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Watch How You Hold That Crayon

By PEG TYRE

NOAH LASCANO, 8, had a problem: His teachers couldn't read his handwriting. His homework became a frustrating exercise in

writing once, and then, at the teacher's request, writing again, just for legibility.

His brother, James, 5, was struggling in kindergarten — even drawing stick figures was a task. When his mother, Paula Lascano, tried to cajole him into completing a few workbook assignments, he reported that “his hand got too tired.”

Like many parents, Ms. Lascano decided it was time for help, so 10 months ago she hired Casey Halper, a pediatric occupational therapist, to work first with James, and then with Noah, once a week. The boys manipulated stiff green putty, put pegs into boards, created chains of pennies and plastic connectors and wrote the alphabet — again and again.

These days, many little fingers are being drilled. Twenty-five years ago, pediatric occupational therapists primarily served children with severe disabilities like [spina bifida](#), [autism](#) or [cerebral palsy](#). Nowadays, these therapists are just as focused on helping children without obvious disabilities to hold a pencil.

In affluent neighborhoods in and around New York, occupational therapists have taken their place next to academic tutors, [psychologists](#), private coaches and personal trainers — the army that often stands behind academically successful students.

Tim Nanof, legislative manager for the American Occupational Therapy Association, which has 38,000 members, said it's hard to know exactly how many children are receiving these services. But parents, pediatricians, educators and early childhood experts agree that plenty of able-bodied children are receiving occupational therapy.

“Twenty years ago, you could find O.T.'s working with children at [hospitals](#) or schools for the blind or the deaf,” said Christine Berg,

who oversees the curriculum for the Program in Occupational Therapy at the [Washington University](#) School of Medicine in St. Louis. “Now, many pediatric O.T.’s see their role as promoting fitness and enhancing kids’ performance in school.”

Pediatric occupational therapy may be something like Pilates for the pint-size set — a regime of techniques that promise to bestow unique benefits on the practitioner. Or, like the increase in neuropsychological testing and in the use of drugs to enhance a child’s attention, the increase in therapy could suggest something may have gone awry in schools, in our level of academic expectations or perhaps in childhood itself.

“On one hand, I think it’s perfectly in line with the contemporary trend for parents and educators to seek high-priced specialists to treat the routine problems of childhood,” said Dr. Philippa Gordon, a popular pediatrician in Park Slope, Brooklyn, who is a medical adviser to the highly opinionated Park Slope Parents Web site. “On the other hand, I see that early intervention can keep little problems from becoming big ones.”

Linda Florin, who runs a private concierge service in Manhattan, paid a therapist \$125 a week for nearly three years to help her son, Wyatt, now a first grader at Columbia Prep, improve his hand strength and control a pencil. She says it was money well spent. “School isn’t easy and it gets harder as they get older,” Ms. Florin said. “I wanted him to be able to keep up with everyone else.”

She also said the stigma is gone: “Back when I was a child, seeing an O.T.? Forget it. That was for kids who had spinal cord injuries.” Last year, she said, so many friends from her social circle were taking their children to occupational therapists that it seemed like a part of normal childhood.

“Seeing an O.T. was once an admission that something was seriously wrong with your child,” said Paula McCreedy, who, with her partner, Prudence Heisler, opened a branch of their busy Greenwich Village practice in Brooklyn Heights in part to meet the growing demand of private paying families seeking therapy. These days, she said, “many parents are finding that pediatric occupational therapists can help their children to be the best that they can be.”

In Manhattan, the brutally competitive nursery and kindergarten admissions process is leading many parents to sign up their toddlers for therapy. “Preschool admissions tests loom large,” said Margie Becker-Lewin, an occupational therapist on the Upper West Side. “In many cases, parents know there is nothing wrong with their child, but they feel caught in the middle.”

Their child might be exhibiting a minor fine-motor delay at a play group, she added, “and the parents understand that as the children get involved in the admissions process that there is not as much tolerance for a range of abilities as there once was.”

One father on the Upper East Side said [anxiety](#) about his son’s grip — his 3-year-old holds crayons in his fist — propelled him to seek therapy.

“The nursery admission people tell you they want your child to be ready to learn how to write,” said the father, who spoke anonymously so his son wouldn’t run afoul of nursery school administrators. “And I knew they would take one look at the way my son held a crayon and he’d be out of the running.”

The father pointed out that many families use occupational therapists to help their children gain admission to elite schools. “Even with the economy like it is, the hottest question when we

socialized at our country house this summer was not what country club do you belong to, but who is your child's O.T. back in the city. And how can I get an appointment?"

