

CHILDREN *with* STARVING BRAINS

A MEDICAL
TREATMENT GUIDE for
AUTISM SPECTRUM
DISORDER

JAQUELYN McCANDLESS, MD

With Contributions by
Teresa Binstock, and
Jack Zimmerman, PhD

Copyright © 2002 by Jaquelyn McCandless

All rights reserved. No part of this book may be reproduced in any manner whatever, including information storage, or retrieval, in whole or in part (except for brief quotations in critical articles or reviews), without written permission from the publisher.

For information please contact:
Bramble Books
E-mail address: brambooks@att.net

Library of Congress Cataloging-in-Publication Data

McCandless, Jaquelyn.

Children with starving brains : a medical treatment guide for autism spectrum disorder / Jaquelyn McCandless ; with contributions by Teresa Binstock and Jack Zimmerman.

p. ; cm.

Includes bibliographical references.

ISBN 1-883647-09-6 (alk. paper)

1. Autism in children. 2. Autistic children—Rehabilitation. 3.

Parent and child.

[DNLM: 1. Autistic Disorder—therapy—Child—Popular Works. 2. Autistic Disorder—etiology—Child—Popular Works. 3. Complementary Therapies—Child—Popular Works. 4. Diet Therapy—Child—Popular Works. WM 203.5 M4775c 2002] I. Binstock, Teresa. II. Zimmerman, Jack, PhD. III. Title.

RJ506.A9 M425 2002

618.92'898203—dc21

2002007995

Cover art: Ken Bennett

First Printing 2002

1 3 5 7 9 10 8 6 4 2
02 04 06 08 00 09 07 05 03

Printed in Canada



The paper used in this publication meets the minimum requirements of
American National Standard for Information Sciences—
Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984

CONTENTS

About the Author	xi
Preface and Acknowledgements	xii

INTRODUCTION

Children With Real Medical Illnesses.....	1
A Message of Hope	1
Defeat Autism Now! (DAN!)	3
What Can a Parent Expect From Bio-medical Interventions?.....	5
My Personal and Professional Involvement in the Bio-medicine of Autism	8
Description of the Book	11

PART I

THE FOUNDATION FOR A BROAD SPECTRUM BIO-MEDICAL APPROACH TO AUTISM SPECTRUM DISORDER	15
---	-----------

ONE

Causation Models	15
The Worldwide Autism Spectrum Disorder (ASD) Epidemic	17
Definition of ASD and Incidence of Classic vs. Regressive Autism.....	17
What Causes Autism and Other ASDs?	18
Simply Genetic?	20
The Toxic Chemical Model	21
The Heavy Metal Contamination Model	22
Vaccinations.....	24
The Auto-immunity/Allergy Model	27
The Viral Model	29
The Gluten/Casein, Enzyme Deficiency and Yeast Overgrowth Model	30
The Metallothionein Theory.....	32
How Models of Causation Lead to Treatments That Work	33

TWO

Gastrointestinal Pathology–Nutritional Deficiencies 37

Nutritional Deficiency as a Common Denominator	37
Causes of Gastrointestinal Problems in ASD Children.....	40
How the Immune and GI Systems Interact.....	41
How Yeast Overgrowth Can Injure the Gastrointestinal System ...	43
“Leaky Gut”, Increased Permeability	
of the Intestinal Mucosa and Malabsorption.....	44
Further Notes on the Mercury/Vaccine Connection	47
Putting the Puzzle Pieces Together	47

THREE

Impaired Detoxification, Toxic Accumulations, and Politics 51

Toxic Threats to Child Development.....	51
The Mechanism of Heavy Metal Toxicity	55
Specific Heavy Metals: Lead and Mercury	55
Lead.....	55
Mercury.....	56
Mercury in Vaccines	58
The Saga of Several Autism Parents and “Parent Power”	61
Susceptibility, Timings and Thresholds	63

PART II

DIAGNOSIS AND TREATMENT65

FOUR

Clinical and Diagnostic Evaluation 67

Bio-Medical Evaluation	68
Family and Medical History.....	68
Pre-testing Considerations.....	70
New Diagnostics in ASD Based on Screening.....	71
Initial Strategies in Test Evaluation	72
More Tests; New Philosophy.....	73
Parents, Doctors, and Testing Philosophy.....	74
Descriptions of Specific Laboratory Tests.....	76
Necessary Preliminary Screening Tests.....	76
Complete Blood Count (CBC)	
with Differential and Platelets.....	76
Comprehensive Chemistry (or Metabolic) Panel.....	76

PART ONE

The Foundation
for a Broad Spectrum
Bio-Medical
Approach to
Autism Spectrum
Disorder

ONE

CAUSATION MODELS

The Worldwide Autism Spectrum Disorder (ASD) Epidemic

Could changes in diet calm your child and help him or her return to the world, pay attention, and behave better? Could the addition of certain nutrients help your child make giant leaps in developing vocabulary? Could the removal of mercury and heavy metals from his or her body set the stage for outgrowing the Autism Spectrum Disorder (ASD) diagnosis?

