

CHANGE YOUR BRAIN CHANGE YOUR

life

Change Your
Developing
Mind for Real-
World Success

BEFORE

25

Jesse Payne, Ed.D.

Foreword By **Daniel Amen, M.D.**, *New York Times*
bestselling author of *Change Your Brain, Change Your Life*

Contents

Foreword by Daniel Amen, M.D. v

Introduction vii

Part I: The Brain Before 25 **1**

1 BRAIN FACTS 3

2 THE BRAIN BEFORE 25 21

3 ANTICS AND THE PREFRONTAL CORTEX 33

4 THE CINGULATE GYRUS AND
COGNITIVE FLEXIBILITY 47

5 EMOTIONS AND BONDING:
MEET THE LIMBIC BRAIN 59

6 ANXIETY AND THE BASAL GANGLIA 71

Part II: The Young Brain in the Real World **83**

7 THE DEVASTATING IMPACT OF
DRUGS AND ALCOHOL 85

8 OTHER WAYS WE HURT THE BRAIN 103

9 WHEN THE BRAIN STRUGGLES 119

10 GETTING TO KNOW OTHER PEOPLE'S BRAINS 137

11 ADAPTING YOUR BRAIN TO
THE BRAINS OF OTHERS 149

Part III:		
How to Change Your Brain and Change Your Life (Before 25)		163
<hr/>		
12	HOW TO SHAPE THE YOUNG BRAIN	165
13	KILL THE ANTS	175
14	EAT RIGHT TO THINK RIGHT	189
15	BODY TIME TO BOOST THE MIND	205
16	WORKING THE BRAIN TO BE SMARTER	213
17	RELAXING THE BRAIN	227
18	THE TWO-WEEK BRAIN SMART PLAN	237
	Conclusion	267
	Acknowledgments	271
	References	273
	Index	283

Introduction

I was twenty-one years old, sitting in the office of Dr. Daniel Amen, a medical doctor, a world-renowned and award-winning psychiatrist, a *New York Times* bestselling author and . . . the father of my girlfriend.

Even though I am more than a foot taller than he is, I felt intimidated as he reviewed the scans he had just taken of my brain. I had been dating his daughter for a little more than a year, and apparently, agreeing to having a detailed scan of the brain was a requirement for anyone who had dated one of his daughters for any significant amount of time. He said it was to make sure that everything “looked okay.” Riiight.

It was like a twisted version of the scene in *Meet the Parents* when Robert De Niro sweats out Ben Stiller—except this was very real. Plus, this wasn’t a lie detector test. This man could actually peer straight into the inner workings of my brain.

As he gazed down at the images and data from my scans, I saw his forehead wrinkle as he frowned ever so slightly. “Hmmm,” he said. This was not a good start. “I see that you can be pretty stubborn and argumentative at times. Does this sound about right?” he asked.

I knew that my response would shape the rest of this conversation, and possibly the future of my relationship with the girl I had fallen in love with. And yet instinctively, before I realized I was doing it, my arms folded across my chest. “No. I wouldn’t say that I’m stubborn at all.” My reply had an undeniable tone of defensiveness.

A hint of a smirk appeared at the corners of his mouth. “Are you sure about that?” he asked.

Ugh. My brain had betrayed me.

It was the first time I saw a connection between my brain and how it was related to my thoughts, feelings, actions and behaviors. More important, it occurred to me in that moment that if my brain determined my behavioral tendencies, perhaps the power went both ways and I could have some control over how my brain worked. The prospect gave me hope for my future.

Before I met Dr. Amen or his daughter, my life had not exactly been a stroll in the park. My mother and paternal grandmother were illegal immigrants from Mexico, and my parents were both high school dropouts. As a child, I endured physical, emotional, psychological and even sexual abuse. My mother suffered a nervous breakdown when I was four, a result of her struggle with schizophrenia, delusions and hallucinations. My parents divorced when I was eight, and I spent much of my childhood moving from place to place, living on welfare and food stamps. I still remember the day my mother kidnapped me from my father and led police on a high-speed chase through the streets of Fresno, California. My father, for his part, struggled with ADD, depression and anxiety until he gave up and committed suicide.

Yet, while I saw many people in my life lose their way, I never did. Somewhere inside of me, a fire always burned. I knew that I wanted to better myself and my situation. I wanted more out of this one life I was given here on Earth.

I can remember when I realized as a young child that applying dedication, perseverance, critical thinking skills and hard work to every challenge I faced was my ticket to a better life. As I watched many of my friends and family succumb to drugs or wind up in jail, I put my head down and studied hard. I worked on building strong personal relationships and developing innovative, creative outlets for my talents. I knew all these things would allow me to live the life I wanted for myself, and for my future family.

It worked, too. I graduated from high school with honors, and I was the first person in my family to receive a college degree. I went on to receive a master's degree and ultimately earned a doctorate degree from USC. Today I am healthier, wealthier and happier than I thought I could ever be.

