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TAI CHI FOR KNEE HEALTH

The Low-Impact Exercise System
for Eliminating Knee Pain



Chris Cinnamon, JD, MS, CEP

Praise for *Tai Chi for Knee Health*

“Chris Cinnamon has provided a useful and practical tool with *Tai Chi for Knee Health*. I highly recommend it to any adult dealing with knee pain. The book weaves evidence-based information with a practical plan for reducing knee pain while strengthening joints to make you stronger in body and mind. I love the illustrations to help guide you through the movements and tips to make the exercises a part of a healthy life.”

Christine Rosenbloom, PhD, RDN, FAND, author, *Food and Fitness after 50*

“A remarkably in-depth look at the relationship between *Tai Chi* practices and improved knee health, Chris Cinnamon’s new book is a pioneering attempt to explain some of the practical physiotherapeutic applications of this form of exercise. A must read for orthopedic specialists and anyone struggling with knee pain.”

Paul G. Fendos, Jr., PhD, author of *Taiji as Moving Meditation: Fundamental Principles and Practices*

“*Tai Chi for Knee Health* presents an easy-to-understand, easy-to-perform system of exercises for reducing knee pain. The work benefits from Chris Cinnamon's knowledge of knee anatomy and biomechanics, as well as his exercise science expertise, combined with his many years of professional experience as a teacher and personal experience conquering his own pain. Grounded in solid science, this book will undoubtedly be of great benefit to those suffering from chronic knee pain.”

Kharma C. Foucher, MD, PhD, Assistant Professor, Kinesiology and Nutrition, University of Illinois at Chicago

More Praise for *Tai Chi for Knee Health*

“I created Tai Chi Circling Hands to share the essence of and the vast healing benefits of Tai Chi with the West. Chris Cinnamon's use of Tai Chi Circling Hands as a foundation for his Tai Chi for Knee Health System is a thoughtful and innovative application of these exercises. Chris's dedication to Tai Chi practice plus his background in Exercise Physiology make him an excellent proponent for knee health. Many people suffering from knee pain will benefit by reading this book and using the Tai Chi principles contained within to find great relief and balance.”

Bruce Frantzis, Tai Chi Lineage Holder and Founder of *Energy Arts*

“*Tai Chi for Knee Health* offers millions of adults an innovative option for relief from chronic knee pain. Chris Cinnamon's book guides the reader, step-by-step, through a Tai Chi-based exercise system that can transform knee health and eliminate pain, with solid science to back it up.”

Richard Taubinger, CEO, Conscious Marketer LLC

Tai Chi for Knee Health

Tai Chi for Knee Health

The Low-Impact Exercise System for
Eliminating Knee Pain

Chris Cinnamon, JD, MS, CEP

Illustrated by Elizabeth Moss, MS

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Before engaging in any new exercise program, including Tai Chi for Knee Health, you should consult with an appropriate medical professional and receive clearance to engage in exercise. Any exercise presents a risk of injury. To minimize injury risk in Tai Chi for Knee Health, you should: (i) obtain clearance from your medical professional; (ii) follow all instructions in this book; (iii) stop any exercise that causes discomfort or pain; and (iv) consult with an appropriate medical professional if the pain persists.

This book is written as a source of information only and is not intended to substitute for medical advice.

Although the author and publisher have made reasonable efforts to ensure that the information in this book was correct when published, the author and publisher expressly disclaim any liability to any party for any loss, damage, or disruption caused by any errors or omissions.

Contents

Acknowledgments	vii
Introduction	1
Is Knee Pain Slowing You Down?.....	1
My Journey: From Chronic Knee Pain to Pain-Free Knees.....	5
The Tai Chi for Knee Health System	8
Part 1 The Foundation: Before We Start Moving.....	15
Chapter 1 Getting to Know Your Knees	17
Basic Knee Anatomy: From Three Bones to a Functioning Joint	17
A Closer Look at Cartilage.....	29
A Closer Look at Knee Osteoarthritis.....	32
Tai Chi and Knee Osteoarthritis: Promising Research.....	35
Chapter Wrap-Up.....	37
Chapter 2 The Two Rules.....	41
Rule #1: The 70% Rule	41
Rule #2: The Don't Hurt Your Knees Rule	45
Chapter Wrap-Up.....	48
Chapter 3 Neutral Posture, Feeling Your Knees, and Finding Your Sweet Spot	49
Neutral Posture	49
Feeling Your Knees.....	60
Exercise 1: Feeling Your Knees	61
Your Sweet Spot.....	65
Exercise 2: Finding Your Sweet Spot	66
Chapter Wrap-up.....	69
Part 2 Beginning to Move: Vertical Circles	71
Chapter 4 Connecting the Bottom to the Top: The Kwa Squat.....	75
Exercise 3: Finding Your <i>Kwa</i>	76

