

**Keep  
Your  
Brain  
Young**

A Health & Diet Program for  
Your Brain, Including 150 Recipes

**Dr. Fraser Smith, BA, ND**  
**with Dr. Ellie Aghdassi, PhD, RD**

# Keep Your Brain Young

A Health & Diet Program for  
Your Brain, Including 150 Recipes

---

---

**Dr. Fraser Smith, BA, ND**  
with **Dr. Ellie Aghdassi, PhD, RD**

Robert  
**ROSE**

Keep Your Brain Young  
Text copyright © 2014 Fraser Smith  
Recipes copyright © 2014 Robert Rose Inc. (see page 372)  
Illustrations copyright © 2014 Robert Rose Inc.  
Cover and text design copyright © 2014 Robert Rose Inc.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, without the prior written consent of the publisher or a licence from the Canadian Copyright Licensing Agency (Access Copyright). For an Access Copyright licence, visit [www.accesscopyright.ca](http://www.accesscopyright.ca) or call toll-free: 1-800-893-5777.

*For complete cataloguing information, see page 369.*

## **Disclaimer**

This book is a general guide only and should never be a substitute for the skill, knowledge, and experience of a qualified medical professional dealing with the facts, circumstances, and symptoms of a particular case.

The nutritional, medical, and health information presented in this book is based on the research, training, and professional experience of the authors, and is true and complete to the best of their knowledge. However, this book is intended only as an informative guide for those wishing to know more about health, nutrition, and medicine; it is not intended to replace or countermand the advice given by the reader's personal physician. Because each person and situation is unique, the author and the publisher urge the reader to check with a qualified health-care professional before using any procedure where there is a question as to its appropriateness. A physician should be consulted before beginning any exercise program. The author and the publisher are not responsible for any adverse effects or consequences resulting from the use of the information in this book. It is the responsibility of the reader to consult a physician or other qualified health-care professional regarding his or her personal care.

The recipes in this book have been carefully tested by our kitchen and our tasters. To the best of our knowledge, they are safe and nutritious for ordinary use and users. For those people with food or other allergies, or who have special food requirements or health issues, please read the suggested contents of each recipe carefully and determine whether or not they may create a problem for you. All recipes are used at the risk of the consumer.

We cannot be responsible for any hazards, loss or damage that may occur as a result of any recipe use.

For those with special needs, allergies, requirements or health problems, in the event of any doubt, please contact your medical adviser prior to the use of any recipe.

Design and production: Kevin Cockburn/PageWave Graphics Inc.  
Editors: Bob Hilderley, Senior Editor, Health; and Sue Sumeraj, Recipes  
Copy editor: Kelly Jones  
Proofreader: Sheila Wawanash  
Indexer: Gillian Watts  
Illustrations: Kveta/Three in a Box

Cover and chapter opener image: © iStockphoto.com/tombaky

The publisher gratefully acknowledges the financial support of our publishing program by the Government of Canada through the Canada Book Fund.

Published by Robert Rose Inc.  
120 Eglinton Avenue East, Suite 800, Toronto, Ontario, Canada M4P 1E2  
Tel: (416) 322-6552 Fax: (416) 322-6936  
[www.robertrose.ca](http://www.robertrose.ca)

Printed and bound in Canada

1 2 3 4 5 6 7 8 9 MI 22 21 20 19 18 17 16 15 14



# CONTENTS

Introduction: Feeding the Brain .....	6
Quick Guide to the Healthy Brain Diet Program .....	8

## **Part I: Understanding Brain Diseases**

<b>How Does the Brain Work? .....</b>	<b>12</b>
Brain Basics .....	12
Anatomy of the Brain .....	14
Kinds of Neurological Diseases and Disorders .....	20
<b>Do I Have Dementia? .....</b>	<b>22</b>
Alzheimer's Disease .....	24
Vascular Dementia .....	30
Parkinson's Disease .....	31
Motor Neuron Disease .....	32
Amyotrophic Lateral Sclerosis .....	33
Neuropathies .....	34
Sleep Disorders .....	35
Diabetes Mellitus .....	35
<b>What Causes Dementia? .....</b>	<b>37</b>
Atherosclerosis .....	37
Inflammation .....	39
Oxygen Deprivation .....	43
Oxidative Stress and Free Radicals .....	43
Neurotoxins .....	44
Glucose Damage .....	53
Protein Deposition .....	58
Physiological Stress .....	58
Determinants of Health .....	60
Social Interaction .....	61

