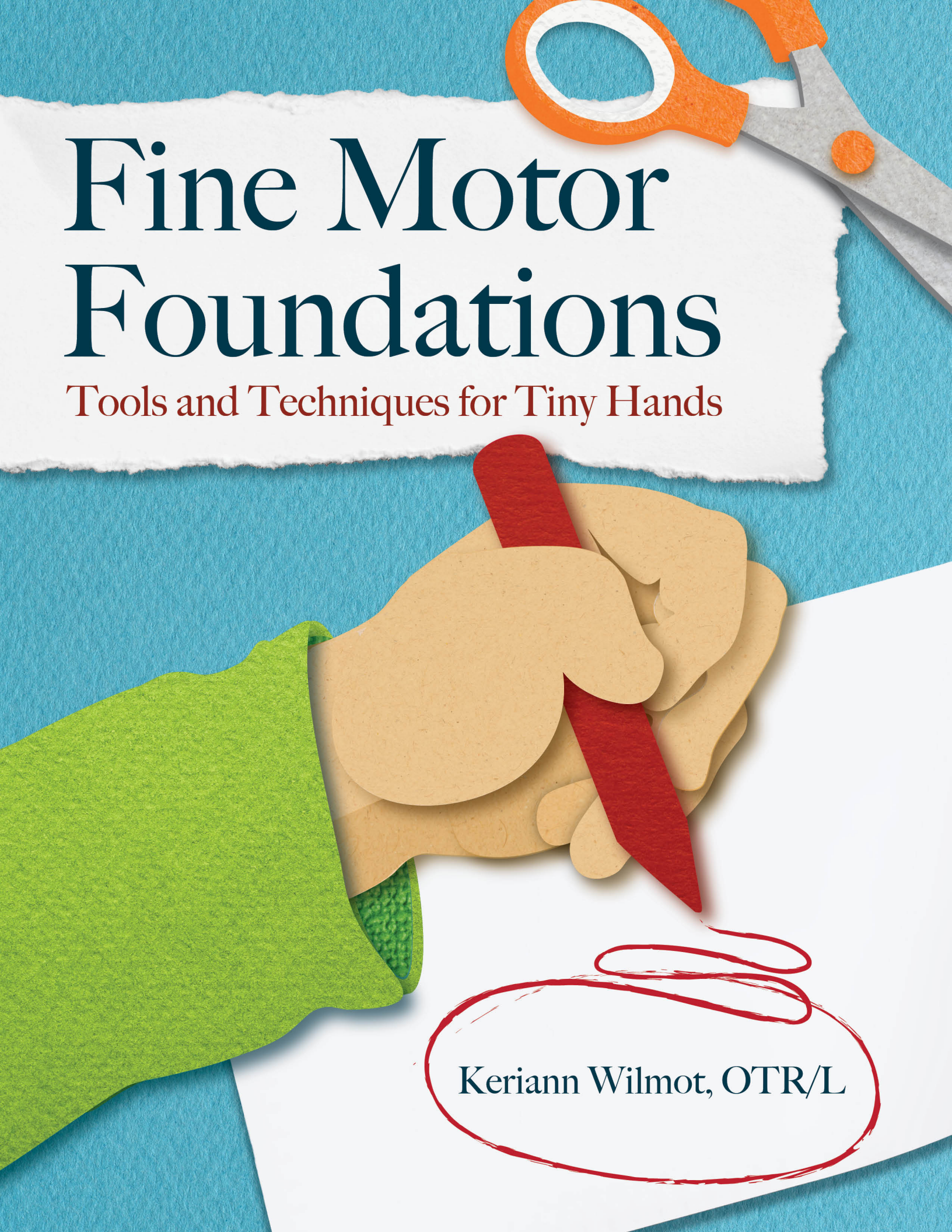
Fine Motor Foundations

Tools and Techniques for Tiny Hands



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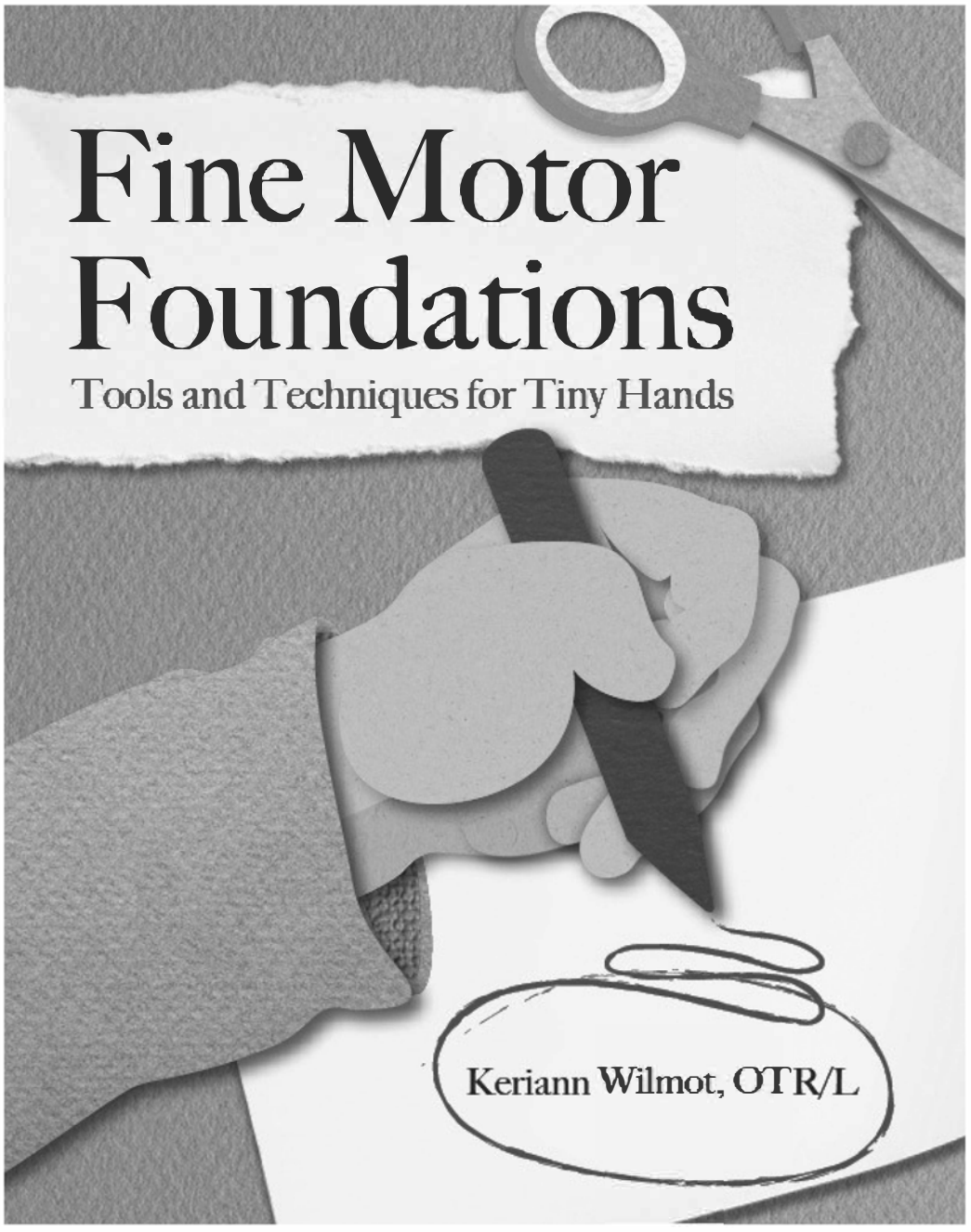

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Preface

As a pediatric occupational therapist (OT), I'm often asked general questions like, "What are fine motor skills?" And more often than not, to avoid over complicating it, my response is something quick such as, "It's pretty simple. They're how kids use their hands to play, write their name, and engage in everyday skills, like eating with a utensil, getting dressed, and tying their shoes." Now, after finishing this book, I think you will agree with me, that these intricate skills that children are developing from the time they are born and well into adulthood are complicated, extraordinary, and amazing. Fine motor skills play a role in just about every single activity we do, each and every day.

