About the Book

From the author of the groundbreaking, international bestseller *The Female Brain* comes this eagerly awaited follow-up.

Did you know that the male brain . . .

Is a lean, mean problem-solving machine that uses analytical brain structures, not emotional ones, to find solutions

Thrives under competition, instinctively plays rough, and is obsessed with rank and hierarchy

Has an area for sexual pursuit that is 2.5 times larger than that of the female brain, consuming him with sexual fantasies about female body parts

As Dr Louann Brizendine's impeccably researched, irresistible guide follows the male brain from infancy to adulthood, it unlocks many secrets and offers fascinating insights into a range of subjects, including **emotional intimacy**, **anger**, **aggression**, and **winning**. It also answers many baffling questions and exposes the often shocking gulf that exists between the sexes.

CONTENTS

The Male Brain

Louann Brizendine, M.D.

To the men in my life:
My husband, Dr. Samuel Herbert Barondes
My son, John “Whitney” Brizendine
My brother, William “Buzz” Brizendine II

And in memory of my father,
Reverend William Leslie Brizendine

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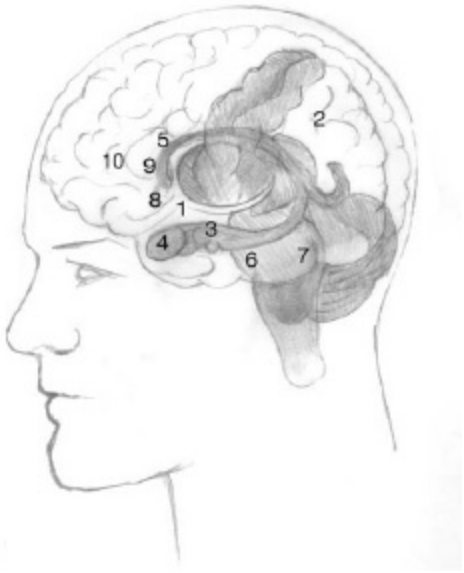
THE MALE BRAIN



Scientists think of brain areas like the ACC, TPJ, and RCZ as being "hubs" of brain activation, sending electrical signals to other areas of the brain, causing behaviors to occur or not occur.

1. MEDIAL PREOPTIC AREA (MPOA): This is the area for sexual pursuit, found in the hypothalamus, and it is 2.5 times larger in the male. Men need it to start an erection.
2. TEMPORAL PARIETAL JUNCTION (TPJ): The solution seeker, this "cognitive empathy" brain hub rallies the brain's resources to solve distressing problems while taking into account the perspective of the other person or people involved. During interpersonal emotional exchanges, it's more active in the male brain, comes on-line more quickly, and races toward a "fix-it-fast" solution.

3. DORSAL PREMAMMILLARY NUCLEUS (DPN): The defend-your-turf area, it lies deep inside the hypothalamus and contains the circuitry for a male's instinctive one-upmanship, territorial defense, fear, and aggression. It's larger in males than in females and contains special circuits to detect territorial challenges by other males, making men more sensitive to potential turf threats.
4. AMYGDALA: The alarm system for threats, fear, and danger. Drives emotional impulses. It gets fired up to fight by testosterone, vasopressin, and cortisol and is calmed by oxytocin. This area is larger in men than in women.
5. ROSTRAL CINGULATE ZONE (RCZ): The brain's barometer for registering social approval or disapproval. This "I am accepted or not" area keeps humans from making the most fundamental social mistake: being too different from others. The RCZ is the brain center for processing social errors. It alerts us when we're not hitting the mark in our relationship or job. During puberty, it may help males reset their facial responses to hide their emotions.
6. VENTRAL TEGMENTAL AREA (VTA): It's the motivation center—an area deep in the center of the brain that manufactures dopamine, a neurotransmitter required for initiating movement, motivation, and reward. It is more active in the male brain.
7. PERIAQUEDUCTAL GRAY (PAG): The PAG is part of the brain's pain circuit, helping to control involuntary pleasure and pain. During sexual intercourse, it is the center for pain suppression, intense pleasure, and moaning. It is more active during sex in the male brain.
8. MIRROR-NEURON SYSTEM (MNS): The "I feel what you feel" emotional empathy system. Gets in sync with others' emotions by reading facial expressions and interpreting tone of voice and other nonverbal emotional cues. It is larger and more active in the female brain.

