

Extinguishing Anxiety:

Whole Brain Strategies to Relieve Fear and Stress

Catherine M. Pittman, Ph.D., HSPP

Elizabeth M. Karle, MLIS

Foliadeux Press, LLC
South Bend, Indiana

Every effort has been made to ensure that the information contained in this book is accurate and authoritative. It is not the intent of the publisher or of the authors to provide psychological or medical services to the individual reader. The ideas, procedures, and suggestions contained in this book are not intended as a substitute for consulting with your physician or therapist. Neither the authors nor the publisher shall be liable or responsible for any loss or damage allegedly arising from any information or suggestion in this book.

Copyright © 2009 Catherine M. Pittman and Elizabeth M. Karle.

All rights reserved. Published in the United States of America by Foliadeux Press, LLC, South Bend, IN.

For ordering information contact:
www.extinguishinganxiety.com

Pittman, Catherine M.

Extinguishing anxiety : whole brain strategies to relieve fear and stress / by Catherine M. Pittman and Elizabeth M. Karle.

p. cm.

Includes bibliographical references and index

ISBN-13: 978-0-615-30904-0 (pbk.)

1. Anxiety – Treatment. 2. Behavior therapy.
3. Cognitive therapy. I. Karle, Elizabeth M. II. Title.

BF 575 .A6 P58
152.4

10 9 8 7 6 5 4 3 2 1

Contents

1. About this Book	1
2. Understanding What Causes Anxiety	8
3. How the Brain Creates Anxiety	26
4. Fear and Anxiety in the Body	51
5. Exposure-Based Treatment: Rewiring Your Brain	68
6. Exposure-Based Treatment: Factors to Consider	87
7. Relaxation and Exercise	102
8. Know Yourself and Your Triggers	124

9. Brain Medicine	144
10. Cognitive Approaches: Using the Higher Levels of Your Brain	170
11. Putting It All Together: A Whole Brain Approach to Anxiety	193
12. Change Your Mind to Change Your Brain	205
Appendix A: Diagrams	219
Appendix B: Relaxation Exercises	221
Appendix C: Imagery	226
End Notes	229
References	235
Index	247

Chapter 1

About this Book

Do you need this book?

If you regularly struggle with anxiety or have been diagnosed with an anxiety disorder, you are facing a complex and challenging phenomenon. Anxiety is a multifaceted experience, affecting not only your emotions, but your thoughts, your behaviors, and your physical health. For most people, every day is complicated by some form of stress or anxiety. Some people only experience anxiety occasionally, but they find it limiting when it does occur. Other people find that worries fill their daily lives with discomfort. Whatever your specific experience of anxiety, this book will assist you in finding relief. Strategies to help you overcome anxiety are plentiful. We will show you how to make use of a variety of treatment methods that have been scientifically proven to be the most effective.

This book is designed to provide you with specific approaches that will actually *change your brain*. For this reason, a therapist may recommend this book to assist you. You will find relief and not be controlled by your anxiety if you are willing to learn how anxiety is created by your brain and how to use your whole brain to cope. Understanding the true nature of anxiety and setting meaningful, reasonable goals for yourself will be essential; this book will assist you in this two-step

2 Extinguishing Anxiety

process. Our “whole brain” approach gives you specific strategies to use in order to cope with anxiety so that you can lead a more satisfying, even joyous, life.

What’s New about Anxiety?

In the last decade, compelling new research has focused on the causes and treatment of anxiety. New technologies such as MRI, fMRI, and PET scans provide detailed information about the brain, and reveal the live brain in action, as we could never see it before.

Scientists now have a much more sophisticated understanding of how fear and anxiety develop. Perhaps even more significantly, they are discovering how the brain learns to *overcome* anxiety. New evidence suggests why anxiety affects some people in certain ways and not others. All of this is good news for those who suffer from anxiety, including those with disorders such as post-traumatic stress disorder, phobias, obsessive compulsive disorder, panic disorder, agoraphobia, and social anxiety disorder. No matter what the specific diagnosis, the underlying brain processes that lead to anxiety-related problems are similar, and operate in a relatively consistent manner.

As the basis for this book, we reviewed the currently evolving research on the neurophysiology of anxiety, as well as research on the most effective treatments. We integrated this information and filtered it through our own experiences to select what is most pragmatic and meaningful for those coping with anxiety on a daily basis. We think you will be as excited as we were when we recognized that in the past decade,

many of the processes in the brain that create anxiety have been identified.

