's — is to help our bodies survive another day. That colors *everything*.
- ❑ The greatest pediatric brain-boosting technology in the world is probably a plain cardboard box, a fresh box of crayons, and two hours.
- ❑ Exposing your infant or toddler to language DVDs can actually reduce his vocabulary.
- ❑ Babies need to feel safe above all. Developing an "empathy reflex" with your spouse gives you the highest probability of raising smart, happy, morally aware kids.
- ❑ Telling your children they are smart will actually make them less willing to work on challenging problems. If you want to get your baby into Harvard, praise her effort instead.
- ❑ The best predictor of academic performance is not IQ. It's self-control.
- ❑ The greatest predictor of happiness is having friends. Making and keeping friends requires being good at deciphering nonverbal communication. Learning a musical instrument boosts this ability by 50 percent. Text messaging may destroy it.
- ❑ Children have an inborn sense of right and wrong that is remarkably similar around the world. Children are happiest if their parents are demanding and warm.

In his cutting edge new book, John Medina unravels how the brain develops from the womb through the early years, with practical advice from the perspective of a brain scientist and father. He's put it all into **BRAIN RULES FOR BABY**, an indispensable guide for parents.

For the *Brain Rules for Baby* film trailer, video clips, high-resolution photos, excerpts from the audio book and more, visit: www.brainrules.net.

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About the Author:

John J. Medina is a developmental molecular biologist and research consultant. He is the author of the long-running *New York Times* bestseller, *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. He is an affiliate professor of bioengineering at the University of Washington School of Medicine. He is also the director of the Brain Center for Applied Learning Research at Seattle Pacific University. Medina lives in Seattle, Washington with his wife and two boys.

RAIN RULES FOR BABY:

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THE RULES FROM *BRAIN RULES FOR BABY*



PREGNANCY

Babies develop an active mental life in the womb
Stressed mom, stressed baby
Eat right, stay fit, get lots of pedicures



RELATIONSHIP

Happy marriage, happy baby
The brain seeks safety above all
What is obvious to you is obvious to you



SMART BABY: SEEDS

The brain cares about survival before learning
Intelligence is more than IQ
Face time, not screen time



SMART BABY: SOIL

Safe baby, smart baby
Praise effort, not IQ
Guided play—every day
Emotions, not emoticons



HAPPY BABY: SEEDS

Babies are born with their own temperament
Emotions are just Post-it notes
Empathy makes good friends



HAPPY BABY: SOIL

The brain craves community
Empathy soothes the nerves
Labeling emotions calms big feelings



MORAL BABY

Babies are born with moral sensibilities
Discipline + warm heart = moral kid
Let your yes be yes and your no be no

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ABOUT JOHN MEDINA

AUTHOR OF *BRAIN RULES FOR BABY*



JOHN J. MEDINA is a developmental molecular biologist focused on the genes involved in human brain development and the genetics of psychiatric disorders. He has spent most of his professional life as a private research consultant, working primarily in the biotechnology and pharmaceutical industries on research related to mental health. Medina holds joint affiliate faculty appointments at the University of Washington School of Medicine, in its Department of Bioengineering, and at Seattle

Pacific University, where he is the director of the Brain Center for Applied Learning Research.

Medina was the founding director of the Talaris Research Institute, a Seattle-based research center originally focused on how infants encode and process information at the cognitive, cellular, and molecular levels.

In 2004, Medina was appointed to the rank of affiliate scholar at the National Academy of Engineering. He has been named Outstanding Faculty of the Year at the College of Engineering at the University of Washington; the Merrill Dow/Continuing Medical Education National Teacher of the Year; and, twice, the Bioengineering Student Association Teacher of the Year. Medina has been a consultant to the Education Commission of the States and a regular speaker on the relationship between neurology and education.

Medina's books include: **BRAIN RULES FOR BABY: How to Raise a Smart and Happy Child from Zero to Five** (Pear Press/ Perseus Books Group, October 12, 2010), *Brain Rules* (New York Times Bestseller), *The Genetic Inferno*, *The Clock of Ages*, *Depression*, *What You Need to Know About Alzheimer's*, *The Outer Limits of Life*, *Uncovering the Mystery of AIDS*, and *Of Serotonin, Dopamine and Antipsychotic Medications*. Medina is also the regular "Molecules of the Mind" contributing columnist for *Psychiatric Times*.