I share the quote above because I feel that, for me, it really captures the wonder of development. How a baby grows in utero, then within just a few short months after birth develops the strength and coordination needed to talk, walk, and use their hands to play is not impulsive. Development is natural, consistent, and happens along a predictable timeline. These little steps seem to happen effortlessly, with so many tiny details that most people don't even pay attention to. The steps will all come together over time to create the foundational skills needed for the individual to achieve their potential.

There is a lot of information shared in this book about fine motor skill development, and I'm sure it's overwhelming. Unless you are or plan on becoming an OT, please don't worry about memorizing the names of every possible fine motor skill or grasp pattern. They are there as a reference. I recommend familiarizing yourself with the skills of the age group you teach and interact with. Look at the photos of the different grasp patterns, and just use your observation skills to watch how children use their hands to play. Knowing what's expected for the children you interact with will help you to spot the child who could benefit from some additional strategies and interventions.

There will be situations where OT and more consistent help through therapy will be important, but it's not always easy for families and children to get support right away—or at all. Even with an efficient process, it can take months to get a child established in therapy. So, think of how much of a difference you will make by providing quality learning experiences in your classroom or playroom, even if it's something as simple as breaking your regular crayons in half and adding a few pairs of loop scissors to cut with.

Often, I see that the toys in a classroom or in a home don't fit the developmental levels of the children. Sometimes, the toys are too simple and children get bored quickly; other times, the toys and activities are so advanced that children don't participate for very long. The moment an activity feels like work and isn't fun, they are off to find something else that motivates them.

I've spent a fortune on toys over the course of my twenty-five–year career. Over the last fifteen years, I've prioritized finding the best to use in my everyday experiences as part of therapy with children. I've worked side-by-side with toy companies in the product-development process, and my expertise and understanding of play have been sought by toy companies all over the world. I know a lot about the types of educational toys and activities children really love to play and engage with.

Please reference the lists of companies and toys I've included in the book to help you make informed choices about the types of toys and activities you are offering to the children you work with each day. But I totally get it: toys and technology are expensive, and not all schools have budgets to support buying new ones. This is why I want to make sure that there are ways to make your own activities using simple household items too!

Thank you so much for reading this book, I'm positive you will use what you've learned to make a difference in the lives of the children you support each and every day. I love to educate others and am always available for trainings, webinars, and events. Please share your success stories, and ask me any questions you have. Feel free to reach out to me here:

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Acknowledgments

Thank you so much to my husband, Derek, who didn't get scared off when he met me twenty years ago and saw that drove around in a car with a trunk full of toys. Instead, he's found creative ways to support and encourage me to share my knowledge and passion so more parents, teachers, children, and even toy companies from around the world can learn practical ways to promote play.

To my son, Gavin: Keep working hard. When you are passionate, doors you never thought existed will open for you. Being your mom and advocating for you has motivated me to continue to educate as many teachers and parents as possible, so that all children, no matter their skill level, can improve their performance and confidence.

To my current and past clients and your outstanding parents and families: When your child needs occupational therapy, it's not usually a club you want to belong to. Thank you for inviting me into your homes and sharing your stories. You've given me the priceless gift of experience.

To my mom and dad, family, friends, co-workers, and everyone I've met through the ToyQueen.com community over the years: The opportunity to write this book would not be possible without your support.

Introduction

"Great things are not done by impulse but by a series of small things brought together."

—Vincent van Gogh, artist (attributed)

Think about the last time you saw a child captivated by squeezing playdough through a press, finishing a jigsaw puzzle, or even drawing a self-portrait complete with different body parts and a hat, glasses, or a hairstyle that is unique to their appearance and personal interests. Children make playing with toys by using their hands look so easy and fun. When development occurs naturally and as expected for a young child, these complicated skills become automatic and effortless.