For some grade-school children, occupational therapists are also filling the void left by schools, many of which no longer provide instruction on the mechanics of handwriting. According to a survey conducted by the American Occupational Therapy Association, about 30 percent of their members now work in schools, up from 18.6 percent in 1999. Those therapists, said Ms. Berg of Washington University, tend to spend the bulk of their time helping children write legibly.

"Many teachers don't know how to do it," Ms. Berg said. "O.T.'s can help."

Linda Tulloch waited in vain for teachers at the North Street School, a public elementary school in Greenwich, Conn., to provide her son, Jack, now a fifth grader, with handwriting instruction. "As early as second grade I could see he needed help shaping his letters and numbers," she said.

But Jack's teachers told her that handwriting was old school and that students would wield a keyboard, not a pencil. "That didn't sit well with me," Ms. Tulloch said. "Kids can't use a keyboard to take a test or do math." Ultimately, Ms. Tulloch hired a tutor, who uses a handwriting program, Handwriting Without Tears, designed by an occupational therapist.

Steve Sanders, director of the University of South Florida School of Physical Education and Exercise Science, also points to ramped-up expectations. "I'd say schools that push serious academics into kindergarten and pre-school — and emphasize

sitting at desks and learning — are creating some of this problem,” he said.

But Anthony DiCarlo, the longtime principal of the William E. Cottle Elementary School in Tuckahoe, N.Y., a suburb north of Manhattan, said that many children are experiencing delays in their fine and gross motor skills.

“Almost all our kids come into kindergarten able to recite their letters and their numbers,” Mr. DiCarlo said. “Some can even read. But in the last five years, I’ve seen a dramatic increase in the number of kids who don’t have the strength in their hands to wield a scissors or do arts and crafts projects, which in turn prepares them for writing.”

Many kindergartners in his community, he said, have taken music appreciation classes or participated in adult-led sports teams or [yoga](#). And most have also logged serious time in front of a television or a computer screen. But very few have had unlimited opportunities to run, jump and skip, or make mud pies and break twigs. “I’m all for academic rigor,” he said, “but these days I tell parents that letting their child mold clay, play in the sand or build with Play-Doh builds important school-readiness skills, too.”

The problem has become so acute that two years ago, Mr. DiCarlo hired a full-time occupational therapist to work with the 500 students in his elementary school. The therapist, Deirdre Madden, spends 40 percent of her day with children who have diagnosed disabilities, and the rest of her time improving the fine motor skills and muscle control of the rest of the students.

“In my previous job I was working with children who had much more severe disabilities, and I couldn’t really see what role I’d have in a regular school,” Ms. Madden said. “But it turns out that

many of the children here needed more support. And I'm only too happy to help."

Psychology Encyclopedia

Skills involving control of the fingers, hands, and arms.

Fine motor skill involves deliberate and controlled movements requiring both muscle development and maturation of the **central nervous system**. Although newborn infants can move their hands and arms, these motions are **reflexes** that a baby cannot consciously start or stop. The development of fine motor skills is crucial to an infant's **ability** to experience and learn about the world and thus plays a central role in the development of **intelligence**. Like **gross motor skills**, fine motor skills develop in an orderly progression, but at an uneven pace characterized by both rapid spurts and, at times, frustrating but harmless delays. In most cases, difficulty with certain fine motor skills is temporary and does not indicate a serious problem. However, medical help should be sought if a child is significantly behind his peers in multiple aspects of fine motor development or if he regresses, losing previously acquired skills.

Infancy

The hands of a newborn infant are closed most of the time and, like the rest of her body, she has little control over them. If her palm is touched, she will make a very tight fist, but this is an **unconscious** reflex action called the Darwinian reflex, and it disappears within two to three months. Similarly, the infant will grasp at an object placed in her hand, but without any awareness that she is doing so. At some point her hand muscles will relax,

and she will drop the object, equally unaware that she has let it fall. Babies may begin flailing at objects that interest them by two weeks of age but cannot grasp them. By eight weeks, they begin to discover and **play** with their hands, at first solely by **touch**, and then, at about three months, by sight as well. At this age, however, the deliberate grasp remains largely undeveloped.

Hand-eye coordination begins to develop between the ages of 2 and 4 months, inaugurating a period of trial-and-error practice at sighting objects and grabbing at them. At four or five months, most infants can grasp an object that is within reach, looking only at the object and not at their hands. Referred to as "top-level reaching," this achievement is considered an important milestone in fine motor development. At the age of six months, infants can typically hold on to a small block briefly, and many have started banging objects. Although their grasp is still clumsy, they have acquired a fascination with grabbing small objects and trying to put them in their mouths. At first, babies will indiscriminately try to grasp things that cannot be grasped, such as pictures in a book, as well as those that can, such as a rattle or ball. During the latter half of the first year, they begin exploring and testing objects before grabbing, touching them with an entire hand and, eventually, poking them with an index finger.