I've tried to dedicate my life to helping young people realize they do not have to be held hostage by their circumstances. As cliché as it sounds, I have tried to show others that if a poor Mexican boy with crazy parents can make it, anyone can.

I'm not saying any of this was easy. I too often found myself fighting the urge for rebellion and chaos. It was hard to resist the temptation to have fun in the present at the expense of the future. It could be a challenge staying focused on the right things and what was best for me. But by using many of the strategies I outline in this book, I was able to rise above the tougher side of life and achieve my dreams.

After that fateful day with Dr. Amen, who would later become my father-in-law, I began to work with him in the Amen Clinics, where I eventually became the director of education and human resources. I worked closely with Dr. Amen to create the Making a Good Brain Great high school course, which is now in more than four hundred schools across the country. The course teaches teenagers to better understand their brains and to do less harmful things to them. And I've spent the past six years teaching brain science to students in high schools and colleges around the country.

My hope is that this book will empower you to harness the amazing capacity and potential of your brain, which I have experienced firsthand both personally and in my research. The young, developing brain is a marvel to behold, and if you take steps to care for it now, you will lay down the foundation for success in your future. The most exciting part of this is that just about anyone can work hard to change their brain and change their life. I am a living testament to this.

I didn't use my past as an excuse. I became empowered to change my brain, change my life and become the outlier of my circumstances. You, too, can learn how to change your brain and change your life. Let's get started!

Part I

The Brain Before 25

1 BRAIN FACTS

For a long time, the brain has been the redheaded stepchild of the human body. Think about what you learned about the brain in school. More often than not, any lessons about the human brain entailed a long list of vocabulary words and facts about brain structures, neurons and dendrites that were boring and difficult to grasp. I would also guess that there probably wasn't any explanation of what these various brain structures actually do and how they affect you in your own life.

If this sounds similar to what you experienced in school, then get angry and prepare to start a revolution. The fact that we are not taught about the amazing complexity of the human brain, the importance of helping it work right, and the connection between our brain and our life is insane. When you begin to grasp some of the practical and easily understood brain basics, you will be amazed to learn that you have the power to improve your brain and have a better life. By understanding the inner workings of your brain and how they relate to all aspects of your life, you'll begin to understand why you are the way you are, and why you act the way you act. Your tendencies, your struggles,

your personality—all of these come from your brain. But it's not like you're just born with the brain you have and you've got that brain your whole life. Once you realize that, the amount of power and influence you have over the functioning of your own brain—and, by association, your life—becomes clear. This is when the magic happens.

Of course, before you become the master of your brain, it is important to start with the brain basics. The eight brain facts in this chapter may appear absurdly simple and commonsensical. Well, this is true, and that's the beauty of it. What you will find after reviewing each of these brain basics (information that's based largely on the work I did with Dr. Amen during my time at the Amen Clinics) is that you have probably never stopped to put it all together. Perhaps you've known this information all along, but when you couple it with the powerful program in this book that will help you change the way your brain works, things will begin to click. And you will undoubtedly give your brain the respect it deserves.

Before you read any further, take the Brain Systems Quiz, which was adapted from the work I have done with Dr. Amen, to give you better insight into which parts of your brain might be contributing to some of the frustrations and/or struggles in your life. Please rate yourself honestly on each of the items in the list. Follow the instructions at the end of the quiz to determine what your answers mean. After you've analyzed your answers, put the quiz aside. We'll come back to the results later on.

BRAIN SYSTEMS QUIZ

Please rate yourself on each of the behaviors listed below using the scale provided. If possible, have another person who knows you well (e.g., a parent, a significant other, a close friend) rate you, as well, in order to construct the most complete picture.

0	1	2	3	4
Never	Rarely	Occasionally	Frequently	Very Frequently

- ___ 1. Failure to pay close attention to details; tendency to make careless mistakes
- ___ 2. Trouble sustaining attention in routine situations (e.g., homework, chores)
- ___ 3. Trouble listening
- ___ 4. Failure to finish things; tendency to procrastinate
- ___ 5. Poor time organization
- ___ 6. Tendency to lose things
- ___ 7. Tendency to be easily distracted
- ___ 8. Poor planning skills and a lack of clear goals or forward thinking
- ___ 9. Difficulty expressing empathy for others
- ___ 10. Impulsiveness (saying or doing things without thinking first)
- ___ 11. Excessive or senseless worrying
- ___ 12. Upset when things do not go your way

- ___ 13. Upset when things are out of place
- ___ 14. Tendency to be oppositional or argumentative
- ___ 15. Tendency to have repetitive negative thoughts
- ___ 16. Tendency toward compulsive behaviors
- ___ 17. Intense dislike for change
- ___ 18. Tendency to hold on to grudges
- ___ 19. Upset when things are not done a certain way
- ___ 20. Tendency to say no without first thinking about a question
- ___ 21. Frequent feelings of sadness or moodiness
- ___ 22. Negativity
- ___ 23. Decreased interest in things that are usually fun or pleasurable
- ___ 24. Feelings of hopelessness about the future
- ___ 25. Feelings of worthlessness, helplessness or powerlessness
- ___ 26. Feelings of dissatisfaction or boredom
- ___ 27. Crying spells
- ___ 28. Sleep changes (too much or too little)
- ___ 29. Appetite changes (too much or too little)
- ___ 30. Chronic low self-esteem
- ___ 31. Frequent feelings of nervousness or anxiety
- ___ 32. Symptoms of heightened muscle tension
- ___ 33. Tendency to predict the worst