The development of various life skills is crucial for a child's future success (both academically and socially) and independence. However, people often try to predict a child's future success based on a few major developmental skills, such as how quickly the child learns to walk, talk, and become potty-trained. Additionally, when children start preschool, the focus is often on how fast they learn their colors or write their names. But using both hands together in a coordinated way is much more important than many realize. Our hands help us to do everything! How else would we tie our shoelaces, eat with a fork and knife, or hold a phone to text our friends?

Did you know that the key fine motor skills we focus on in preschool actually start developing in the womb (Martinez, Dugdale, and Conaway, 2023)? Some lucky expecting families see this development in action while watching their baby suck their thumb on

the monitor during an ultrasound. After birth, babies continue to develop, use, and refine these skills until adulthood. Here are some examples of how humans continue to hone their fine motor skills throughout life:

- Babies use fine motor skills within the first few weeks of life by bringing their hands together while they are being held, then quickly learn to reach out for their parent's nose or lips while being breastfed or drinking from a bottle.
- Toddlers pick up small pieces of food off their plates or trays to eat, and they learn how to hold and drink from sippy cups. Their play skills develop over time as they learn to twist open the tops of containers, complete puzzles, scribble with crayons, and cut with scissors.
- By kindergarten, children are learning to write their names, tie their shoelaces, and zip up their coats.
- Elementary school–aged children use forks and knives to cut their food.
- Teenagers and adults use fine motor skills every day to take notes, text friends, or type emails.

As you'll see demonstrated throughout this book, it is vital for children to develop good eye-hand coordination and hand strength early on, as these abilities have a tremendous effect on the success of children's academic experiences years later.

My Qualifications for Writing This Book

As a pediatric occupational therapist (OT), I feel so lucky to have had a career working with young children for more than twenty years. At this stage of my career, I've spent a minimum of forty thousand hours helping to improve the lives of children of all ages, mainly through play, at their homes, in day cares and preschools, and in hospitals through evaluation and treatment. I'm excited to share with you why the skills I address in this book are so important, along with the tips, tricks, and ideas I've learned along the way to make building these skills fun for young children.

My work as an OT allows me to observe children through a lens that dives deep into a child's skill development. While I'm looking for age-appropriate skills to get a sense of whether a child has a delay, my training enables me to look at the underlying skills children need for complicated tasks and to offer practical solutions for improving their performance. So, for example, I monitor and check off on my list whether a child can put on their socks and shoes and tie their shoelaces. If the child can't, I can provide more

insight as to why. Is it that the muscles in their hands are weak and the child gets too tired? Is the child distracted and not paying attention to the instruction?

Even though I (and other OTs) might identify deficits in a child's development, I use a strengths-based approach to build skills positively. Evidence-based practices and research help me choose the right interventions to help children make progress. Then, I put an action plan in place to help, based on the child's individual deficits.

From the moment I started working with children, I began collecting the toys, games, and activity ideas that I thought would be most helpful in supporting children's skills. Because of my passion for finding quality educational toys, in 2009 I began sharing online and through social media practical ways to play. I have built relationships with every major toy company and serve as an expert resource to toy industry professionals, where I'm known as the "ToyQueen," because I have personally reviewed, engaged with, and written hundreds of articles on toys, games, play, and development for children of all ages and abilities. I have served as a judge for the Toy of the Year in the United States, and for many years I have rated and judged toys for the ToyAward, a prestigious award given to only a few toys each year at Spielwarenmesse, a prominent international fair in Nuremberg, Germany.

I am constantly incorporating new toys into my practice, sharing my reviews and items through social media and on television segments, and I can't wait to share some of my classic favorites in this book. I'm always looking for the best items that are not only motivating and helpful for children but are also budget friendly and provide exceptional play value.

Working with children of all ages and abilities has given me some valuable information, which I'm going to share directly with you to help you make confident decisions and informed choices for the children you work with.