9. ANTERIOR CINGULATE CORTEX (ACC): It's the worry-wart, fear-of-punishment area and center of sexual performance anxiety. It's smaller in men than in women. It weighs options, detects conflicts, motivates decisions. Testosterone decreases worries about punishment. The ACC is also the area for self-consciousness.
10. PREFRONTAL CORTEX (PFC): The CEO of the brain, the PFC focuses on the matter at hand and makes good judgments. This "pay total attention to this now" area also works as an inhibiting system to put the brakes on impulses. It's larger in women and matures faster in females than in males by one to two years.

THE CAST OF NEUROHORMONE CHARACTERS

(how hormones affect a man's brain)

TESTOSTERONE—Zeus. King of the male hormones, he is dominant, aggressive, and all-powerful. Focused and goal-oriented, he feverishly builds all that is male, including the compulsion to outrank other males in the pecking order. He drives the masculine sweat glands to produce the come-hither smell of manhood—androstenedione. He activates the sex and aggression circuits, and he's single-minded in his dogged pursuit of his desired mate. Prized for his confidence and bravery, he can be a convincing seducer, but when he's irritable, he can be the grouchiest of bears.

VASOPRESSIN—The White Knight. Vasopressin is the hormone of gallantry and monogamy, aggressively protecting and defending turf, mate, and children. Along with testosterone, he runs the male brain circuits and enhances masculinity.

MÜLLERIAN INHIBITING SUBSTANCE (MIS)—Hercules. He's strong, tough, and fearless. Also known as the Defeminizer, he ruthlessly strips away all that is feminine from the male. MIS builds brain circuits for exploratory behavior, suppresses brain circuits for female-type behaviors, destroys the female reproductive organs, and helps build the male reproductive organs and brain circuits.

OXYTOCIN—The Lion Tamer. With just a few cuddles and strokes, this "down, boy" hormone settles and calms even the fiercest of beasts. He increases empathic ability and

builds trust circuits, romantic-love circuits, and attachment circuits in the brain. He reduces stress hormones, lowers men's blood pressure, and plays a major role in fathers' bonding with their infants. He promotes feelings of safety and security and is to blame for a man's "postcoital narcolepsy."

PROLACTIN—Mr. Mom. He causes sympathetic pregnancy (couvade syndrome) in fathers-to-be and increases dads' ability to hear their babies cry. He stimulates connections in the male brain for paternal behavior and decreases sex drive.

CORTISOL—The Gladiator. When threatened, he is angry, fired up, and willing to fight for life and limb.

ANDROSTENEDIONE—Romeo. The charming seducer of women. When released by the skin as a pheromone he does more for a man's sex appeal than any aftershave or cologne.

DOPAMINE—The Energizer. The intoxicating life of the party, he's all about feeling good, having fun, and going for the gusto. Excited and highly motivated, he's pumped up to win and driven to hit the jackpot again and again. But watch out—he is addictively rewarding, particularly in the rough-and-tumble play of boyhood and the sexual play of manhood, where dopamine increases ecstasy during orgasm.

ESTROGEN—The Queen. Although she doesn't have the same power over a man as Zeus, she may be the true force behind the throne, running most of the male brain circuits. She has the ability to increase his desire to cuddle and relate by stimulating his oxytocin.

PHASES OF A MALE'S LIFE

HORMONES CAN DETERMINE what the brain is interested in doing. Their purpose is to help guide social, sexual, mating, parenting, protective, and aggressive behaviors. They can affect being rough-and-tumble, competing in sports or attending sporting events, solving problems, interpreting facial expressions and others' emotions, male-male bonding, dating and mating, ogling attractive females, forming sexual and pair-bond relationships, protecting family and turf, fantasizing, masturbating, and pursuing sex.