One of the most significant fine motor accomplishments is the pincer grip, which typically appears between the ages of 12 and 15 months. Initially, an infant can only hold an object, such as a rattle, in his palm, wrapping his fingers (including the thumb) around it from one side, an awkward position called the palmar grasp, which makes it difficult to hold on to and manipulate the object. By the age of eight to ten months, a finger grasp begins, but objects can only be gripped with all four fingers pushing against the thumb, which still makes it awkward to grab small objects. The development of the pincer grip—the ability to hold

objects between the thumb and index finger—gives the infant a more sophisticated ability to grasp and manipulate objects, and also to deliberately drop them. By about the age of one, an infant can drop an object into a receptacle, compare objects held in both hands, stack objects, and nest them within each other.

Toddlerhood

Toddlers develop the ability to manipulate objects with increasing sophistication, including using their fingers to twist dials, pull strings, push levers, turn book pages, and use crayons to produce crude scribbles. Dominance of either the right or left hand usually emerges during this period as well. Toddlers also add a new dimension to touching and manipulating objects by simultaneously being able to name them. Instead of only random scribbles, their drawings include patterns, such as circles. Their play with blocks is more elaborate and purposeful than that of infants, and they can stack as many as six blocks. They are also able to fold a sheet of paper in half (with supervision), string large beads, manipulate snap toys, play with clay, unwrap small objects, and pound pegs.

Preschool

The more delicate tasks facing preschool children, such as handling silverware or tying shoelaces, represent more of a challenge than most of the gross motor activities learned during this period of development. The central nervous system is still in the process of maturing sufficiently for complex messages from the **brain** to get to the child's fingers. In addition, small muscles tire more easily than large ones, and the short, stubby fingers of preschoolers make delicate or complicated tasks more difficult.

Finally, gross motor skills call for energy, which is boundless in preschoolers, while fine motor skills require patience, which is in shorter supply. Thus, there is considerable variation in fine motor development among this age group.

By the age of three, many children have good control of a pencil. Three-year-olds can often draw a circle, although their attempts at drawing people are still very primitive. It is common for four-year-olds to be able to use scissors, copy geometric shapes and letters, button large buttons, and form clay shapes with two or three parts. Some can print their own names in capital letters. A human figure drawn by a four-year-old is typically a head atop two legs with one arm radiating from each leg.

School age

By the age of five, most children have clearly advanced beyond the fine motor skill development of the preschool age. They can draw recognizably human figures with facial features and legs connected to a distinct trunk. Besides drawing, five-year-olds can also cut, paste, and trace shapes. They can fasten visible buttons (as opposed to those at the back of clothing), and many can tie bows, including shoelace bows. Their right-or left-[handedness](#) is well established, and they use the preferred hand for writing and drawing.

Encouraging fine motor development

Encouraging gross motor skills requires a safe, open play space, peers to interact with, and some adult supervision. Nurturing the development of fine motor skills is considerably more complicated. Helping a child succeed in fine motor tasks requires planning, time, and a variety of play materials. Fine motor

development can be encouraged by activities that youngsters enjoy, including

This six-month-old has mastered the fine motor skills necessary for picking up an object and guiding it to her mouth. (Patrick Donehue. Photo Researchers, Inc. *Reproduced with permission.*)

crafts, puzzles, and playing with building blocks. Helping parents with everyday domestic activities, such as baking, can be fun for the child in addition to developing fine motor skills. For example, stirring batter provides a good workout for the hand and arm muscles, and cutting and spooning out cookie dough requires hand-eye coordination. Even a computer keyboard and mouse can provide practice in finger, hand, and hand-eye coordination. Because the development of fine motor skills plays a crucial role in school readiness and **cognitive development**, it is considered an important part of the preschool curriculum. The Montessori schools, in particular, were early leaders in emphasizing the significance of fine motor tasks and the use of learning aids such as pegboards and puzzles in early **childhood** education. The development of fine motor skills in children of low-income parents, who often lack the time or knowledge required to foster these abilities, is a key ingredient in the success of programs such as Head Start.

Read more: [Fine Motor Skills - Infancy, Toddlerhood, Preschool, School age, Encouraging fine motor development - Significance Level, Adolescence, and Right Brain - JRank Articles](http://psychology.jrank.org/pages/247/Fine-Motor-Skills.html#ixzz3EiuKWe7U) <http://psychology.jrank.org/pages/247/Fine-Motor-Skills.html#ixzz3EiuKWe7U>

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