A Little Bit about Occupational Therapists

As an OT, I look at a person's ability to complete "activities of daily living." These are skills people need to perform every single day on their own, such as getting dressed using fasteners such as zippers and buttons; brushing their teeth thoroughly; tying shoelaces; and using utensils to scoop, pierce, or cut food. Performing these actions successfully requires that individuals have many underlying foundational skills, such as strength, coordination, control, and problem solving. As pediatric OTs, our profession is instrumental in helping children achieve these skills, if needed, from the day they are born into early adulthood.

OTs help individuals learn the skills to do their jobs or occupations in the settings that are appropriate for their age. For children, their "work" is to exhibit attention, strength, and coordination to play and learn at home, in community places such as playgrounds, and in their child-care facilities, preschools, and elementary schools. Pediatric OTs play a major role in teaching children how to focus on learning by using self-regulation skills and good coping skills, enabling children to perform their "jobs" to the best of their abilities. In addition, children need the right combination of strength and coordination to perform age-appropriate daily activities.

The clients or children we serve may have disabilities, diagnoses, delays, or medical conditions that affect their ability to achieve these skills. Consequently, to offer the support children need to make progress, OTs work in all sorts of places: hospitals, child-care programs, preschool programs, public schools, and community clinics and programs. Depending upon a child's age and which state they live in, we might be able to visit children at their homes to teach them these skills while also educating their family members on tips and tricks to work on these skills throughout the week. As much as possible, we help to foster inclusion by seeing children in their natural environments with other children their own age.

We make a difference in a child's life as early as the day they are born. Still, not many people are fully aware of the important roles occupational therapists play in helping children engage in their everyday activities. We are experts in developmental milestones, and our knowledge is valuable in helping children improve their skills to develop to their full potential.

Someone once asked me if the strategies that we use as therapists to help children with disabilities could be beneficial for typically developing children. Yes! As therapists, we first learn about typical development so we can support children who are struggling with certain skills. All the strategies we use are beneficial and can be applied to any child. Generally, development happens in a predictable path; some children just take longer than others to achieve these skills. No matter their age, the steps are the same.

Challenges with Fine Motor Skill Development

Over time, I've noticed that societal changes have contributed to fine motor skill deficits and other developmental delays, which makes it crucial to prioritize motor skills in early childhood settings. For example, babies need supervised "tummy time" to build head and neck control as well as upper-body and core muscle strength. But, in my experience,

the design and production of trendy infant devices such as rockers, swings, and portable car seats has made it harder for some families to remember to give their babies safe play opportunities on the floor.

Children have access to portable tablets and cell phones for long periods. A study by Common Sense Media found that, in the years from 2011 to 2013, the percentage of children with a smart mobile device at home increased from 52 percent to 75 percent (Common Sense Media, 2013). In 2020, Common Sense Media reported that children ages two to four were logging two and a half hours of screen time per day; for children ages five to eight, screen time increased to three hours per day (Rideout and Robb, 2020). At early ages, many children prefer technology, tablets, and video games over traditional toys and games, affecting skill development through play. The Michael Cohen Group (2014) reported that touch screens occupied 65 percent of playtime for children ages twelve and under. The children preferred electronic devices over traditional toys, such as dolls and action figures, board games, puzzles, construction blocks, and arts and crafts.

This preference for electronics has caused problems with young children's fine motor skills. When accessing their devices to play games and watch videos, many children use their thumbs and fingers awkwardly. Tablet and device use alone do not build the solid foundational motor skills needed for pencil use in the elementary school years. When they start school, children have more opportunities to use technology and type and have fewer opportunities to handwrite.