Because we now have a better understanding of how different parts of the brain acquire and maintain anxiety, we can make specific recommendations about how to approach treatment. In the past, treatments primarily focused on suppressing anxiety. We are learning, however, that it is more effective to train the brain to *resist* anxiety.

New evidence offers brain-based reasons why certain treatment methods work, and others are likely to fail. In addition, research shows why some of the oldest treatments for anxiety are still the best - while several of the most popular approaches (including some medications) are less than ideal given certain limitations in the brain's circuitry. We also recognize that different treatments are needed for different dimensions of anxiety; for example, an approach that helps to prevent anxiety provides little assistance in the midst of a panic attack.

We reviewed research from hundreds of studies and distilled what we learned into clear explanations, presented in brief, manageable sections. Each section is designed to help the reader comprehend specific points that are important in an overall understanding of anxiety. Therapists often find our descriptions and illustrations useful in explaining to their clients the nature of anxiety and the effects of certain treatments.

Our goal is to describe what is happening behind-the-scenes in the brain and what really works to change the brain's circuitry. We show you steps to take to actually "rewire" your brain to create a lasting change.

4 Extinguishing Anxiety

What Will You Learn?

The two key components to address in order to transform the anxious brain are *the brain's circuitry* and *the individual's thoughts and beliefs*. Cognitive behavioral therapy, considered by researchers around the world to be an effective form of treatment for anxiety,¹ focuses on both of these areas. Brain-imaging research shows that cognitive behavioral therapy results in changes in the brain in the areas involved in regulating fear and anxiety responses.² Cognitive behavioral techniques are incorporated into our “whole brain” approach. We want you to understand how and why these techniques are most effective against anxiety.

In order to change your anxious brain, you need to realize that there are emotional centers in your brain, as well as thought centers. And just as these distinct parts of the brain contribute to fear and worry, they also offer us a means to reduce anxiety. For example, you will become familiar with the **amygdala**, an emotional center that plays a large role in creating fear and anxiety. Using techniques that focus on the amygdala, you will discover how to design effective approaches to *bypass* or alter your brain's fight or flight circuitry. We will explain how fear is learned and how to overcome it through a process called **extinction**.

Perhaps most importantly, you will discover the power of **exposure-based therapy**. Just as physical therapy promotes healing in an injured body, exposure therapy promotes learning in the brain. Study after study shows that exposure therapy is effective.³ We

explain how you and your therapist can use it to “rehabilitate” or “re-wire” the specific parts of your brain that are creating anxiety. We also discuss how the thought centers in the brain, including the cortex, can be used to modify your brain’s thinking processes to enable you to resist anxiety and minimize its effects.

In later chapters, we present the most recent information on the effects of various medications used to treat anxiety, and identify the strengths and limitations of each type. We examine how these medications might impact the course of treatment by focusing on how they affect brain processes - and considering that they have been studied primarily with short-term results in mind. With your doctor’s guidance, this knowledge will help you to use medications in the most strategic and beneficial way: as one aspect of your overall treatment program.

By approaching anxiety and treatment from a variety of perspectives, we will show you how to use your whole brain to most effectively reduce your anxiety.

Why Will this Approach Work?

Why do we believe that our approach to managing anxiety will improve your quality of life? Our philosophy is that once the mystery of how something works is revealed, its power over you is reduced. We also trust that if you understand how various strategies impact the processes creating anxiety in your brain, including why they work, you will be more motivated to do what it takes to master your anxiety. You will be

6 Extinguishing Anxiety

empowered by your knowledge, and no longer be a slave to your emotional reactions.

Already, numerous individuals have used the strategies in this book to improve their lives. For example, one man overcame his fear of crowds and resumed attending church services after years of avoidance. A woman with a history of poor attendance at work due to her fear of driving saw her absenteeism steadily decrease. Another woman recognized her arguments with her husband stemmed from her anxiety about attending family functions, and greatly improved her marriage by combating her anxiety, rather than her husband.

The organization of this book is designed to present information clearly, in compact portions that you can readily use. Occasionally, you will be asked to pause and “*Consider This*” in order to allow you to relate what you are learning to your own experiences. Please recognize that all of the chapters convey important information that is essential to learning how to manage anxiety. Trust us when we encourage you to read each section thoroughly to get the whole brain picture.