	Major Hormone Changes	What males Have that Females Don't	male-Specific Brain Changes	Reality Changes
Fetal growth	Brain development: starting 8 weeks after conception, testosterone *masculinizes* and then works with MIS hormone to *defeminize* the male brain	Y chromosome.	Growth and masculinization of circuits for sexual pursuit, exploratory behavior, and rough-and-tumble muscle movements.	
Boyhood	Continued production of MIS; low levels of testosterone during this "juvenile pause."	High testosterone from 1 month to 12 months after birth; lower testosterone from 1 to 11 years old; continued high MIS hormone; low estrogen.	More brain circuits for exploratory behavior, rough-and-tumble muscle movements; circuits for male sexual activity continue to develop.	Major interest in winning, movement, chasing objects, rough-and-tumble and exporatory play with boys, not girls.
Puberty	20-fold increase in testosterone along with increasing vasopressin; low MIS.	Increased sensitivity and growth of sexual-pursuit circuits and territorial aggression.	Circuits for visual sex attraction focus on female figures; perceives male faces as hostile; sense of smell for pheromones changes; auditory perception changes; circuits for sleep cycle change.	Major interest in turf, social interaction, girls' body parts, sexual fantasy, masturbation, male hierarchy; goes to sleep and gets up later; avoidance of parents, challenges authority.
Sexual maturity, single man	Testosterone continues to be high and activates mating, sex, protection, hierarchy, and turf circuits.	Focused on curvaceous, fertile females. Wants sex, first, then love and relationship *may* follow; high libido.	Visual circuits change to spot fertile females and potentially aggressive males.	Major interest in finding sexual partners; focus on job, money, and career development.
Fatherhood	During the mother's pregnancy and after birth of baby, prolactin goes up, testosterone goes down.	Male-pregnancy or couvade syndrome.	Circuits for sex drive suppressed due to lower testosterone and high prolactin; auditory circuits enhanced for hearing babies cry; father-baby synchrony develops.	Major focus is on protecting the mother and baby, on making a living and supporting the family; hears babies cry better than non-dads.
Midlife manhood	Very gradually decreasing testosterone.	Continued focus on sex, turf, and attractive women.	Slowly decreasing activation by testosterone and vasopressin.	Major focus is on raising kids, power and status at work; less focus on must-have-sex-now.
Andropause	Gradually lower testosterone; by age 85, testosterone level is less than half of what it was at age 20.	Can continue to reproduce; continued focus on sex and attractive women.	Brain circuits usually fueled by testosterone and vasopressin are declining; ratio of estrogen to testosterone increases; higher oxytocin.	Major interest is in staying healthy, and improving well-being, marriage, sex life, grandchildren, legacy; closest that men will ever come to being like women, since oxytocin makes them more open to affection and sentiment, and declining testosterone makes them less aggressive.

INTRODUCTION

What Makes a Man

YOU COULD SAY that my whole career prepared me to write my first book, *The Female Brain*. As a medical student I had been shocked to discover that major scientific research frequently excluded women because it was believed that their menstrual cycles would ruin the data. That meant that large areas of science and medicine used the male as the "default" model for understanding human biology and behavior, and only in the past few years has that really begun to change. My early discovery of this basic inequity led me to base my career at Harvard and the University of California–San Francisco (UCSF) around understanding how hormones affect the female and male brains differently and to found the Women's Mood and Hormone Clinic. Ultimately that work led me to write *The Female Brain*, which addressed the brain structures and hormonal biology that create a uniquely female reality at every stage of life.

The distinct brain structures and hormonal biology in the male similarly produce a uniquely male reality. But as I considered writing *The Male Brain*, nearly everyone I consulted made the same joke: "That will be a short book! Maybe more of a pamphlet." I realized that the idea that the male is the default-model human still deeply pervades our culture. The male is considered simple; the female, complex.