Medina has a lifelong fascination with how the mind reacts to and organizes information. As the father of two boys, he has a passion for how the brain sciences might influence the way we teach our children. In addition to his research, consulting, and teaching, Medina speaks often to public officials, business and medical professionals, school boards, and nonprofit leaders. He lives in Seattle, Washington with his wife and sons.

For more information, visit: www.brainrules.net.

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TALKING POINTS FOR DR. JOHN MEDINA

AUTHOR OF *BRAIN RULES FOR BABY*

PREGNANCY



Babies develop an active mental life in the womb. The best advice neuroscience can give a mother-to-be in the first half of pregnancy? Do nothing. Don't waste your money on products claiming to improve a preborn baby's IQ, temperament, or personality. None of them has been proven to work. In the first half of pregnancy, babies mostly want to be left alone. That's when their brains are creating an astonishing 8,000 neurons per second. In the second half of pregnancy, babies begin to perceive and process a great deal of sensory information. They can smell the perfume you wear and the garlic on the pizza you just ate. Here, a baby's brain begins wiring thousands of connections together—a job that's not finished for another couple of decades. From touch to sight to sound, a baby develops an incredibly active mental life in the womb.

Stressed mom, stressed baby. Get a rocking chair and find a quiet, comfortable place to relax. One factor in a child's temperament and IQ is how stressed you felt while pregnant.

Eat right, stay fit, get lots of pedicures. The mother-to-be can boost her baby's brain development in four ways: proper weight gain (take in an extra 300 calories a day), a balanced diet of fruits and vegetables (along with enough folic acid, pediatricians suggest eating foods rich in iron, iodine, vitamin B12 and omega-3), moderate exercise (30 minutes of aerobic exercise each day), and stress reduction (excess stress can do damage to you and the baby).

RELATIONSHIP



Happy marriage, happy baby. More than 80 percent of couples experience a huge drop in marital quality during the transition to parenthood. That's a surprise to many rookie parents. The four most common sources of marital turbulence are: sleep loss, social isolation, unequal distribution of household workload, and depression. Work on your marriage and you'll be able to better navigate this as a team. Schedule sex regularly, address your sticking points, and deliberately reconcile in front of your children.

The brain seeks safety above all. Children are highly attuned to whether their environment is safe; even infants younger than 6 months can detect and respond to hostility between parents. But if you develop an "empathy reflex" with your spouse, your marriage is nearly divorce-proof. You enjoy the highest probability of raising smart, happy, morally aware kids.

What is obvious to you is obvious to you. When fighting, people tend to believe *they* are perfectly unbiased, informed, and objective, while simultaneously thinking their *spouses* are hopelessly prejudiced, clueless, and subjective. "Perceptual asymmetry" can lead to some nasty fights. Guess what? Other people can't read our minds. Empathy reduces hostility. Here's how: 1. Describe the emotional changes you think you see. 2. Make a guess as to where those emotional changes came from.

SMART BABY: SEEDS



The brain cares about survival before learning. Parents think a child's brain loves learning. That's not accurate. The brain is interested in surviving. Every ability in our intellectual tool kit was engineered to escape extinction. It is only a happy coincidence that our intellectual tools confer on us the ability to create spreadsheets and speak French. We do not survive so that we can learn. We learn so that we can survive.

Intelligence is more than IQ. By “smart,” most parents mean they want their kids to do well in school. But true intelligence looks different in every kid. IQ is related to several important childhood outcomes, but it is only one measure of intellectual ability. Human intelligence has many ingredients including self-control, the desire to explore, inquisitiveness, creativity, and verbal and nonverbal communication. All of these are, to some extent, controlled by genetics. (The DNA you give your kids controls about 50% of their intellectual horsepower.) And many of them are characteristics common among the country’s most successful entrepreneurs.

Face time, not screen time. Babies love to gaze at human faces. Mom’s is best of all. TV before age 2 is harmful to children. Every hour of TV creates a greater likelihood of attention problems and bullying once your child starts school. Activities likely to hurt early learning include overexposure to television, hyperparenting, and being sedentary. One of the best things you can do for your baby’s brain power is devote lots of time to playing, in a certain way (see “Guided play” below). Surprisingly, it builds self-control.