In some sections, we use scientific terminology to describe brain structures and processes so that you can use this book as a reliable reference tool. Note that we strive to give explanations and examples that make the complicated experience of anxiety easier to understand. It is our hope that by clearly explaining the latest theories and research on the causes and treatment of anxiety, we provide you with useful, cutting-edge information. This knowledge is very powerful.

Extinguishing Anxiety 7

Recognize that the more knowledge you have about your anxiety, the more power you have to defeat it. Not everyone will understand you or fully comprehend the anxiety you suffer. Your life will improve immeasurably, however, if YOU understand your anxiety on a neuropsychological level and take steps to gain control. Our whole brain approach will help you to manage your anxiety more successfully, and to live a happier, more productive life.

Topic Index

This index is intended to help you to locate specific information regarding key terms, concepts and images.

- acceptance, 208
- Activate to Generate, 77-99, 202
- alcohol, 64, 197
- amygdala, 4, 10, 26, 55
 - diagram, 31
 - image, 10, 26, 56, 91, 171
 - Language of, 33, 43-48, 60, 68, 74, 101, 130, 175-177, 193, 201, 207
 - life without, 48-49
- anticipation, 186-187
- Anxiety Channel, 179-180, 183-186, 201, 213-214
- Anxiety-Provoking Situations Worksheet, 126
- associations, 33-46, 68, 76, 174-177

- benzodiazepines, 153-156
- beta-blockers, 161-165
- breathing, 105
 - diaphragmatic, 106-107
- Buspar, 165-168
- bypass, 4, 12, 70-72, 80-100
 - diagram, 83

- caffeine, 197
- catastrophize, 142, 190
- cerebral cortex, 59-61, 171-174, 193-194
 - image, 10, 91, 171
- classical conditioning, 33-37
- cognitions, 170-192
- conditioning, 37
- context, 92
- coping responses, 96

- copied thoughts, 139, 179, 182, 195, 201

- D-cycloserine, 167-168
- distraction, 65, 184
 - during exposure, 185
- Don't Erase – Replace, 184

- environment, 15-25
- exercise, 116-123
- exposure, 68-86, 87-101, 201-202, 204
- exposure-based treatment, 4, 68-86, 87-101, coping thoughts for, 139
- exercises, 124-140, 201-202
- factors to consider, 87-101, 131, 138, 141, 186
- interoceptive, 142-143
- express lane, 27-29, 34, 172, 175
 - diagram, 28
- extinction, 4, 75-86, 99, 124-143

- flooding, 71-73, 79, 131, 138
- freeze/fight/flight response, 51-54, 62, 102-104, 116-117, 162-163

- generalization, 69, 86, 126
- genetics, 15-25
- goals, 1, 74, 128-33, 193-96, 201
 - hierarchy, 133

- hierarchy, 131-135, 201
 - template, 134
 - what not to do, 141

248 Index

- high road, 27-29
- higher order conditioning, 47
- hyperventilation, 64, 106
- hypothalamus, 10, 56-58

- imagery, 112-113, 175, 221, 226-228
- internal sensations, 125
- interoceptive exposure, 142-143

- local lane, 27-29, 34, 171, 175
 - diagram, 28
- low road, 27-29

- medication, 93-94, 144-149, 197
 - benzodiazepines, 153-156
 - beta-blockers, 161-165
 - Buspar, 165-168
 - D-cycloserine, 168-9
 - SSRIs, 156-161
 - side effects, 150-153
 - with cognitive approaches, 187-189
- meditative practices, 113
- mindfulness, 209-212

- negative event, 36-48, 176

- pairing, 34, 36-48
- panic attack, 61-67
- parasympathetic nervous system, 103
 - image, 104

- play, 191
- practice, 70-74, 85, 99, 204
- prefrontal cortex, 60, 90
 - image, 10, 91, 171
- progressive muscle relaxation, 104, 110-111, 221-225

- relaxation, 102, 108-110, 112-116, 200, 202-203

- safety-seeking behaviors, 95-99, 141-142, 202, 204
- selective serotonin reuptake inhibitors (SSRIs), 156-161
- self-defeating thoughts, 179-181, 200, 203
- sensory cortex, 28-30
- Serenity Prayer, 205
- shoulds, 181-183
- side effects, 150-153
 - see specific medications
- stress, 52
 - stress response, 52
- sympathetic nervous system, 57, 103
 - image, 104
- systematic desensitization, 71-73, 124-143

- temporal relationship, 35, 124
- thalamus, 27-29
- triggers, 36-48, 124-128, 176, 201, 204, 219-220