*continued on next page*

## **Part 2: Smart Nutrients**

<b>Nutrient Deficiencies</b> .....	<b>64</b>
Nutrient Supplements .....	65
Dietary Reference Intakes .....	66
Recommended Dietary Allowances: Vitamins .....	69
Recommended Dietary Allowances: Minerals .....	83

## **Part 3: Standard Care for Dementia**

<b>Medications</b> .....	<b>94</b>
Alzheimer's Disease .....	95
Lewy Body Dementia .....	96
Vascular Dementia .....	96
Parkinson's Disease .....	97
Motor Neuron Disease .....	99
Peripheral Neuropathy .....	99
Sleep Disorders .....	100
Diabetes .....	100
<b>Botanical Medicines</b> .....	<b>101</b>
Evidence-Based Effects .....	101
<i>Ginkgo Biloba</i> .....	102
<i>Bacopa Monnieri</i> .....	103
Huperzine A .....	103
Acupuncture .....	103
Deep-Brain Stimulation .....	104
Physical and Occupational Therapies .....	104

## **Part 4: The 12-Step Healthy Brain Diet Program**

<b>Program Goals</b> .....	<b>108</b>
No Cure .....	109
Holistic Approach .....	109
Rules of Thumb .....	110
Conscious Eating .....	110
<b>Program Steps</b> .....	<b>111</b>
Step 1: Lay a Good Nutritional Foundation .....	111
Step 2: Restore the Determinants of Good Health .....	115
Step 3: Energize the Brain .....	124

Step 4: Prevent Plaques . . . . .	132
Step 5: Reduce Inflammation . . . . .	134
Step 6: Protect Your Brain against Free Radicals . . . . .	137
Step 7: Detoxify Your Body . . . . .	144
Step 8: Eat More Omega-3 Essential Fatty Acids. . . . .	148
Step 9: Enhance Brain Function with Special Nutrients . . . . .	152
Step 10: Regenerate the Brain . . . . .	154
Step 11: Create a Care Team . . . . .	158
Step 12: Prepare to Make Changes . . . . .	160

## **Part 5: Menu Plans and Recipes for a Healthy Brain**

About the Menu Plans . . . . .	164
Strive for Balance . . . . .	164
Choose Organic . . . . .	166
Make Mealtimes a Special Event. . . . .	167
Week 1 Menu Plan . . . . .	168
Week 2 Menu Plan . . . . .	170
Week 3 Menu Plan . . . . .	172
Week 4 Menu Plan . . . . .	174
Optional Detox Week Menu Plan. . . . .	176
About the Nutrient Analyses . . . . .	178
Breakfast . . . . .	179
Snacks and Appetizers . . . . .	201
Soups . . . . .	217
Salads . . . . .	239
Meatless Mains . . . . .	259
Fish and Seafood . . . . .	287
Poultry, Pork, Beef and Lamb . . . . .	303
Side Dishes . . . . .	325
Desserts . . . . .	341
Beverages . . . . .	357
Resources . . . . .	369
References. . . . .	370
Contributing Authors . . . . .	372
Index. . . . .	373

# Keep Your Brain Young

A Health & Diet Program for  
Your Brain, Including 150 Recipes

---

---

**Dr. Fraser Smith, BA, ND**  
with **Dr. Ellie Aghdassi, PhD, RD**

Robert  
**ROSE**

Keep Your Brain Young  
Text copyright © 2014 Fraser Smith  
Recipes copyright © 2014 Robert Rose Inc. (see page 372)  
Illustrations copyright © 2014 Robert Rose Inc.  
Cover and text design copyright © 2014 Robert Rose Inc.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, without the prior written consent of the publisher or a licence from the Canadian Copyright Licensing Agency (Access Copyright). For an Access Copyright licence, visit [www.accesscopyright.ca](http://www.accesscopyright.ca) or call toll-free: 1-800-893-5777.

*For complete cataloguing information, see page 369.*

## **Disclaimer**

This book is a general guide only and should never be a substitute for the skill, knowledge, and experience of a qualified medical professional dealing with the facts, circumstances, and symptoms of a particular case.