The Kwa Squat: Basic Elements	78
Kwa Squat: Tips and Common Errors.....	79
Exercise 4: The Kwa Squat.....	82
Exercise 5: Kwa Squat + Sweet Spot.....	84
Chapter Wrap-Up.....	85
Chapter 5 Adding the Arms	87
Vertical Circles: Basic Elements	88
Vertical Circles: Tips and Common Errors.....	92
Exercise 6: Vertical Circles	95
Exercise 7: Vertical Circles + Sweet Spot	97
Chapter Wrap-up	99
Chapter 6 Circle #1: Vertical Circles + Kwa Squat.....	101
Vertical Circles + Kwa Squat: Basic Elements.....	101
Vertical Circles + Kwa Squat: Tips and Common Errors.....	108
Exercise 8: Vertical Circles + Kwa Squat.....	110
Exercise 9: Vertical Circles + Kwa Squat + Sweet Spot.....	112
Chapter Wrap-up	114
Chapter 7 Adding More Legs: The Weight Shift	115
The Tai Chi for Knee Health Stance	117
The Stance: Basic Elements	119
Exercise 10: The Weight Shift.....	123
The Weight Shift: A Common Error	126
Exercise 11: Weight Shift + Vertical Posture	128
Exercise 12: Weight Shift + Sweet Spot.....	132
Chapter Wrap-up	134
Chapter 8 Circle #2: Vertical Circles + Weight Shift	137
Vertical Circles + Weight Shift: Basic Elements.....	138

Vertical Circles + Weight Shift: Tips and Common Errors	150
Exercise 13: Vertical Circles + Weight Shift.....	153
Exercise 14: Vertical Circles + Weight Shift + Sweet Spot	157
Chapter Wrap-up.....	160
Chapter 9 Adding Rotation: The Hip Turn.....	161
The Two Fundamental Knee Alignments	162
Adding Rotation: The Hip Turn + Kwa Fold	164
The Hip Turn + Kwa Fold: Basic Elements	164
Hip Turn + Kwa Fold: Tips and Common Errors	174
Exercise 15: Hip Turn + Kwa Fold	178
The Weight Shift + Hip Turn	183
Exercise 16: Weight Shift + Hip Turn	183
Chapter Wrap-up.....	186
Chapter 10 Adding Rotation: Keeping the 4 Points Aligned.....	189
Your 4 Points and How to Keep Them Aligned	189
Exercise 17: Weight Shift + Hip Turn + Keeping the 4 Points Aligned.	194
Exercise 18: Weight Shift + Hip Turn + Sweet Spot.....	198
Chapter Wrap-up.....	200
Chapter 11 Circle #3: Vertical Circles + Weight Shift + Hip Turn	203
Vertical Circles + Weight Shift + Hip Turn: Basic Elements.....	204
Learning Circle #3: The Four Checkpoints.....	218
Exercise 19: Vertical Circles + Weight Shift + Hip Turn	224
Exercise 20: Vertical Circles + Weight Shift + Hip Turn + Sweet Spot	229
Chapter Wrap-up.....	232
Chapter 12 Building Our Exercise Set: Circles #1 through #3	235
Circles #1–#3: Applying Key Principles	236
Exercise 21: Circles #1–#3	239