Yet my clinical work and the research in many fields, from neuroscience to evolutionary biology, show a different picture. Simplifying the entire male brain to *just* the "brain below the belt" is a good setup for jokes, but it hardly represents the totality of a man's brain. There are also the seek-and-pursue baby boy brain; the must-move-or-I-will-die toddler brain; the sleep-deprived, deeply bored, risk-taking teen brain; the passionately bonded mating brain; the besotted daddy brain; the obsessed-with-hierarchy aggressive brain; and the fix-it-fast emotional brain. In reality, the male brain is a lean, mean problem-solving machine.

The vast new body of brain science together with the work I've done with my male patients have convinced me that through every phase of life, the unique brain structures and hormones of boys and men create a male reality that is fundamentally different from the female one and all too frequently oversimplified and misunderstood.

Male and female brains are different from the moment of conception. It seems obvious to say that all the cells in a man's brain and body are *male*. Yet this means that there are deep differences, at the level of every cell, between the male and female brain. A male cell has a Y chromosome and the female does not. That small but significant difference begins to play out early in the brain as genes set the stage for later amplification by hormones. By eight weeks after conception, the tiny male testicles begin to produce enough testosterone to marinate the brain and fundamentally alter its structure.

Over the course of a man's life, the brain will be formed and re-formed according to a blueprint drafted both by genes and male sex hormones. And this male brain biology produces his distinctly male behaviors.

The Male Brain draws on my twenty-five years of clinical experience as a neuropsychiatrist. It presents research findings from the advances over the past decade in our

understanding of developmental neuroendocrinology, genetics, and molecular neuroscience. It offers samplings from neuropsychology, cognitive neuroscience, child development, brain imaging, and psychoneuroendocrinology. It explores primatology, animal studies, and observation of infants, children, and teens, seeking insights into how particular behaviors are programmed into the male brain by a combination of nature and nurture.

During this time, advances in genetics, electrophysiology, and noninvasive brain-mapping technology have ignited a revolution in neuroscientific research and theory. Powerful new scientific tools, such as genetic and chemical tracers, positron-emission tomography (PET) and functional magnetic resonance imaging (fMRI), now allow us to see inside the working human brain while it's solving problems, producing words, retrieving memories, making decisions, noticing facial expression, falling in love, listening to babies cry, and feeling anger, sadness, or fear. As a result, scientists have recorded a catalog of genetic, structural, chemical, hormonal, and brain-processing differences between women and men.

In the female brain, the hormones estrogen, progesterone, and oxytocin predispose brain circuits toward female-typical behaviors. In the male brain, it's testosterone, vasopressin, and a hormone called MIS (Müllerian inhibiting substance) that have the earliest and most enduring effects. The behavioral influences of male and female hormones on the brain are major. We have learned that men use different brain circuits to process spatial information and solve emotional problems. Their brain circuits and nervous system are wired to their muscles differently—especially in the face. The female and male brains hear, see, intuit, and gauge what others are feeling in their own special ways. Overall, the brain circuits in male and female brains are very similar,

but men and women can arrive at and accomplish the same goals and tasks using different circuits.

We also know that men have two and a half times the brain space devoted to sexual drive in their hypothalamus. Sexual thoughts flicker in the background of a man's visual cortex all day and night, making him always at the ready for seizing sexual opportunity. Women don't always realize that the penis has a mind of its own—for neurological reasons. And mating is as important to men as it is to women. Once a man's love and lust circuits are in sync, he falls just as head over heels in love as a woman—perhaps even more so. When a baby is on the way, the male brain changes in specific and dramatic ways to form the daddy brain.

Men also have larger brain centers for muscular action and aggression. His brain circuits for mate protection and territorial defense are hormonally primed for action starting at puberty. Pecking order and hierarchy matter more deeply to men than most women realize. Men also have larger processors in the core of the most primitive area of the brain, which registers fear and triggers protective aggression—the amygdala. This is why some men will fight to the death defending their loved ones. What's more, when faced with a loved one's emotional distress, his brain area for problem solving and fixing the situation will immediately spark.