The nutritional, medical, and health information presented in this book is based on the research, training, and professional experience of the authors, and is true and complete to the best of their knowledge. However, this book is intended only as an informative guide for those wishing to know more about health, nutrition, and medicine; it is not intended to replace or countermand the advice given by the reader's personal physician. Because each person and situation is unique, the author and the publisher urge the reader to check with a qualified health-care professional before using any procedure where there is a question as to its appropriateness. A physician should be consulted before beginning any exercise program. The author and the publisher are not responsible for any adverse effects or consequences resulting from the use of the information in this book. It is the responsibility of the reader to consult a physician or other qualified health-care professional regarding his or her personal care.

The recipes in this book have been carefully tested by our kitchen and our tasters. To the best of our knowledge, they are safe and nutritious for ordinary use and users. For those people with food or other allergies, or who have special food requirements or health issues, please read the suggested contents of each recipe carefully and determine whether or not they may create a problem for you. All recipes are used at the risk of the consumer.

We cannot be responsible for any hazards, loss or damage that may occur as a result of any recipe use.

For those with special needs, allergies, requirements or health problems, in the event of any doubt, please contact your medical adviser prior to the use of any recipe.

Design and production: Kevin Cockburn/PageWave Graphics Inc.  
Editors: Bob Hilderley, Senior Editor, Health; and Sue Sumeraj, Recipes  
Copy editor: Kelly Jones  
Proofreader: Sheila Wawanash  
Indexer: Gillian Watts  
Illustrations: Kveta/Three in a Box

Cover and chapter opener image: © iStockphoto.com/tombaky

The publisher gratefully acknowledges the financial support of our publishing program by the Government of Canada through the Canada Book Fund.

Published by Robert Rose Inc.  
120 Eglinton Avenue East, Suite 800, Toronto, Ontario, Canada M4P 1E2  
Tel: (416) 322-6552 Fax: (416) 322-6936  
[www.robertrose.ca](http://www.robertrose.ca)

Printed and bound in Canada

1 2 3 4 5 6 7 8 9 MI 22 21 20 19 18 17 16 15 14





# CONTENTS

Introduction: Feeding the Brain . . . . .	6
Quick Guide to the Healthy Brain Diet Program . . . . .	8
<b>Part I: Understanding Brain Diseases</b>	
<b>How Does the Brain Work? . . . . .</b>	<b>12</b>
Brain Basics . . . . .	12
Anatomy of the Brain . . . . .	14
Kinds of Neurological Diseases and Disorders . . . . .	20
<b>Do I Have Dementia? . . . . .</b>	<b>22</b>
Alzheimer's Disease . . . . .	24
Vascular Dementia . . . . .	30
Parkinson's Disease . . . . .	31
Motor Neuron Disease . . . . .	32
Amyotrophic Lateral Sclerosis . . . . .	33
Neuropathies . . . . .	34
Sleep Disorders . . . . .	35
Diabetes Mellitus . . . . .	35
<b>What Causes Dementia? . . . . .</b>	<b>37</b>
Atherosclerosis . . . . .	37
Inflammation . . . . .	39
Oxygen Deprivation . . . . .	43
Oxidative Stress and Free Radicals . . . . .	43
Neurotoxins . . . . .	44
Glucose Damage . . . . .	53
Protein Deposition . . . . .	58
Physiological Stress . . . . .	58
Determinants of Health . . . . .	60
Social Interaction . . . . .	61

*continued on next page*

## **Part 2: Smart Nutrients**

<b>Nutrient Deficiencies</b> .....	<b>64</b>
Nutrient Supplements .....	65
Dietary Reference Intakes .....	66
Recommended Dietary Allowances: Vitamins .....	69
Recommended Dietary Allowances: Minerals .....	83

## **Part 3: Standard Care for Dementia**

<b>Medications</b> .....	<b>94</b>
Alzheimer's Disease .....	95
Lewy Body Dementia .....	96
Vascular Dementia .....	96
Parkinson's Disease .....	97
Motor Neuron Disease .....	99
Peripheral Neuropathy .....	99
Sleep Disorders .....	100
Diabetes .....	100
<b>Botanical Medicines</b> .....	<b>101</b>
Evidence-Based Effects .....	101
<i>Ginkgo Biloba</i> .....	102
<i>Bacopa Monnieri</i> .....	103
Huperzine A .....	103
Acupuncture .....	103
Deep-Brain Stimulation .....	104
Physical and Occupational Therapies .....	104

## **Part 4: The 12-Step Healthy Brain Diet Program**

<b>Program Goals</b> .....	<b>108</b>
No Cure .....	109
Holistic Approach .....	109
Rules of Thumb .....	110
Conscious Eating .....	110
<b>Program Steps</b> .....	<b>111</b>
Step 1: Lay a Good Nutritional Foundation .....	111
Step 2: Restore the Determinants of Good Health .....	115
Step 3: Energize the Brain .....	124