Part 3 Continuing to Move: Horizontal Circles	251
Chapter 13 Circle #4: Horizontal Circles + Kwa Squat.....	253
Horizontal Circles + Kwa Squat: Basic Elements.....	256
Horizontal Circles + Kwa Squat: Tips and Common Errors	265
Exercise 22: Horizontal Circles + Kwa Squat.....	267
Exercise 23: Horizontal Circles + Kwa Squat + Sweet Spot.....	269
Chapter Wrap-up	271
Chapter 14 Circle #5: Horizontal Circles + Weight Shift + Hip Turn.....	273
Horizontal Circles + Weight Shift + Hip Turn: Basic Elements	274
Horizontal Circles + Weight Shift + Hip Turn: Tips and Common Errors	
.....	285
Exercise 24: Horizontal Circles + Weight Shift + Hip Turn	286
Exercise 25: Horizontal Circles + Weight Shift + Hip Turn + Sweet Spot	
.....	291
Chapter Wrap-up	294
Chapter 15 Adding to Our Exercise Set: Circles #1 through #5.....	297
Circles #1–#5: Applying Key Principles	298
Exercise 26: Circles #1 through #5.....	300
Part 4 Completing the Set: Coronal Circles	319
Chapter 16 Circle #6: Coronal Circles + Kwa Squat	321
Coronal Circles + Kwa Squat: Basic Elements	322
Coronal Circles + Kwa Squat: Tips and Common Errors.....	329
Exercise 27: Coronal Circles + Kwa Squat.....	332
Exercise 28: Coronal Circles + Kwa Squat + Sweet Spot	334
Chapter Wrap-up	336
Chapter 17 Circle #7: Coronal Circles + Weight Shift + Hip Turn.....	339
Coronal Circles + Weight Shift + Hip Turn: Basic Elements	340

Coronal Circles + Weight Shift + Hip Turn: Tips and Common Errors	350
Exercise 29: Coronal Circles + Weight Shift + Hip Turn	352
Exercise 30: Coronal Circles + Weight Shift + Hip Turn + Sweet Spot	357
Chapter Wrap-up.....	361
Chapter 18 Putting It All Together: Circles #1 through #7	363
Circles #1–#7: Applying Key Principles.....	363
Exercise 31: The Full Set, Circles #1–#7	367
Chapter 19 Conclusion: Next Steps in Transforming Your Knee Health.	391
About the Author.....	395
About the Illustrator.....	396
References	397

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Introduction

Is Knee Pain Slowing You Down?

If you've opened this book, you are likely dealing with knee pain. Like me, you know how knee pain, especially chronic knee pain, *slows* us down.

With chronic knee pain, routine activities become increasingly uncomfortable and difficult. Like going up and down stairs. Getting in and out of a chair. Squatting, kneeling, even taking a short walk. Higher-impact activities—like running, skiing, hiking, basketball, and martial arts—hurt even more and may become impossible. Because of knee pain, we give up many activities altogether. That includes stopping sports, exercise, and active leisure; activities that once brought excitement, pleasure, and joy to our lives.

Sound familiar? That's how it typically goes with chronic knee pain. We become less active, more sedentary. We gain weight. We take pain medicine, worrying about side effects. We experience irritability, fatigue, disrupted sleep, and low mood—common emotional symptoms associated with chronic pain.

I know. I lived with chronic knee pain for years. The pain slowed me down, limited my activity, and brought me down emotionally.

Fast-forward. Today, my knees feel strong and virtually pain-free. I am active, healthy, and fit. I feel confident I will enjoy an active life as I age.

Do you want that too? In this book, I show you how.

Who Can Benefit from This Book?

This book is for everyone who suffers from chronic knee pain and wants to enjoy healthier, pain-free knees. The Tai Chi for Knee Health Program is suitable for those experiencing knee pain from a range of conditions, including:*

- Osteoarthritis
- Rheumatoid arthritis
- Psoriatic arthritis
- Tendonitis
- Patellofemoral syndrome
- IT band syndrome
- Bursitis

Because of the prevalence of knee osteoarthritis today, I devote extra attention to that condition.

This book will also benefit people recovering from a knee injury, a knee replacement, or other knee surgery, and who are looking for a low-impact, enjoyable exercise program to help with rehabilitation.

This book is also a resource for medical professionals, fitness professionals, family members, and friends who work with, care for, or care about people with

*If you do not exercise regularly, before starting Tai Chi for Knee Health, you should obtain clearance from your medical professional.

knee pain. In these pages, you will find information and inspiration to help your patients, clients, loved ones, and friends.