I must have been dimly aware of this long catalog of distinctive male behaviors when I first found out, twenty-one years ago, that the baby I was carrying had a Y chromosome. I immediately thought, *Oh dear. What am I going to do with a boy?* Up until that moment, I realized, I had unconsciously been thinking *It's a girl!* and feeling confident that my own female life experiences could guide me in raising a daughter. I was right to be nervous. My lack of boy-smarts was about to matter more than I imagined. I now know from my twenty-five years of research and clinical work that both men and women have a deep

misunderstanding of the biological and social instincts that drive the other sex. As women, we may love men, live with men, and bear sons, but we have yet to understand men and boys. They are more than their gender and sexuality, and yet it is intrinsic to who they are. And it further complicates matters that neither women nor men have a good sense of what the others' brains or bodies are doing from one moment to the next. We are mostly oblivious to the underlying work performed by different genes, neurochemicals, and hormones.

Our understanding of essential gender differences is crucial because biology does not tell the whole story. While the distinction between boy and girl brains begins biologically, recent research shows that this is only the beginning. The brain's architecture is not set in stone at birth or by the end of childhood, as was once believed, but continues to change throughout life. Rather than being immutable, our brains are much more plastic and changeable than scientists believed a decade ago. The human brain is also the most talented learning machine we know. So our culture and how we are taught to behave play a big role in shaping and reshaping our brains. If a boy is raised to "be a man," then by the time he becomes an adult, his brain's architecture and circuitry, already predisposed that way, are further contoured for "manhood."

Once he reaches manhood, he will likely find himself pondering an age-old question: What do women want? While no one has a definitive answer to that question, men do know what women and society in general want and expect from *them*. Men must be strong, brave, and independent. They grow up with the pressure to suppress their fear and pain, to hide their softer emotions, to stand confidently in the face of challenge. New research shows that their brain circuits will architecturally change to reflect this emotional suppression. Although they crave closeness and cuddling as much or perhaps even more than women, if

they show these desires, they are misjudged as soft or weak by other men and by women, too.

We humans are first and foremost social creatures, with brains that quickly learn to perform in socially acceptable ways. By adulthood, most men and women have learned to behave in a gender-appropriate manner. But how much of this gendered behavior is innate and how much is learned? Are the miscommunications between men and women biologically based? This book aims to answer these questions. And the answers may surprise you. If men and women, parents and teachers, start out with a deeper understanding of the male brain, how it forms, how it is shaped in boyhood, and the way it comes to see reality during and after the teen years, we can create more realistic expectations for boys and men. Gaining a deeper understanding of biological gender differences can also help to dispel the simplified and negative stereotypes of masculinity that both women and men have come to accept.

This book provides a behind-the-scenes brain's-eye view of little boys, tumultuous teens, men on the mating hunt, fathers, and grandfathers. As I take readers through the phases of the male brain's life, my hope is that men will gain a greater understanding of their deepest drives and women will catch a glimpse of the world through male-colored glasses. We are entering an era, finally, when both men and women can begin to understand their distinct biology and how it affects their lives. If we know how a biological brain state is guiding our impulses, we can choose how to act, or to not act, rather than merely following our compulsions. If you're a man, this knowledge can not only help you understand and harness your unique male brain power, but it can also help you understand your sons, your father, and other men in your life. If you're a woman, this book will help you interpret and comprehend the intricacies of the male brain. With that new information, you can help

your sons and husbands to be truer to their nature and feel more compassionate toward your father.

Over the years, as I have been writing this book, I have come to see the men I love most—my son, my husband, my brother, and my father—in a new light. It is my hope that this book will help the male brain to be seen and understood as the fine-tuned and complex instrument that it actually is.