SMART BABY: SOIL



Safe baby, smart baby. The brain will never outgrow its preoccupation with survival. There are four nutrients you want in your behavioral fertilizer, adjusting as your baby gets older: breastfeeding, talking to your baby, guided play, and praising effort rather than accomplishment. Breast-feed for one year. Longer is better. You’ll get a smarter baby, a healthier baby, a happier baby. The benefits of breast-feeding are some of the most well-established, practical, and brain-boosting we know. Describe everything you see. Talk to your baby a lot. This is as simple as saying, “It’s a beautiful day” when you look outside and see the sun. Just talk. At infancy, do so in “parentese,” those clusters of exaggerated vowel sounds at high frequencies. A rate of 2,100 words per hour is the gold standard.

Praise effort, not achievement. Praise your child’s effort (“I’m proud of you. You really worked hard on that”) rather than innate ability (“You’re so smart!”). Avoid hyperparenting because it just doesn’t work. Viewing a child’s development like a competitive race creates the kind of stress that actually damages the brain. Pressuring children to learn a subject before their brains are ready does not work. When children who are praised for their effort fail, they are much more likely to try harder.

Guided play—every day. Open-ended activities are as important to a child’s neural growth as omega-3s. Kids allowed a specific type of open-ended play time are more creative, better at language, better at problem solving, less stressed, better at memory, and more socially skilled. The secret sauce is called mature dramatic play. Children create a play plan and are coached on pretending, among other things, and this helps build impulse control. MDP has been codified into a school program called Tools of the Mind, one of the few programs of its type that has been studied in randomized trials. Every playroom should have the following design element: lots of choices. A place for drawing. A place for painting. Musical instruments. A wardrobe hanging with costumes. Blocks. Picture books. Tubes and gears. Anything where a child can be safely let loose, joyously free to explore whatever catches her fancy.

Emotions, not emoticons. Could texting be related to social immaturity? The average youngster in 2008 sent and received about 80 texts a day. In 2009, 27 percent of the words they encountered came directly from a computer. The problem is, interpreting nonverbal cues is critical, and texting doesn’t offer any practice doing it. Flesh-and-blood people touch each other, get in each other’s way, and constantly telegraph information to each other in a fashion not easily reformatted into emoticons and cute three-letter abbreviations. The less practice humans get at it, the more immature their social interactions are likely to be, which has implications ranging from future divorce rates to erosion of productivity in the workforce. The phenomenon is too new for definitive conclusions. The best current advice may be keeping those machines mostly in the off position for as long as you can.

HAPPY BABY: SEEDS



Babies are born with their own temperament. Children are born with certain predispositions, which you'll be able to see in your baby's first few minutes of life, but there is no one gene responsible for temperament.

Emotions are just Post-it notes. Emotions act like Post-it notes, helping the brain identify, filter, and prioritize. Children who learn to regulate their emotions have deeper friendships, and are thus happier, than those who don't. No single area of the brain processes all emotions.

Empathy makes good friends. After decades of research burning through millions of dollars, scientists have uncovered this shocker of a fact: We are most likely to maintain deep, long-term relationships with people who are nice. Many ingredients go into creating socially smart children. A big one is the ability to empathize with the needs of another person. Your child must cultivate the ability to peer inside the psychological interiors of someone else, accurately comprehend that person's behavioral reward and punishment systems, and then respond with kindness and understanding. This is empathy. Individuals who are thoughtful, kind, sensitive, outward focused, accommodating, and forgiving have deeper, more lasting friendships—and lower divorce rates—than people who are moody, impulsive, rude, self-centered, inflexible, and vindictive. A negative balance on this spreadsheet can greatly affect a person's mental health, too, putting him at greater risk for depression, anxiety disorders, and fewer friends. Those with emotional debits are some of the unhappiest people in the world.

HAPPY BABY: SOIL



The brain craves community. The single greatest predictor of happiness is having friends. This takes years of practice. Kids consistently exposed to the delightful rough and tumble of other children get experience with many personalities. That means arranging plenty of play dates. Let your children interact with multiple age groups, too, and a variety of people. But pay attention to how much your child can handle at one time. Social experiences must be tailored to individual temperaments.