Chronic Knee Pain: A Leading Cause of Disability

If you experience chronic knee pain, you are part of a large and growing population. Knee pain is a leading cause of disability in older adults. Many conditions can cause chronic knee pain, but by far, the main cause of knee pain in adults is **knee osteoarthritis**, or “**knee OA**.” A degenerative disease, knee OA involves progressive breakdown of cartilage and other structures in and around the knee. Knee OA’s main symptom? *Knee pain*.

Knee OA is a major health care issue today. In the US, an estimated 14 million adults suffer from knee OA,¹ and the incidence of knee OA is increasing. A recent study concluded that, since 1965, the percentage of adults with knee OA has at least *doubled*.² Further, studies show that a greater percentage of women are experiencing knee OA,³ and that women are more severely impacted by the disease.⁴

¹ Deshpande, B. et al. “The Number of Persons with Symptomatic Knee Osteoarthritis in the United States: Impact of Race/Ethnicity, Age, Sex, and Obesity.” *Arthritis Care & Research* 68, no. 12 (December 2016): 1743–50. <https://doi.org/10.1002/acr.22897>.

² Wallace, I. et al. “Knee Osteoarthritis Has Doubled in Prevalence since the Mid-20th Century.” *Proceedings of the National Academy of Sciences* 114, no. 35 (August 29, 2017): 9332–36. <https://doi.org/10.1073/pnas.1703856114>.

³ Deshpande et al.

⁴ Hame, S. et al. “Knee Osteoarthritis in Women.” *Current Reviews in Musculoskeletal Medicine* 6, no. 2 (March 8, 2013): 182–87. <https://doi.org/10.1007/s12178-013-9164-0>.

The main medical intervention for knee OA is pain medicine. When the pain becomes debilitating, joint replacement surgery often follows, with all the related costs, risks, and limitations. Moreover, a joint replacement is not necessarily a permanent fix. Replacements wear out. That means more major surgery. Other experimental medical treatments are in development, including stem cell injections and cartilage transplants. So far, none has proven effective on a large scale.

In this book, I devote special attention to how Tai Chi for Knee Health benefits chronic pain from knee OA. I do this for two main reasons. First, knee OA is by far the leading cause of chronic knee pain. Second, there is solid science showing that Tai Chi helps people with knee OA, reducing pain and increasing physical function.

That said, if you suffer from knee pain from other conditions identified above, and if you are cleared for low-impact exercise by your medical professional, I encourage you to try Tai Chi for Knee Health. The program's emphasis on low-impact movement within a pain-free range of motion can improve your knee health and help you reduce or even eliminate knee pain.

I recognize that a candid discussion of chronic knee pain, loss of mobility and function, and the growing rates of knee OA may seem grim. It is not my intent to be grim!

On the contrary, my intent is to provide a *path to pain-free knees* and to *inspire you to explore that path*. I want you to move more and enjoy physical activity again, without knee pain. I want you to discover a low-impact, step-by-step exercise system with ancient roots, supported by modern scientific research, that will transform your knee health and eliminate your knee pain.

That exercise system is: **Tai Chi for Knee Health.**

But first, a little of my story.

My Journey: From Chronic Knee Pain to Pain-Free Knees

I've led an active life. I was a three-sport athlete in high school—football, basketball, and track. At Williams College, I continued to play football. I loved the game, but my knees paid a price, sustaining multiple injuries, with one requiring surgery.

For seven years after college, I served in the US Navy, flying carrier-based fighter jets (for naval aviation buffs, the F-14 Tomcat). High-impact physical training was a big part of that lifestyle. For many years, I participated in competitive martial arts. (I hold a 3rd degree black belt in Shotokan Karate.) I sustained more knee injuries, ultimately leading to another surgery. Mixed in with all that activity were decades of high-impact exercise, including lots of running, weight training, mountain treks, skiing, two marathons, and more.

Beginning in my mid-30s, my knees began to ache. Over time, the pain became more frequent and, at times, intense. By my mid-40s, my knees hurt most of the time. It hurt to climb stairs. It really hurt to go down stairs. It hurt to get out of a chair. It hurt to sit in a car. After a workout, I would take over-the-counter pain medicine to “quiet down” my knees.

I saw doctors. I learned I had knee OA—in *both* knees. As mentioned earlier, knee OA is typically degenerative. The main symptom is pain. You manage it with medicine, maybe some physical therapy, until the pain becomes debilitating. Then you get in line for joint replacement surgery. I did **not** like that view of my future.