Step 4: Prevent Plaques . . . . .	132
Step 5: Reduce Inflammation . . . . .	134
Step 6: Protect Your Brain against Free Radicals . . . . .	137
Step 7: Detoxify Your Body . . . . .	144
Step 8: Eat More Omega-3 Essential Fatty Acids . . . . .	148
Step 9: Enhance Brain Function with Special Nutrients . . . . .	152
Step 10: Regenerate the Brain . . . . .	154
Step 11: Create a Care Team . . . . .	158
Step 12: Prepare to Make Changes . . . . .	160

## **Part 5: Menu Plans and Recipes for a Healthy Brain**

About the Menu Plans . . . . .	164
Strive for Balance . . . . .	164
Choose Organic . . . . .	166
Make Mealtimes a Special Event . . . . .	167
Week 1 Menu Plan . . . . .	168
Week 2 Menu Plan . . . . .	170
Week 3 Menu Plan . . . . .	172
Week 4 Menu Plan . . . . .	174
Optional Detox Week Menu Plan . . . . .	176
About the Nutrient Analyses . . . . .	178
Breakfast . . . . .	179
Snacks and Appetizers . . . . .	201
Soups . . . . .	217
Salads . . . . .	239
Meatless Mains . . . . .	259
Fish and Seafood . . . . .	287
Poultry, Pork, Beef and Lamb . . . . .	303
Side Dishes . . . . .	325
Desserts . . . . .	341
Beverages . . . . .	357
Resources . . . . .	369
References . . . . .	370
Contributing Authors . . . . .	372
Index . . . . .	373

# Feeding the Brain

---

---

**This book is a how-to guide for individuals who want to prevent aging-related diseases.**

**I**t is a fact of life: we are all going to age. And some of us are going to experience aging-related diseases, such as Alzheimer's or Parkinson's disease, that affect our thinking, motion, and mood. We can readily find information on how to keep our heart healthy and our joints pain free. We can even find ways to rejuvenate our skin. But most everyone agrees that none of these things matter much if our mind begins to fail, our memories get lost, and our ability to solve even simple problems begins to deteriorate. Wouldn't we all jump at the chance to protect ourselves from the mental symptoms caused by neurological diseases, to repair any existing damage, and to enhance our quality of life as we age?

Thanks to the efforts of medical research scientists and clinicians, North Americans are living longer than ever before. Forty million Americans and five million Canadians are now over the age of 65. One in 10 of the people in this demographic has Alzheimer's. That's almost five million people. By 2050, epidemiologists predict that 16 million North Americans will have Alzheimer's. Add vascular dementia and Parkinson's disease to these numbers and you see that aging-related diseases are becoming epidemic.

Even as we find ways to maintain our bodies well into our 80s or even 90s, we are still stricken with many kinds of aging diseases related to the central nervous system. Some conditions are more frequent now than they were a generation ago, perhaps because of environmental factors, but also possibly because doctors are able to diagnose diseases more effectively. Still, only half of all cases of Alzheimer's have been reported.

In their most stark presentations, aging processes of the brain can rob people of their ability to take care of themselves or even recognize loved ones. Very commonly, these diseases can severely limit human performance and, to some extent, the ability to continue to be contributing and useful members of society (which the elderly most certainly can be and should be). Many of the people who are entering their senior years now are questioning the conventional wisdom that to age means to accept diminishing mental capacity. Although older generations may

not have the learning ease of small children, they are looking for the key to maintaining their intellect and their ability to solve problems at home and at work. Yes, more people are working for more years. Retirement has become less desirable. These people have science on their side — in the sense that new discoveries in neuroplasticity (the way that the brain can remodel itself to adapt to aging, injury, and everyday demands) and nutritional sciences suggest that there are numerous ways to stay young mentally. This book is a how-to guide for individuals who want to prevent aging-related diseases.

It is also a guide for individuals with progressive neurodegenerative conditions and their caregivers in improving quality of life. Although many aging-related diseases are genetically predetermined to some degree, or are often well established before they are detected, the rational approach is to do everything possible to achieve optimal functioning of our brain, and to remove all negative disturbances to our health. The brain has regenerative capabilities, but these alone cannot reverse illness. The right thing to do is to prevent damage.