Yes. These treatments, sometimes individually but most often in combination with one another, have enabled some children to actually lose the diagnosis of autism or ASD. Many others, while remaining in the autistic spectrum, have made notable advancements in cognition, behavior, and physical health.

This message of hope is needed now more than ever before. We are in the midst of a worldwide ASD epidemic.¹ In one year alone (from 1998 to 1999), there was a 26.01% increase in the numbers

¹ There is no general rule about the number of cases that must exist for an outbreak to be considered an epidemic. The classic definition of the term was stated by an epidemiologist by the name of Benenson in 1980. He defined an epidemic as “The occurrence in a community or region of a group of illnesses ... of similar nature, clearly in excess of normal expectancy.” In other words, an epidemic exists whenever the number of cases exceeds what is expected based on past experience for a given population.

of school age children classified as autistic, according to the U.S. Department of Education.² In California, the number of school age children diagnosed as autistic rose 210% in an 11-year period.³ There has been a sevenfold increase in ASD in the past decade.⁴ Similar increases in the incidence of autism and ASD have been reported on the European continent. Included in the spectrum of autistic disorders are Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD). Six million children in the U.S. suffer from ADD or ADHD. Over two million children currently take Ritalin for either ADD or ADHD.

Definition of ASD and Incidence of Classic vs. Regressive Autism

The diagnostic criteria for autism agreed upon by most authorities are: severe abnormality of reciprocal social relatedness; severe abnormality of communication development (including language); restricted, repetitive behavior and patterns of behavior, interests, activities and imagination; and early onset (before age 3 to 5 years). Many authors would consider another criterion to be that of abnormal responses to sensory stimuli.⁵

Autistic Spectrum Disorder (ASD) is a group of developmental disorders ranging from full-fledged autism as described above to Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD) and Pervasive Developmental Disorder, (PDD). PDD is a catch-all diagnosis that children get when they do not meet developmental milestones and exhibit autistic symptoms, yet still retain at least some ability to speak and communicate. A child diagnosed with ADD has trouble maintaining focus. A hyperactive

² 22nd Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, Table AA11, "Number and Change in Number of Children Ages, pp. 6-21, Served Under IDEA, Part B."

³ *U.S. News & World Report*, June 19, 2000, p. 47

⁴ Testimony on April 25, 2001 before the U.S. House of Representatives Committee on Governmental Reform by James J. Bradstreet, M.D., director of research for the International Autism Research Center.

⁵ Gillberg, C and Coleman, Mary, "The Biology of the Autistic Syndromes," 3rd Edition, 2000 Mac Keith Press, Chapter, Clinical Diagnosis

child with ADD is labeled ADHD. Both are considered milder forms of ASD. Typically, parents do not seek help for children with any of these conditions until they become aware that their child is not talking or developing as rapidly as other toddlers.

At the top end of the autistic spectrum is Asperger's Syndrome. It is the term used to describe an autistic child who functions at a high level. These children are often extremely intelligent. They use and understand a large vocabulary, but they have very narrow interests and exhibit many social deficits. An Asperger's Syndrome child may become the world's expert on washing machines, but washing machines may be the only thing he or she wants to talk about.

There are two basic types of autism: autism from birth (classic autism once known as Kanner's Syndrome) and regressive autism which generally occurs between 12 and 24 months of age after a period of normal development and behavior. The incidence of autism from birth remains an infrequent event—one or two out of 10,000 births. It is the incidence of regressive autism and associated autistic spectrum disorders that has soared, striking as many as one out of 250 children, according to dozens of studies.

Some studies peg that estimate even higher. A recent one indicates that as many as one out of 150 California children may have regressive ASD.⁶ A similar figure was reported by the Center for Disease Control (CDC) in a study of a township on the East Coast. That study identified 6.87 cases of ASD per 1,000 children, which is approximately one out of 150.⁷ As far as the total number of ASD children, Dr. James J. Bradstreet told a congressional committee that, "The government's own data indicate that there are as many as two million children in the U.S.A. with a significant developmental delay that can be categorized as ASD." *U.S. News & World Report* put it this way: "One out of every six children in America suffers from problems such as autism, aggression, dyslexia, and attention deficit hyperactivity disorder."⁸

⁶ *Report on Autism to the California Legislature*, 1999.

⁷ Centers for Disease Control (CDC), April, 2000. "Prevalence of Autism in Brick Township, New Jersey, 1998: Community Report" available on the CDC website, <http://www.cdc.gov/nceh/programs/cddh/dd/report.htm>.

⁸ Shelia Kaplan and Jim Morris, "Kids At Risk," *U.S. News & World Report*, June 19, 2000, p. 47.

