

Book Club The Female Brain

By Louann Brizendine, M.D.



Empowering Women
in Leadership
LCI

Why study this book?



THE FEMALE BRAIN

Louann Brizendine, M.D.

Survey feedback indicated the members are looking for content that specifically addresses the female context.

Very few studies have been done on the female brain chemistry before the 1990's.

The book explains the nature and experience of the female brain as women pass through life stages, helps men better understand the girls and women in their lives and more.

Let's explore how brain chemistry and physiology impact how we show up in the workplace.

About the Author



Louann Brizendine, M.D.

- Conclusive studies show that women suffer from depression at a ratio of 2:1 compared to men
- Until puberty, depression rates between boys and girls are the same
- Intrigued by the role that hormones and brain chemistry might play, Louann began to this line of research
- This book brings together 20 years of research and clinical practice as a neuropsychiatrist

Education

- Neurobiology – University of California, Berkley
- Medicine – Yale
- Psychiatry – Harvard Medical School
- University College, London

Professional

- Teaching – Harvard
- Langlely Porter Psychiatric Institute – University of California, San Francisco
- Founder – Woman's Mood and Hormone Clinic

Brain Science Advancements



- Technology now allows us to see the inner workings of the brain
 - PET positron-emission tomography
 - fMRI functional magnetic resonance imaging
- Women use different parts of the brain and different circuits than men to accomplish the same tasks, including solving problems, processing language, and generally experiencing the world
- Biology may set the stage for our tendencies, but the brain is a talented learning machine

Basic Differences

More than 99 percent of human genetic coding is the same

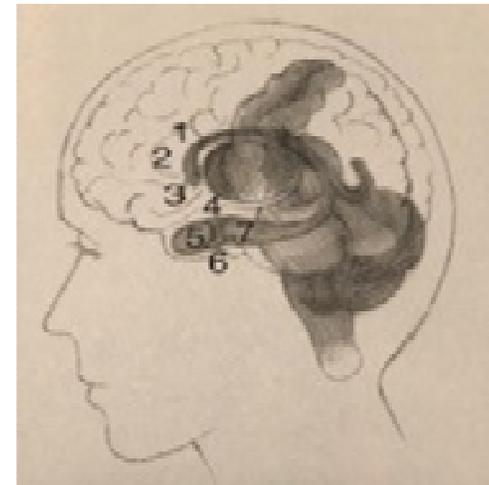
Male Brains are larger by 9%
Male and female brains have the same number of cells but female brain cells are more densely packed

Male brains have more processors in the areas of the brain which regulate fear and aggression

Studies have shown that men think about sex on average every 52 seconds, while for women it is once a day

Women have 11% more neurons in the areas of the brain dealing with language and hearing

The memory center, hippocampus, is also larger in women



1. Anterior Cingulate Cortex (ACC): weighs options, makes decisions, worries
2. Prefrontal Cortex (PFC): rules the emotions
3. Insula: processes feelings
4. Hypothalamus: hormone center controls glands
5. Amygdala: instinctual core
6. Pituitary gland: produces hormones of fertility
7. Hippocampus: memory center

Baby Female Brain



Male brains are flooded with testosterone at 8 weeks

- Kills off cells in the communication center
- Fuels growth of cells in the aggression center

Female brains don't have this surge, instead they have estrogen

- Communication center and emotional processing connections continue to grow
- Baby girls display great skills in recognize emotional cues and empathy
- Girls tend to look for more social reassurance, connection and are sensitive to the state of their mother's nervous system
- Girls tend to talk more than boys which tends to continue into adulthood

Infantile puberty ends at age two and a half

Teen Girl Brain



At puberty, a girl's thinking and behavior changes according to the fluctuating levels of:

- estrogen (one of the 'feel good' hormones)
- progesterone ('the brain's valium')
- Testosterone ('the assertive hormone')
- cortisol (the stress hormone)

Other important hormones produced are:

- oxytocin (which makes us want to bond, love and connect with others)
- dopamine (stimulates the brain's pleasure centers)
- **Girls Brains mature 2-3 years earlier**
- **Genetic and hormonal links to depression**
 - In families with CREB-1 gene mutations, girls show a higher rate of depression than males

Reactions to Stress

Fight or Flight



Tend and Befriend

Maintaining relationships
helps survival

Advanced language and
communication preferences

Oxytocin boosted by social
contact and connections
with friends

Mommy Brain



- In modern society where women are responsible for supporting children and giving birth to them, many women feel the conflict
 - For as long as a child is under her roof, her brain circuits are dedicated to tracking that child
- Nursing mothers go through withdrawal when weaning their babies
 - Oxytocin and dopamine levels are no longer boosted with nursing
 - Returning to a stressful workplace



Emotion: The Feeling Brain



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- Women's mature communication centers pickup the smallest emotional clues 90% of the time
 - Men pick up clues only 40% of the time and are often surprised by the emotional outbursts of others
 - Men are more likely to register emotions and detailed memory when angry or threatened
 - Anger processing variations
 - The male amygdala has testosterone receptors which heighten response to anger
 - Women tend to talk out their anger with a third party

The Mature Female Brain



- **Hormone levels begin to stabilize**
 - Less worried about pleasing others
 - Caretaking brain circuits lessen when physical contact with children is reduced
- **Renewed interest in career, hobbies and personal contributions**
- **Grandmothers play a key supportive role**
- **Late 19th Century average age of death for women in the US was 49**
 - Two years before the typical woman enters menopause

The Future of the Female Brain



“Understanding our innate biology empowers us to better plan our future.”

Louann Brizidine

“Pretending that women and men are the same, while doing a disservice to both men and women, ultimately hurts women. Perpetuating the myth of the male norm means ignoring women’s real, biological differences in severity, susceptibility, and treatment of disease.”

“Assuming the male norm also means undervaluing the powerful sex-specific strengths and talents of the female brain.”

Break Out Session



- What is the best way to reconcile the fact that most girls shun conflict while boys often enjoy it?
 - What are the benefits and challenges of this contradiction?
 - How do the adult manifestations of these features play out in the workplace?
- With a better understanding of the inherently different communication styles possessed by men and women, can relationship woes be eased?
 - Or is the communication gulf cause for despair?
- What predictions can you make about shifting perceptions of gender wars in a culture that becomes more aware of neuroscience?
 - How will the idealized and the fully realized woman be re-defined by our daughters?
- What is the effect of reading about personal, often emotional topics through the lens of science?
 - What disputes in previous generations could have been resolved with our current scientific knowledge about gender differences?
- Which stage currently matches your status (or that of the females in your life) in Dr. Brizendine's chart, "Phases of a Female's Life"?
 - In what ways does the chart help explain past behavior and predict future responses?

Resources



- The Male Brain

- <https://cisindus.org/2021/02/06/the-male-brain-a-book-review/>