And that is the spirit in which this book is written — that it is preferable to use the best information we have now to take a proactive approach, instead of waiting passively for the perfect cure to come along. In many cases, there is no time to wait, but in all cases, it is always a wise decision to take actions that improve our well-being. The results of doing so can be useful, and sometimes remarkable.

This book offers the promise of protecting, repairing, and enhancing your mental health while coincidentally improving your general physical well-being. This is not a promise to reverse aging or cure aging-related diseases, but it is an insurance policy on improved health, mental and physical. Wouldn't we all have much to gain by taking out an insurance policy on the fitness of our mind?

The good news is that we can protect our brain from the forces of aging by eating foods that create a nutritional shield against disease. By following a simple step-by-step dietary program, one enhanced with nutritional supplements and regular exercise, both physical and mental, we can extend the term of our life insurance policy. This program is relatively simple, but it is well supported by evidence-based scientific research and clinical practice. Besides, the recipes in this diet program are easy to prepare and the meals taste great. Following this program empowers us all to grow older more gracefully ... and more slowly.

**Dr. Fraser Smith,  
BA, ND**

Assistant Dean  
for Naturopathic  
Medicine, Associate  
Professor, College of  
Professional Studies,  
National University  
of Health Sciences,  
Lombard, Illinois

**Dr. Ellie Aghdassi,  
PhD, RD**

Program Manager,  
Toronto Dementia  
Research Alliance,  
Assistant Professor,  
Dalla Lana School of  
Public Health, University  
of Toronto, Toronto,  
Ontario

# Quick Guide to the Healthy Brain Diet Program

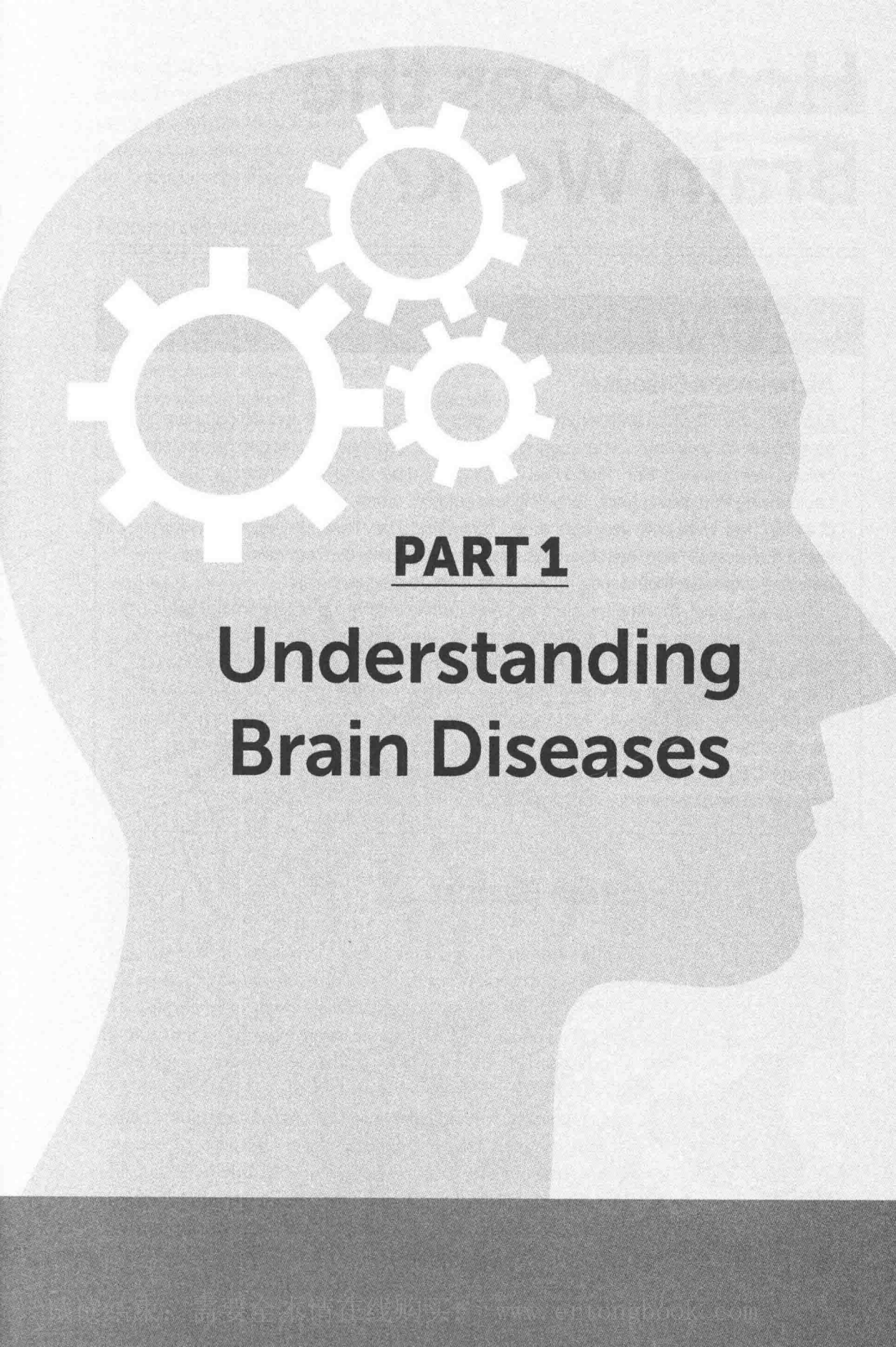
The Healthy Brain Diet Program presented in this book has 12 steps that are complementary and accumulative. It is best to start by laying a nutritional foundation and move toward the menu plan and recipes. Let's preview the 12 steps before exploring them in greater depth. There is nothing too difficult to understand here. All you need, in Dr. Linus Pauling's words, is a willingness to "live longer and feel better."