Fast-forward to today. My knees are strong and virtually pain-free. I have not taken pain medicine for my knees in years.

Tai Chi had a big role in that transformation. In my late 40s, seeking a lower-impact martial art, I began studying Tai Chi. I was hooked immediately.

TAI CHI FOR KNEE HEALTH

Fascinated and challenged by the sophisticated movements, intrigued by the reported health benefits, I immersed myself. Since then, I have accumulated over 10,000 hours of practicing and teaching Tai Chi. My main teacher is Master Bruce Frantzis, an extraordinarily knowledgeable Taoist master, a rare resource in the West. My training has included rigorous instructor training under Master Frantzis' Energy Arts system, and I am certified to teach Tai Chi and multiple Qigong sets. (To learn more about Bruce Frantzis and his teachings on Tai Chi, Qigong, Taoist meditation, and more, go to [https://www.energyarts.com/.](https://www.energyarts.com/))

There is a lot I love about Tai Chi. But one benefit really got my attention. Not long after I started Tai Chi, *my knees started to feel better*. My chronic pain decreased. My knees felt stronger. As my Tai Chi practice increased, my knees felt better and better. I stopped taking pain medicine. Over time, activities that used to hurt my knees, like going up and down stairs, didn't hurt anymore.

I thought I was onto something. Something important. Could Tai Chi eliminate knee pain for others, just like it did for me?

During that time, I was transitioning professionally, passing the reins of the law firm I founded and focusing on another business, Chicago Tai Chi. As part of that transition, I went back to school, enrolling in the University of Illinois at Chicago (UIC), pursuing a Master of Science in Kinesiology, with a concentration in exercise physiology. Kinesiology is the study of human movement. Exercise physiology is the study of how the body responds to exercise. One topic I focused on in my graduate studies was how Tai Chi could affect chronic knee pain. I poured over research articles on studies of Tai Chi and knee OA. I dug into the underlying physiological principles and mechanisms through which Tai Chi might make diseased knees healthier.

While at UIC, I also worked in the biomechanics lab as a graduate research assistant. My supervisor in the lab and my academic advisor was Kharma Foucher, MD, PhD. Dr. Foucher is an expert in biomechanics, osteoarthritis,

Introduction

and joint replacements. Dr. Foucher was a major influence on how I came to understand knee OA as a disease.

In conjunction with my kinesiology studies, I became certified as an exercise physiologist through the American College of Sports Medicine (ACSM). ACSM is the leading authority in the US on the practical applications of exercise science for reducing disease risk and improving health. As an ACSM-certified exercise physiologist, I am qualified to conduct fitness assessments and develop exercise prescriptions, including for adults who suffer from chronic conditions. My work at Chicago Tai Chi includes helping many clients with serious health issues become more active through Tai Chi practice.

Throughout my academic studies, my work in the biomechanics lab, and my exercise physiologist training, I kept focused on a deeply meaningful question—how can I help people with knee pain experience the transformation I experienced?

To answer that question, I developed the Tai Chi for Knee Health System, distilling years of my experience, training, study, and practice into an easy-to-learn, Tai Chi-based program.

That's my story. Believe me, life is better without chronic knee pain. I want you to experience that too.

That's why I wrote this book.

The Tai Chi for Knee Health System

The Tai Chi for Knee Health System distills key Tai Chi principles and movements into a low-impact, easy-to-follow, step-by-step program. I have taught this material in live workshops, in classes and private sessions, and to a growing US and international audience through my Online Tai Chi for Knee Health Course.

In short, Tai Chi for Knee Health works. People get the training, practice the material, and their knees start feeling better. Just like mine did.

With a little effort and regular practice, you can experience what I—and hundreds of my students and clients—have experienced through Tai Chi for Knee Health. Less pain, more mobility, and the joy of activities that enrich your life.

The 3 Main Learning Objectives

I'll start with the big picture: the three main learning objectives of Tai Chi for Knee Health.

Objective 1: How to feel your knees. Most people don't feel their knees until they hurt. But our knees are rich with nerves. Those nerves constantly communicate an abundance of information to the brain, including knee position, knee alignment, forces inside the knee, and more. When you become consciously aware of these nerve signals, you access essential information on how to protect your knees and how to move in ways that help your knees.