Empathy soothes the nerves. When the brain perceives empathy, the vagus nerve relaxes the body. This nerve connects the brainstem to other areas of the body, including the abdomen, chest, and neck. When it is overstimulated, it causes pain and nausea. Develop an empathy reflex with your children. When faced with a strong emotion, turn to empathy first. Describe the emotion you think you see. Make a guess as to where it came from. Remember, understanding someone's behavior is not the same thing as agreeing with it. It is just your opening response to any situation, especially when intense emotions are involved. If you want your children to be more empathic, they will need to see it modeled on a regular basis. Empathy comes from being empathized with.

Labeling emotions calms big feelings. How you deal with your child's emotions — the intense, inappropriate ones — fundamentally affects your child's happiness. Actually, it affects everything from their self-calming ability to rates of violence to parental loyalty to infectious diseases. One trick: teaching your child to label emotions. It helps connect the nonverbal and verbal pathways in the brain. Another is empathizing, which calms the nervous system. Emotions should be acknowledged and named but not judged. Chart your child's emotional landscape. Most infants have a limit to how much stimulation they can take at any one time. Make a list of your baby's "can we stop now?" cues, which can be as subtle as head-turning or as obvious as bawling. Then get into a rhythm based on that, interacting in response to your baby's cues, withdrawing when she's had enough. Continue to monitor your child's emotions as he or she gets older. Jot down a few sentences describing your child's likes and dislikes. Update it continuously as various emotional responses develop. Making a list gets you in the habit of

paying attention, and it provides a baseline, allowing you to notice any changes in behavior. Be willing to enter into your child's world on a regular basis and to empathize with what your child is feeling. Simple as a song. Complex as a symphony. The behaviors of good parenting follow from this attitude. If you also create a set of rules and enforce them with consistency and warmth, you have virtually everything you need to start your parenting journey.

MORAL BABY



Babies are born with moral sensibilities. Wondering how to raise a morally aware child? Your child has an inborn sense of right and wrong that is remarkably similar to other youths around the world. Evolutionary anthropologists think that's because having rules of social conduct allowed our ancestors to work in teams, necessary for outsmarting stronger predators. Moral behavior has evolutionary roots. We needed to cooperate to survive. Still, kids don't just do the right thing. Your discipline helps shape your baby's moral sensibilities.

Discipline + warm heart = moral kid. Brain science has some things to say about discipline. Emotions are important, as are the role they play in moral (or any) decision-making. Indeed, the areas of the brain that process emotions and logic are so intertwined, one cannot happen without the other. In the brain, regions that process emotions and regions that guide decision-making work together to mediate moral awareness. CAP your rules. "C" stands for Clarity. The rules should be clear, reasonable and unambiguous. Chore charts are good examples. "A" stands for Accepting. The rules should be delivered in a consistently warm and accepting environment. "P" stands for Praise. Every time a child follows a rule, reinforce the behavior. This includes praising the absence of a behavior, such as when a child learns not to yell in a restaurant. Avoid spanking. Parents whose rules issue from warm acceptance are perceived overall as reasonable and fair, rather than as capricious and dictatorial. They are most likely to evince from their kids committed compliance rather than committed defiance. Children are most likely to resist temptation if parents explain why a rule and its consequences exist.

Let your yes be yes and your no be no. How parents handle rules is key: set realistic, unambiguous expectations, be consistent and proffer swift consequences for rule violation. Practice effective punishment FIRST. "F" stands for firm. The punishment must mean something. It has to be firm and aversive to be effective. "I" stands for immediate. The closer the punishment is delivered to the point of infraction, the more effective it is. "R" stands for reliable. The punishment must be consistently applied whenever the noxious behavior is displayed. Inconsistently applied rules are confusing to children and lead to uneven moral development. "S" stands for safe. The rules must be supplied in an atmosphere of emotional safety. Children have a hard time internalizing moral behavior under conditions of constant threat. "T" stands for tolerant (AKA patience). Children rarely internalize rules on the first try and sometimes not on the 10th.

Don't forget to enjoy the journey!

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