The COVID-19 pandemic affected a lot of experiences for children in those important infant, toddler, and preschool years. Researchers Watts and Pattnaik (2022) found that children became dependent on their family members to help them with their daily life skills and that many teachers reported students exhibiting delayed fine motor skills in the classroom. These challenges, coupled with the trend toward push-down academics in the early years, mean that many teachers feel pressure to expose children to writing letters, numbers, and sentences before they enter kindergarten (Bassok, Latham, and Rorem, 2016; Moyer, 2020). Grasp and fine motor development norms have not changed; instead, research supports guided play as a more appropriate approach (Bassok, Latham, and Rorem, 2016; Taylor and Boyer, 2020). As preschoolers are exposed to developmentally inappropriate academic activities, such as writing letters before they are developmentally ready to perform these complicated motor actions, they can develop inefficient and awkward grasp patterns, poor writing habits, and frustration in general with pencil-and-paper tasks. This leads to negative behaviors and task avoidance.

How to Use This Book

This book is focused primarily on helping early childhood teachers, family members, teacher trainers, and OTs to support and improve children's fine motor skills, from birth through the early education years and kindergarten. The amazing part about development is that the steps happen along a timeline, or a continuum, in a predictable order. So, the information in this book can also help older children who exhibit delays in their elementary school years.

I encourage you to become familiar with the developmental skills of children at certain ages and within different settings and environments. With that goal in mind, I share developmental information and appropriate practices, but there is always more to learn. To improve children's skills and limit frustration, try to keep a mindset of promoting general development that is appropriate for a given child's age and the setting they are in. Because curriculum standards are not always aligned with developmental expectations, I share ways to modify activities to meet the needs of children and to support their learning and skill growth.

How This Book Is Organized

- Chapter 1 shares key information about general developmental milestones and appropriate expectations for different ages.
- Chapter 2 explains the complicated process of how the hand develops strength and skill; this information serves as a basis for understanding school-readiness grasp patterns in chapter 3. Chapters 4, 5, 6, and 7 explore visual motor skills, which are the specific eye-hand coordination skills needed to play with toys and engage in various self-care tasks, such as manipulating fasteners, using eating utensils, and tying shoelaces.
- Chapter 8 offers lots of tips regarding safely and accurately cutting with scissors.
- In chapter 9, we tackle how to improve a child's writing performance with handwriting curriculums and pencil-and-paper activities.
- Looking for ways to promote fine motor skills through apps and technology? We explore that topic in chapter 10.
- Including family members is a great strategy for providing practice and repetition for learning, so Chapter 11 includes ways to help promote fine motor skills at home.

- As occupational therapists, we have a unique ability to modify activities to help a child improve their performance, so throughout the book, I share some of my favorite tips to make activities easier or harder, as needed, to build skills and improve confidence.
- Interspersed throughout this book, I share case studies. These real-life examples show how adults use strategies and tools to help a child accomplish a fine motor task, such as cutting or coloring, in order to make positive changes quickly when a child shows immature fine motor skills.
- The book concludes with several appendices that list my favorite toys by skill or concept, toy companies committed to designing quality educational toys, a list of common items that can be used for simple fine motor activities, as well as a glossary of some frequently used fine motor terms to use as a reference.
- Text boxes highlight tools and toys I've found particularly helpful, along with suggestions on how to use them in your classroom or home.

Fine motor skills are so much more than holding a pencil to write letters and numbers; these skills are how children use their hands to play and complete daily activities. My goal is that you will learn to think differently about the tools and activities you choose each day, to provide children with the best possible experiences for each stage of their development.

While I have personally spent thousands of dollars on toys and games in my career, you do not need a large budget to effectively help children improve their fine motor skills. My goal with this book is to offer a variety of suggestions for items that you can purchase or even create using common household items.

You will see recommendations for specific brands of toys and items in this book. These are not paid placements. If a toy, game, or company is included, it's because I personally recommend those specific brands or items that I believe have outstanding benefits or qualities. Please beware of knockoffs and off-brand items from discount stores or even websites such as Amazon or Temu. While you could save a few dollars up front, over time you might notice a difference in a child's experience with or use of the product.

Thank you for wanting to learn more about helping children improve their fine motor skills. Children learn through practice, repetition, and exposure, and the time you spend researching activities, buying materials and toys, and playing with these toys and games alongside children will be beneficial.