ONE

The Boy Brain

DAVID RACED PAST the swing set and zoomed around the tool-shed in the backyard with his preschool buddies Matt and Craig hot on his heels. Determined to maintain his lead, he took a shortcut through the sandbox, sending sand and shovels flying as he made a beeline for the coveted Big Wheel tricycle. Matt pushed Craig aside and dived for the wheeled wonder, but David was already sliding into the driver's seat. With pedals churning, David screeched off down the sidewalk and into the driveway, where he victoriously spun doughnut after doughnut.

Disappointed but not to be outdone, Matt and Craig headed for the open garage to see what else they could find to ride. Craig spotted it first: a large plastic trash can. "Let's use this!" he shouted. And without another word, the boys were running headlong for the hill in the backyard, dragging the can behind them. "C'mon. Gimme a push!" Craig commanded as he slid into the can. "Harder!" he said, as Matt's first shove barely budged it. Matt rammed the can with his shoulder as hard as he could, and the green vehicle tumbled down the hill with Craig inside whooping and hollering.

You don't have to study brain science to know that little boys are all about action and adventure. Go to a playground and you'll see boys like David and his friends in perpetual motion. Boys are programmed to move, make things move,

and watch things move. Scientists used to think this stereotypical boy behavior was the result of socialization, but we now know that the greater motivation for movement is biologically wired into the male brain.

If you watched the fetal development of a male and a female brain with a miniature time-lapse brain scanner, you'd see these critical movement circuits being laid down from the blueprint of their genes and sex hormones. Scientists agree that when cells in various areas of the male and female brains are stimulated by hormones like testosterone and estrogen, they turn on and off different genes. For a boy, the genes that turn on will trigger the urge to track and chase moving objects, hit targets, test his own strength, and play at fighting off enemies.

David and his friends weren't taught to be action-oriented; they were following their biological impulses. David's mother said that his love affair with movement was obvious from day one. "When I put him in his bassinet, I thought he'd cry and look beseechingly at me the way Grace did when she was a baby," she said. "But as soon as he spotted the moving mobile, he forgot I was there."

David was only twenty-four hours old, and without encouragement or instruction from anyone, he stared at the rotating triangles and squares on the mobile and seemed to find them fascinating. Nobody taught David to follow the movements of the dangling triangles and squares with his eyes. He just did it. A boy's superior ability to track moving objects isn't the result of being conditioned by his environment. It's the result of having a male brain. Every brain is either male or female and, while they are mostly alike, scientists have discovered some profound differences. Certain behaviors and skills are wired and programmed innately in boys' brains, while others are wired innately in girls'. Scientists have even found that male-specific neurons may be directly linked to stereotypical male behaviors like roughhousing. And studies show that from an early age,

boys are interested in different activities than girls. These differences are reinforced by culture and upbringing, but they begin in the brain.

What Makes a Boy a Boy?

I met David's mother, Jessica, a few months after he was born. Her daughter, Grace, was three years old, and Jessica and her husband, Paul, were thrilled to have a beautiful baby boy. But Jessica was worried because things weren't going quite as smoothly with David as they had with Grace. Jessica said, "He's sweet and cuddly one minute, and the next minute he's squirming out of my arms. If I don't put him down, he shrieks like I'm killing him."

Jessica was afraid that David might be hyperactive. But her pediatrician told her David was just fine and developing normally. Researchers at Harvard found that baby boys get emotionally worked up faster than girls, and once they're upset, they're harder to soothe. So, early on, parents spend more time trying to dial down their sons' emotions than their daughters'.

She said, "Grace was easier to calm. David keeps us constantly on our toes!"

Jessica also told me that David didn't make eye contact with her the way Grace did when she was a baby. She said that he'd only look at her for a couple of seconds and then go right back to staring at the mobile. I couldn't help but smile, because I had this same concern with my own son. At that time, psychologists believed the key to developing a bond with your baby was what they called mutual gazing—looking into each other's eyes. Whereas that's true for baby girls, it turns out that baby boys bond without as much mutual gazing. And unlike girls, who are inclined to look long and hard at faces, boys' visual circuits pay more attention to movement, geometric shapes, and the edges and angles of objects from the get-go.