In Tai Chi for Knee Health, you will discover how to feel your knees, *including inside your knees*, in detail.

Objective 2: How *not* to hurt your knees. The point here seems straightforward—if we want our knees to hurt less, we must stop doing things

that hurt them! But most people with chronic knee pain disregard it. They push through pain. They grin (or grit) and bear it. Often, we irritate our knees in subtle ways, even with common, everyday activities. You may stand, walk, turn, twist, or otherwise move in ways that aggravate injured or arthritic tissue inside your knees. Not surprisingly, this tends to result in more knee pain.

In Tai Chi for Knee Health, you will discover specific techniques for adjusting and aligning your knees so that you can move without hurting them.

Objective 3: How to exercise in ways that restore knee health. With the sensitivity to feel inside your knees and with the skill to move in ways that do not hurt your knees, you can engage in Tai Chi-based movements that *help* your knees. As I describe in Chapter 1, research studies consistently show that Tai Chi reduces pain and improves function in patients with knee OA. My own study and experience suggest why. When done properly, ***Tai Chi movements trigger physiological processes that improve the health of all tissues in and around the knee.*** That's the science underlying how Tai Chi for Knee Health works.

In this program, you will learn a simplified, easy-to-follow, Tai Chi-based exercise set called Tai Chi Circling Hands®. With regular practice, following the Tai Chi for Knee Health principles and techniques described in this book, the exercises will transform the health of your knees.

Tai Chi for Knee Health: Anyone Can Do It

Tai Chi for Knee Health is a step-by-step system that anyone can learn. You do not need a background in Tai Chi. You do not need to be physically fit. You do not need to have an ideal body weight. You do not need to think of yourself as “coordinated” or “graceful” or “agile” or any other adjective used to describe how we move.

To succeed with Tai Chi for Knee Health, you do need to make a commitment. Not a huge commitment. But a commitment, nonetheless. You need to commit to investing the time to learn and practice the Tai Chi for Knee Health System.

I know how overscheduled contemporary lives can be. Time is precious and increasingly scarce. When I say you need to invest time, I mean a little, not a lot. Once you learn the basics of this program, I recommend practicing 15–20 minutes per day, 4–5 days per week. With that, you will trigger physiological processes in and around your knees that will transform your knee health and put you on the path to pain-free movement.

That small investment, just 15–20 minutes per day, 4–5 days per week, will reward you with pain-free knees, the joy of an active lifestyle, and the deep satisfaction of taking charge of your knee health.

You’ve made an important first step: you started this book. Good for you! Here’s how to use it.

How to Use This Book

Through my workshops, classes, and my Online Tai Chi for Knee Health Course, I have honed a practical, systematic, step-by-step approach to presenting this material. I follow that approach in this book.

I organize this book into four parts, with a total of 19 chapters. The material builds sequentially, guiding you through the principles and movements of the Tai Chi for Knee Health System in a systematic, step-by-step way.

Part 1 (chapters 1–3) establishes the foundation for Tai Chi for Knee Health. Part 1 includes key points of knee anatomy and physiology, helping you to better understand your knees. It also covers the “Two Rules” governing Tai Chi for Knee Health. Part 1 also introduces a way to stand called “Neutral Posture,” and how to find the “Sweet Spot” in your knees. We use this material throughout the program.

Introduction

In Part 2 (chapters 4–12), we begin to move, introducing most of the fundamentals of the Tai Chi for Knee Health System. We will cover movement components including the Kwa Squat, the Kwa Fold, the Weight Shift, the Weight Shift + Hip Turn, and Vertical Circles. We will put those movement components together into the first 3 movements of our 7 movement exercise set. Part 2 also covers two key alignment principles, the Two Fundamental Knee Alignments and Keeping the 4 Points Aligned.

Part 3 (chapters 13–15) builds upon Part 2 introducing another movement component, the Horizontal Circle. We then incorporate the Horizontal Circle into the 4th and 5th movements of our exercise set.

Part 4 (chapters 16–19) adds the final movement component, the Coronal Circle, incorporating that into the 6th and 7th movements of our exercise set.

By Chapter 18, we will be ready to put it all together, performing a complete set of Tai Chi Circling Hands®. A full set involves performing each of the 7 movements 20 times, for a total of 140 movements. That’s about 15 minutes of low-impact, whole body exercise, all focused on transforming knee health.