- 1 Lay a good nutritional foundation:** One sure way to keep dementia at bay is to cultivate general good health, eating the right foods in the right amounts. Follow the guidelines for general good health established by the U.S. Department of Agriculture (USDA) and Health Canada.
- 2 Restore the determinants of good health:** Sleep well, drink adequate amounts of water, expose yourself to sunlight, exercise regularly, lower stress, and maintain social interactions — these are the determinants of good health that apply to dementia. Addressing these factors will help prevent the onset of brain disease and help improve the quality of life in full-blown cases of dementia.
- 3 Energize the brain:** The brain is the hungriest kind of tissue in the body. Eat an energy-rich, low-glycemic-index diet that fuels the brain steadily without spikes in blood sugar levels. Spiking blood sugar damages neurons moment by moment.
- 4 Prevent plaques:** Eat heart-healthy foods to keep the arteries, capillaries, and blood supply to the brain free of plaques formed by deposits of damaged LDL ("bad") cholesterol particles. Plaques can reduce oxygen supply to the brain and eventually cause ischemia and stroke.
- 5 Reduce inflammation:** Limit pro-inflammatory foods in your diet and substitute anti-inflammatory foods. The risk of atherosclerosis and brain damage can be reduced because plaque is less likely to form or rupture.
- 6 Protect your brain against free radicals:** Damage to the brain tissues and cells by oxidative stress and free radicals can be mitigated through a diet rich in antioxidant foods, chiefly plant foods known as phytonutrients.

- 7 Detoxify your body:** Support the body's detoxification mechanisms by eating foods that lower the toxic load throughout the body. When detoxification is weak, harmful compounds accumulate in the body — compounds that can sometimes damage the nervous system. When the body's detoxification system is working properly, we have more protection from disease processes that lead to neurologic aging.
- 8 Eat more omega-3 essential fatty acids:** Surround the brain with essential fatty acids (EFAs) by consuming more fish oil and flaxseed oil. Omega-3 fatty acids protect the meninges surrounding the brain from damage and modulate inflammation in the nervous system.
- 9 Enhance brain function with special nutrients:** Several foods and supplements can be considered brain tonics that support circulation in the brain and protect against the aging effects of oxidation.
- 10 Regenerate the brain:** A healthy part of the brain will sometimes take over functions once held by damaged areas. This regenerative function is known as neuroplasticity. Tap into the regenerative potential of the brain.
- 11 Create a care team:** Invite medical professionals, family members, and friends to help you maintain a high quality of life. People with dementia and their caregivers experience a mixture of emotions — from confusion, frustration, anger, and fear to uncertainty, depression, and grief — which tend to progress with the disease. Help is needed at every step.
- 12 Prepare to make changes:** Change can be managed, even if it is not easy. We often react to life events when new circumstances or distressing problems are thrust upon us. But many (not all) neurological degenerative conditions can be steady, slow, and cumulative — which may provide an opportunity to come to terms with many changes along the way.







**PART 1**

**Understanding  
Brain Diseases**