I said to Jessica, “By the time they’re six months old, baby girls are looking at faces longer and making eye contact with just about everyone. But baby boys are looking *away* from faces and *breaking* eye contact much more than girls. There’s nothing wrong with David. His brain just doesn’t find eyes and faces as interesting as toy airplanes and other moving objects.”

David’s male brain was prompting him to visually explore animated objects. We now know that genes on the Y chromosome are the reason. Like other boys, David’s fascination with movement was the result of circuitry that started to form in his brain just eight weeks after he was conceived. During fetal development, David’s brain was built in two stages. First, during weeks eight to eighteen, testosterone from his tiny testicles *masculinized* his body and brain, forming the brain circuits that control male behaviors. As his brain was marinating in testosterone, this hormone began to make some of his brain circuits grow and to make others wither and die.

Next, during the remaining months of pregnancy another hormone, MIS, or Müllerian inhibiting substance, joined with testosterone and *defeminized* David’s brain and body. They suppressed his brain circuits for female-type behaviors and killed off the female reproductive organs. His male reproductive organs, the penis and testicles, grew larger. Then, together with testosterone, MIS may have helped form David’s larger male brain circuits for exploratory behavior, muscular and motor control, spatial skills, and rough play. Scientists discovered that when they bred male mice to lack the MIS hormone, they did not develop male-typical exploratory behavior. Instead, they behaved and played more like females. The female brain circuits that make a girl a girl are laid down and develop without the effects of testosterone or MIS.

After I shared this information with Jessica, she raised her eyebrows and asked, “Are you saying that if Grace’s brain

had been exposed to these male hormones when I was pregnant, she'd act more like David?"

"That's right," I said, smiling as her face lit up with recognition. It's always rewarding to me when I see this kind of relief on a mother's face. Suddenly, instead of thinking that she's doing something wrong or that there's something wrong with her child, she can relax and begin to appreciate her son's maleness.

She said, "It's just so different with David. He's so much more active than Grace was, even at this age. But he can be the very essence of sweetness, too.

"The other day when I was having a hard time getting him down for his nap, Paul took him and played with him on our bed, hoping he'd calm down. I had my doubts about whether it would work, but when I peeked in to check on them a little later, David was lying with his tiny hand inside of Paul's big one, and they were both fast asleep."

From birth until a boy is a year old, a period that scientists call infantile puberty, his brain is being marinated in the same high levels of testosterone as in an adult man. And it's this testosterone that helps stimulate a boy's muscles to grow larger and improves his motor skills, preparing him for rough-and-tumble play. After the year of infantile-puberty, a boy's testosterone drops, but his MIS hormone remains high. Scientists call this period, from age one to ten, the juvenile pause. They believe that the MIS hormone may form and fuel his male-specific brain circuits during this ten-year period, increasing his exploratory behavior and rough play. This meant it wouldn't be long before Jessica would have more reason to worry as David started testing his limits, as I well remember with my own son.

When he was a toddler and we were out walking on Baker Beach in San Francisco, he took off running after a sandpiper toward the water. I shouted and waved my arms like a madwoman to signal danger. He completely ignored me. I had to run after him and grab his shoulders to pull him

back from the surf, just as a huge wave was rolling in. That was the first day in what would be years of his ignoring my signals of danger—stop, don't do that—requiring me to keep a firm hold on him.

Researchers have found that by the time a boy is seven months old, he can tell by his mother's face when she's angry or afraid. But by the time he's twelve months old, he's built up an immunity to her expressions and can easily ignore them. For girls, the opposite happens. A subtle expression of fear on Jessica's face would stop Grace in her tracks. But not David.