It is considered by most of those now working with large numbers of ASD children that ADD, ADHD, PDD, and Asperger's Syndrome are the result of a milder version of the same pattern of genetic predisposition coupled with environmental triggers which we believe causes ASD. The environmental insults that trigger the damage can occur before birth while the fetus is still developing, during infancy, or while the child is a toddler. Whatever the timing, those environmental insults overburden undeveloped or just developing immune systems, often causing the children's immune systems to turn against their own bodies. When the immune system starts damaging its own body the process is called an autoimmune disease. Allergies, arthritis, and diabetes are other examples of autoimmune diseases. Many autistic/ASD children have families with histories of autoimmune diseases.

What Causes Autism and Other ASDs?

No one claims to understand everything about the causes of this epidemic, but there are theories that parents (and doctors) should be acquainted with because they are the basis for the treatments that will be described in later chapters. There is growing agreement that most cases of autism and ASD derive from a combination of genetic and environmental factors. Genetic factors may set the stage for ASD, yet in many individual cases, environmental factors appear to be the necessary trigger whereby genes then cause the disorder to be expressed.

There are many theories regarding the exact identity and mechanism of the environmental insults that trigger the cascade of physical, mental, and emotional dysfunctions which result in the starvation of a child's brain. No study, however, has definitely pinpointed a specific environmental toxin or contaminant as the one "smoking gun" behind autism, nor is it likely that just one toxin will be identified as the culprit. Instead, there is strong evidence incriminating not one, but several toxins and mechanisms of entry as primary villains behind the damage suffered by many of our children.

SIMPLY GENETIC?

Scientists have long thought that autism is a genetic disease. Yet gene research has been unable to identify a specific chromosome or location on a gene that is the site of a primary autism defect. These children rarely present facial and bodily dysmorphic features characteristic of the children with chromosomal defects that occur in very early gestation such as Down, Williams', and Fragile X children. Although a specific understanding of how genetics contributes to autism is still lacking, it is clear that there is likely to be a genetic "predisposition" or vulnerability in many ASD children. We know this from studies by Reed P. Warren and also because autism tends to show up more in twins than in the normal population. Furthermore, autism is nearly four times more prevalent in boys than in girls. These several findings suggest an association between autism and various genetic factors but do not mandate a clear role for genetics in every case of autism. In any one child, a clustering of environmental triggers may have been etiologically crucial for the onset of ASD. In many such children—with or without genetic predispositions—one or several of the environmental triggers may remain as a treatable pathology, such as a subclinical viral infection or heavy metal toxicity.

Aside from a few purely genetic syndromes that can induce autism, gene researchers have discovered an assortment of genetic markers common to many, but not all, autistic children. One of the genes that control the function and regulation of the immune system, the C4B gene, is involved in eliminating pathogens such as viruses and bacteria from the body. A deficient form of the C4B gene has been shown to have an increased frequency in autism, ADHD, and dyslexia.⁹

We talk about children with ASD as having "genetic susceptibility"—even as we realize that a "genetic susceptibility" may actually not exist in individual cases. At this time, however, acquired and genetic types of susceptibility are just beginning to be elucidated. Not surprisingly, studies about immune-related genes already appear in the autism literature.¹⁰

⁹ Warren, R.P., et al. (1996) 'Immunogenetic studies in autism and related disorders.' *Molecular and Chemical Neuropathology*, 28, pp. 77-81

¹⁰ Ibid

THE TOXIC CHEMICAL MODEL

It is shocking to realize that mothers-to-be may be drinking contaminated water, breathing air inside the home that is more dangerous than the air downwind of an industrial city, and absorbing toxic-chemicals from foods that may be acting as a time bomb within their bodies and those of their unborn children.

A recent report by a group of physicians in Boston states that millions of U.S. children exhibit learning disabilities, reduced IQ, and destructive, aggressive behavior because of exposure to toxic chemicals.¹¹ The report links pre- and post-natal toxic exposures to lifelong disabilities. In addition, a report from the National Academies of Science states that a combination of neurotoxicants and genetic factors may account for nearly 25% of developmental problems.¹² That includes Autism Spectrum Disorder. An important class of toxic chemicals are the polychlorinated biphenyls (PCBs) and organophosphate pesticides. The NAS report showed that babies who had significant amounts of PCBs performed poorer than unexposed babies in visual face recognition tests, ability to shut out distractions, and overall intelligence. The report went on to say that pesticides such as Dursban and Diazinon can cause brain damage. It was only in 2000 that the Environmental Protection Agency (EPA) banned Dursban from household use. It had been marketed to consumers in popular indoor roach and ant killers since 1956.

THE HEAVY METAL CONTAMINATION MODEL

It is even more shocking to learn that the immune systems of genetically susceptible infants may have been attacked by heavy metals such as lead and mercury.

- **Lead:** The Boston Physicians' report referred to in the previous section states that one million American children currently have levels of lead in their bloodstreams above the threshold recognized by the (EPA) as adversely affecting behavior and cognition. Where does the lead come from? Many houses and apartments built before 1978 have paint that contains lead.

¹¹ IN HARM'S WAY: TOXIC THREATS TO CHILD DEVELOPMENT published in 2001 by the Greater Boston Physicians for Social Responsibility organization.

¹² National Academies of Science Report, 2000.