CHAPTER 1:

A Snapshot of Early Childhood Development

Development, no matter the skill area, is all about achieving milestones along a continuum or timeline. For example, an infant first begins to smile at around six weeks old and at about one year of age is often walking, waving hello, and speaking a few unclear words. Within each area of development are different skill sets, such as gross motor skills, fine motor skills, language, cognition, and self-help skills. Within each skill set are hundreds of steps along the continuum that happen over the course of many years. In short, development generally moves forward from one skill to another. Knowing about typical childhood development will make it much easier to spot weaknesses, so you can start helping children advance their skills.

As you work with children, you will learn which skills typically develop at which times. If a child enters your classroom and is not yet doing the things their peers are doing, you likely will notice that the child might be developing more slowly than other children. For lots of reasons, which might include experience and opportunity, some children do progress a little slower. This might indicate a delay, or the child could actually be performing within a range of what is considered typical for their age group.

If something doesn't seem quite right, perhaps after a developmental screening, you might share that information with the child's family—not to diagnose an issue but to make the family aware. As an early childhood educator, it is not your role to diagnose a disability, but you can encourage families to find resources to get the help the child

needs. Often, families will speak to a pediatrician to learn more, and the pediatrician will conduct their own screening. If a delay is present, early intervention is important to give children the support and help they need as soon as possible.

When a Child Has an Identified Delay in Skill Development

If a professional screening finds that a child does have a delay, the child might be referred to one or more specialized therapists. If a child has a delay in fine motor and/or self-care skills, they might be referred for occupational therapy services. If a child has a delay related to gross motor skills, such as sitting or walking, then they would be referred to a physical therapist. For language concerns, such as with speaking or understanding directions, the child would be referred to a speech pathologist. As therapists, we do our own testing, compare the results with the guidelines and checklists we have, and determine whether a child is performing within an age-appropriate range or is presenting with a delay so significant that it would be considered a disability.

If you are lucky enough to have a therapist visit your child-care or school classroom to work directly with a child, this can be an absolute gift! You might feel nervous and worried, but you'll feel better as you discover how helpful it is to have access to someone like an occupational therapist. The OT might bring toys and activities to help the children they work with. As a therapist, I give teachers and family members personalized activities to do that will help a child make progress. Often, those strategies will also benefit the other children in the classroom, too.

For children with developmental delays, some responsibility will fall on you to follow through with the OT's recommendations. When the OT is in your classroom, take advantage of the opportunity to watch how they interact and engage with children. Pass what you learn on to the child's other caregivers, because collaboration, whether at home or at school, will be the key to the child's success and progress. You will have the power and opportunity to make a tremendous difference in that child's development.

Prenatal Fine Motor Development

Can you believe that all the motor skills a person uses in their life start from the moment they are conceived and develop throughout the pregnancy? Here are some fun facts about the kinds of motor skills an unborn baby is developing. (Note that babies develop at their own rates, but these are the general time frames in which certain skills can be observed.)

According to Medline Plus (Martinez, Dugdale, and Conaway, 2023), a resource provided through the National Library of Medicine, a human typically follows a developmental timeline in the womb:

- **Around eight weeks' gestation:** The arms and legs are becoming longer, and the hands and feet are beginning to form.
- **Around ten to eleven weeks:** The hands and feet are formed, and finger- and toenails begin to form.
- **Around eleven to fourteen weeks:** The fetus can make a fist.
- **Around fifteen to eighteen weeks:** The fetus can move, stretch, and make sucking motions.
- **Around nineteen to twenty-one weeks:** The fetus can move around more and can swallow.
- **Around twenty-two weeks:** The fetus is more active with increased muscle movement.
- **Around twenty-three to twenty-five weeks:** The bone marrow begins to make blood cells, and the lower airways of the lungs begin to develop.
- **Around twenty-six weeks:** The eyes are developed, and the fetus may startle at loud noises. The lungs are not yet ready to function outside the womb.
- **Around twenty-seven to thirty weeks:** The brain grows rapidly, and the eyelids can open and close.
- **Around thirty-one to thirty-four weeks:** The bones are fully developed but still soft.
- **Around thirty-five to thirty-seven weeks:** The muscles and bones are fully developed.
- **Around forty weeks:** The baby could be born any day!