Chapter 19 concludes with my practice recommendations and suggestions on what you to do after consistent practice of Tai Chi for Knee Health.

Here’s the learning approach we’ll follow. First, we learn movement components and related movement principles and techniques. Then we combine those movement components into whole-body movements. Then we connect those movements into a sequence of movements. Over Parts 2–4, we build our movement sequence into the 7 movement exercise set called Tai Chi Circling Hands®.

Each new movement is introduced with a **Basic Elements** section, breaking down the move into its components. Most movements include a section on **Tips and Common Errors** to help guide your learning. I then lead you

through a series of progressive **Exercises**, helping you to develop skill in performing the movements while monitoring an increasing number of “moving parts.”

Each **Exercise** concludes with a **Practice Recommendation** to follow before proceeding. I have also included several **Practice Notes**, digging deeper into some of the material.

Online Practice Videos

To help support your practice, you have access to three **Online Practice Videos**. I will point you toward those at appropriate points in the program.

Online Tai Chi for Knee Health Course

As an additional resource, many of my workshop attendees, students, and clients also purchase access to my Online Tai Chi for Knee Health Course. This comprehensive video course, with students enrolled across the US and Europe, provides video lessons and guided practices covering all the Tai Chi for Knee Health material presented in this book. The video course offers an effective additional resource to support home study. For more information and to purchase immediate access to the course, go to

<https://www.chicagotaichi.org/product/tai-chi-for-knee-health-online-course/>

Practice Note: Master Bruce Frantzis and Tai Chi Circling Hands®

In Tai Chi for Knee Health, you will learn a movement set called Tai Chi Circling Hands® (“Circling Hands” for short). My main teacher, Master Bruce Frantzis, developed Tai Chi Circling Hands®, incorporating key Tai Chi movement components into an easy-to-learn exercise system. Master Frantzis has generously granted his permission for me to use Tai Chi Circling Hands® in this book.

I chose Circling Hands as the basis for the Tai Chi for Knee Health System for three main reasons: (1) It incorporates key components of Tai Chi that are immensely beneficial for knee health. (2) It is straightforward to learn at a beginner level. (3) The movements can be readily modified so persons with a wide range of medical issues and impairments can comfortably perform the exercises and benefit from them.

The benefits of practicing Tai Chi Circling Hands® go well beyond eliminating knee pain. As an exercise, it delivers a powerful, low-impact workout for the entire body. For those interested in exploring Qigong (energy practices) or Neigong (internal practices), Circling Hands provides an exceptional platform for deeply working the body and its energy.

To explore the many benefits of Tai Chi Circling Hands®, I recommend the programs produced by Master Bruce Frantzis and his company, Energy Arts Inc. For more information, go to <https://www.energyarts.com/>.

Let’s turn now to Part 1 and start building the foundation for your Tai Chi for Knee Health practice.

About the Author



Chris Cinnamon is an exercise physiologist, wellness expert, and head instructor at Chicago Tai Chi. In his book *Tai Chi for Knee Health: The Low-Impact Exercise System for Eliminating Knee Pain*, he distills his decades of experience helping students and clients heal chronic knee pain. Chris holds a law degree from the University of Michigan, a Master of Science in Kinesiology from the University of Illinois at Chicago, and is certified as an exercise physiologist by the American College of Sports Medicine. Chris lives and teaches in downtown Chicago, leads seminars and workshops throughout the US, and is passionate about sharing the powerful benefits of Tai Chi, Qigong, and meditation for the body, mind, and spirit. For more on Chris's teaching and writing, go to <https://www.chicagotaichi.org/>.

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About the Illustrator



Elizabeth Moss is a Chicago-based scientific illustrator. Her work ranges from anatomy illustrations to optics diagrams. She has a Bachelor of Fine Arts in Illustration from Columbia College Chicago, and a Master of Science in Biomedical Visualization from the University of Illinois at Chicago. Elizabeth is passionate about creating images that are easily understood, even when the concepts are complex. Her work has been published in scientific journals, including as cover illustrations. *Tai Chi for Knee Health* is her first book collaboration. For more about Elizabeth and to view her portfolio, go to <https://www.emoss-illustration.com/>