- ___ 34. Conflict avoidance
- ___ 35. Excessive fear of being judged or scrutinized by others
- ___ 36. Excessive motivation (e.g., can't stop working)
- ___ 37. Tendency to freeze in anxiety-provoking situations
- ___ 38. Shyness or timidity
- ___ 39. Sensitivity to criticism
- ___ 40. Fingernail biting or skin picking

ANSWER KEY

Questions 1–10 = Prefrontal cortex symptoms

Questions 11–20 = Cingulate symptoms

Questions 21–30 = Deep limbic system symptoms

Questions 31–40 = Basal ganglia symptoms

If you answered two to three questions related to a particular brain system with a 3 or 4, struggles in that part of the brain may be possible. If you answered four to five questions with a 3 or 4, problems in that brain system are probable. If you answered six or more questions with a 3 or 4, problems in that brain system are highly probable.

Brain Fact #1: You Are Your Brain

As profound as this might sound, the simple fact is that you are a construct of your brain. Let's think about this for a second. Your heart-beat, bodily functions, organs, movements, thoughts, moods, actions, reactions, interactions, personality, memories, health, spirituality, happiness, feelings, relationships, successes, energy, focus, creativity, failures, problem-solving skills, anxieties, diet, decisions, hurts and dreams are all dependent upon the moment-by-moment functioning

of the three-pound supercomputer housed within your skull. Your brain is involved in every aspect of your life. It controls everything.

Brain Fact #2: Your Brain Is Ridiculously Complex

As much as we have learned about the brain in just the past decade, we still have not even scratched the surface of understanding how incredibly complicated the human brain is. In fact, many argue that there is nothing in the universe more complicated than the human brain. *Nothing.*

Your brain is estimated to have more than one hundred billion neurons within it, and these neurons have trillions of supporting cells. To complicate things further, each of these trillions of supporting cells can have as many as forty thousand connections (called synapses) between them. This means that a piece of your brain tissue the size of a *grain of sand* has more than one hundred thousand neurons with more than one billion synapses all talking to one another. The critical consensus is that there are more connections in your brain than there are stars in the known universe.

The brain is estimated to hold the equivalent of about six million years' worth of the *Wall Street Journal*. Information travels through your brain at an impressive 268 miles per hour. And although your brain accounts for only about 2 percent of your body's weight, it burns nearly 30 percent of the calories you consume. When we look at the overall temperature of the organs in the human body, the brain is like a massive heat center, burning energy from the food you give it. It works faster and harder than any other organ to manage everything it is responsible for. (This means that you literally are what you eat. Chapter 14 will give you much more insight into the power of food and how it can aid in the healing or hurting of your brain.)

Continue reading
*CHANGE YOUR BRAIN,
CHANGE YOUR LIFE (BEFORE 25)*

Order your copy at one of these retailers

amazon.com[®]

BARNES & NOBLE
BN.com

BAM![™]
BOOKS·A·MILLION

INDIE
BOUND 

kobo


Walmart 
Save money. Live better.



CHANGE YOUR BRAIN, CHANGE YOUR LIFE (BEFORE 25)

ISBN: 978-0-373-89292-1

© 2014 by Jesse J. Payne

All rights reserved. The reproduction, transmission or utilization of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the written permission of the publisher. For permission please contact Harlequin Enterprises Limited, 225 Duncan Mill Road, Don Mills, Ontario, Canada, M3B 3K9.

The health advice presented in this book is intended only as an informative resource guide to help you make informed decisions; it is not meant to replace the advice of a physician or to serve as a guide to self-treatment. Always seek competent medical help for any health condition or if there is any question about the appropriateness of a procedure or health recommendation.

Brain Systems Quiz on pages 5, 168 and 263 copyright © 2014, Amen Clinics, Inc.

Library of Congress Cataloging-in-Publication Data

Payne, Jesse J. (Jesse Jeremy)

Change your brain, change your life (before 25) : change your developing mind for real-world success / Jesse J. Payne, Ed.D.

pages cm

Includes bibliographical references and index.

ISBN 978-0-373-89292-1 (alk. paper)

1. Mental illness—Physiological aspects. 2. Brain—Pathophysiology.

3. Neuropsychiatry—Popular works. 4. Mental efficiency—Popular works. I. Title.

RC455.4.B5P39 2014

616.8—dc23

2013038937

® and TM are trademarks owned and used by the trademark owner and/or its licensee. Trademarks indicated with ® are registered in the United States Patent and Trademark Office, the Canadian Intellectual Property Office and/or other countries.

www.Harlequin.com

Printed in U.S.A.