It is absolutely amazing that a baby begins to develop all the necessary motor skills for life while growing inside their mother. So, what changes after a baby is born? They need to perform all the same skills they learned in utero, but they now have to complete them against the force of gravity, without support from the amniotic fluid in the womb. Depending on the skill, it can take months, if not years, for a child to progress through the various stages of fine motor development. Life experiences and other considerations such as genetics and predisposition to other diagnoses can also affect skill development.

But what happens if babies are born prematurely, earlier than thirty-seven weeks? Children who have not had the time in utero to develop these skills will still need to do so after they are born. This is often why premature babies are in the hospital for a bit of time after birth while they adjust to the world and all its stimulation. They continue to grow and develop, just outside of the womb now. When children are born prematurely, they are at risk for many medical complications that might affect their future development. In fact, they are at risk for developmental delays in all areas, so they are often monitored by doctors and therapists for many years. To make sure these children stay on target with their skills, some families connect with OTs and other specialists right after a preterm birth, then engage in services almost immediately when discharged from the hospital. Premature babies will usually have their developmental milestones more closely monitored than babies who are born full-term without complications. Keep in mind, however, that children born prematurely do not necessarily exhibit delays.

CDC Milestone Tracker

The Centers for Disease Control and Prevention (CDC) offers a free website and app that can help families and early childhood educators monitor children's developmental milestones. Both the app and the website include free screening tools, activities, and suggestions on what to do if there are concerns for children from birth to age five. You can find the website here: https://www.cdc.gov/ncbddd/actearly/milestones/index.html

After a baby's birth, doctors monitor development, such as whether the baby can suck effectively to eat and gain enough weight, whether they are moving their arms and legs, and how they handle the stimulation of the world. As children age, pediatricians and family doctors monitor specific categories of development from birth into adulthood. These include areas such as the following:

- **Cognition:** the skills for a child's ability to pay attention, to remember details and sequences, and to solve problems creatively and quickly with good processing speed
- **Communication:** the ability to follow verbal instructions and to use sounds and words to communicate wants and needs clearly
- **Social-Emotional:** how children engage and interact with siblings, peers, parents, and teachers
- **Gross Motor:** skills that require strength and coordination in larger muscle groups, such as walking, jumping, and climbing, so children can explore their environment

EDU023000

Scoop, pull, twist, grip, pinch, zip, button, squeeze, and snip!

Do children in your class struggle with holding writing tools comfortably? cutting with scissors accurately? completing self-care tasks such as dressing and using eating utensils?

This practical guide, written by a pediatric occupational therapist, equips you with the tools to empower children's fine motor development! Inside, you'll discover:

- **Age-specific milestones:** Gain insight into typical fine motor skill progression for children from toddlers to preschoolers to early elementary students.
- **Ready-to-use activities:** Integrate engaging, developmentally appropriate exercises into your lessons to address key skills such as grasping, writing, and visual perception.
- **Differentiation strategies:** Tailor activities to meet individual needs.
- **Classroom adaptations:** Learn how to modify seating, tools, and tasks to create an inclusive learning environment that supports all abilities.
- **Collaboration tips:** Partner with families and therapists to provide seamless support for children's development.

Perfect for early childhood educators and special-education teachers, *Fine Motor Foundations* includes valuable resources for toy recommendations, skill-based activity lists, and downloadable materials to empower children, build their confidence, and develop their skills.

Keriann Wilmot, OTR/L,

also known as the "Toy Queen," is a pediatric occupational therapist with over 20 years of experience, a toy expert, and a parent of a child with special needs. Professionally, she specializes in working with infants and young children with ADHD, autism, sensory processing issues, and other physical disabilities and their families. You can learn more on her website: https://toyqueen.com.

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