By the age of one, David seemed oblivious to the look of warning on Jessica's face. Researchers asked mothers of one-year-old boys and girls to participate in an experiment in which an interesting but forbidden toy was placed on a small table in the room with them. Each mother was told to signal fear and danger with only her facial expressions, indicating that her child should not touch it. Most of the girls heeded their mother's facial warning, but the boys seemed not to care, acting like they were magnetically pulled toward the forbidden object. Their young male brains may have been more driven than the girls' by the thrill and reward of grabbing the desired object, even at the risk of punishment. And this also happens with fathers. In another study, with dads and their one-year-olds, the boys tried to reach forbidden objects more often than the girls. The fathers had to give twice as many verbal warnings to their sons as to their daughters. And researchers found that by the age of twenty-seven months, boys more often than girls will go behind their parents' backs to take risks and break rules. By this age, the urge to pursue and grab items that are off-limits can become a hair-raising game of hide-and-seek—with parents hiding the danger their sons will inevitably seek.

When David was three and a half, Jessica told me that he never ceased to amaze her, both for better and for worse.

“He picks me flowers, tells me he loves me, and showers me with kisses and hugs. But when he gets the urge to do something, the rules we’ve taught him vanish from his mind.” She told me that David and his friend Craig were in the bathroom washing up for dinner when she heard Craig yell, “Stop it, David. I’m peeing.” Then she heard the distinct sound of the hair dryer. *Danger* flashed through Jessica’s brain. Racing down the hall, she flung open the bathroom door just in time to get a splash of urine on her legs. David had turned the blow-dryer on his friend’s stream—just to see what would happen. But being sprayed with urine didn’t upset her nearly as much as David’s disregarding the “no electrical appliances without adult supervision” rule. For the next couple years, she had to keep all electrical appliances well out of David’s reach. But, she told me with a slight blush, “There’s one thing I can’t keep out of his reach, even in public.”

Playing With His Penis

David thought nothing of grabbing and playing with his penis—anytime, anywhere. A boy’s public relationship with his penis is something that has made many mothers wince, including me. But the male brain’s reward center gets such a huge surge of pleasure from penis stimulation that it’s nearly impossible for boys to resist, no matter what their parents threaten. So rather than trying to stop David, I suggested Jessica start teaching him to explore this compelling pleasure in the privacy of his room.

A few weeks after Jessica started trying to get David to play with his penis in “privacy,” the family went on vacation. As they were walking down the hallway in their hotel, David saw a sign hanging on the doorknob of the room next-door and asked, “Mom, what does P-R-I-V-A-C-Y say?” When Jessica said the word out loud for him, he said, “Oh, that

man must be doing *his privacy* in there." From then on, he'd refer to playing with his penis as "doing my privacy."

Boys' Toys

Later that year, when David came into the office with Jessica, I handed him a lavender toy car from an assortment I had in a shoe-box. He frowned as he said, "That's a girl car." Tossing the car back into the box, he grabbed the bright red car with black racing stripes, saying, "This is a boy one!" Researchers have found that boys and girls both prefer the toys of their own sex, but girls will play with boys' toys, while boys—by the age of four—reject girl toys and even toys that are "girl colors" like pink.

I didn't know this when my own son was born, so I gave him lots of unisex toys. When he was three and a half years old, in addition to buying him one of the action combat figures he was begging for, I bought him a Barbie doll. I thought it would be good for him to have some practice playing out nonaggressive, cooperative scenarios. I was delighted by how eagerly he ripped open the box. Once he freed her from the packaging, he grabbed her around the torso and thrust her long legs into midair like a sword, shouting, "Eeeehhhg, take that!" toward some imaginary enemy. I was a little taken aback, as I was part of the generation of second-wave feminists who had decided that we were going to raise emotionally sensitive boys who weren't aggressive or obsessed with weapons and competition. Giving our children toys for both genders was part of our new child-rearing plan. We prided ourselves on how our future daughters-in-law would thank us for the emotionally sensitive men we raised. Until we had our own sons, this sounded perfectly plausible.

Scientists have since learned that no matter how much we adults try to influence our children, girls will play house and dress up their dollies, and boys will race around fighting