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# The Roles of Occupational Therapy, Physical Therapy, and Speech/Language Pathology in Primary Care

Lauren Peranich, Kristen B. Reynolds, Shirley O'Brien, Joni Bosch, and Tamara Cranfill



## ABSTRACT

Occupational therapy, physical therapy, and speech language pathology services may be of significant help to patients of nurse practitioners (NPs) in primary care. NPs should be aware of the depth and breadth of services offered by these colleagues, and consider early referral to them. This article describes the different rehabilitation disciplines and some of the ways in which their services may benefit patients.

**Keywords:** occupational therapy, physical therapy, primary care provider, speech/language pathology

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**W**hat do a 73-year-old woman with age-related macular degeneration, a 35-year-old woman with the hypermobility form of Ehlers-Danlos syndrome, and a 6-year-old boy who has problems paying attention in school but has not benefited from stimulant medication have in common? They may all benefit from a referral to an occupational therapist (OT), physical therapist (PT), or speech-language pathologist (SLP). Nurse practitioners (NPs) should be aware of the breadth and depth of services offered by practitioners in other disciplines, as they may be able to contribute to health and wellness in our patient populations. Just as NPs believe early identification and treatment improves outcomes, early referral to our colleagues in OT, PT, and SLP may improve outcomes as well.

Our colleagues are autonomous primary care professionals; their services need not be prescribed or supervised by another professional. They may even be a source of referral for our services, as they identify needs in their own patient populations.

## **OCCUPATIONAL THERAPY**

### **Origin and Education**

The National Society for the Promotion of Occupational Therapy, now called the American Occupational Therapy Association, was founded in 1917.<sup>1</sup> Certification in occupational therapy requires a post-baccalaureate degree (either a master's or a doctorate) from an accredited college/university by the Accreditation Council of Occupational Therapy Education (ACOTE).<sup>2</sup> Coursework includes anatomy, neuroscience, psychology, kinesiology, and courses that focus on school systems/pediatrics, mental health, physical disabilities, health care delivery systems, management, health promotion, and research. To practice as an occupational therapist, graduates must pass a certification examination administered by the National Board of Certification in Occupational Therapy (NBCOT). OTs are regulated in all 50 states, required to hold licensure in 48 states, and have specific requirements by state licensure for continuing competency.<sup>3</sup> OTs are primarily responsible for evaluation, intervention, and discharge of a client needing services. Occupational therapy assistants (OTAs), who are graduates of associate degree programs, gather evaluation data and perform intervention under the supervision of an OT.<sup>4</sup> Occupational therapists are known for their problem-solving abilities in contextual adaptation fostering client-centered engagement in valued activities for individuals and populations.

### **Childhood**

OTs work with children in acute and long-term rehabilitation, hospital, outpatient, home health settings, and in the school system. Children with sensory integrative disorders such as tactile or auditory hypersensitivity may benefit from an early referral to OT either through the school system or private outpatient services. Sensory integrative disorder can hinder a child's performance at school or in the home, due to the child's inability to appropriately regulate his or her proprioceptive, vestibular, and tactile sensory systems. It is sometimes confused with ADHD.<sup>5</sup> OT services benefit children with autism spectrum disorders. In the school system, OTs collaborate with the teachers, behavioral psychologist, and speech/language pathologists to adapt the environment to the child's strengths and weakness. Through interdisciplinary teamwork in a school setting or outpatient services, children with autism may improve their ability to effectively communicate, increase attention, and learn socially appropriate behaviors. OTs may also assist children with handwriting or alternative methods of completing written school work and contextual adaptations.

### **Adulthood**

Examples of adult problems benefitting from OT services include Ehlers-Danlos syndrome, carpal tunnel syndrome, nerve injuries, and DeQuervain's disease. Although treatments such as NSAIDs, splinting, corticosteroid injections, or even surgery should solve problems such as DeQuervain's, affected individuals may still experience a good deal of interruption in their daily life. OTs can assess the activities required of patients on a day-to-day basis at work or at home. OTs fabricate splints and educate on building tolerance and wearing schedules. Exercises and compensatory techniques can decrease pain when engaged in activities. The OT assists clients with joint protection, energy conservation, and work simplification. OTs assess clients in work sites and homes to determine modifications to decrease repetitive-use injuries or to develop and implement adaptive equipment or techniques.<sup>6</sup> Early referral is critical in preventing or limiting advancement of many conditions of a repetitive nature.

### **Geriatrics**

The aging population experiences a variety of problems, such as macular degeneration, which can have a negative impact in many areas, including self-care, home management, productivity, leisure activities, and self-esteem.

These concerns are also present with other chronic conditions such as arthritis or chronic obstructive pulmonary disease (COPD). An individual with arthritis in the hands may have problems cooking, cleaning, and engaging in other valued activities. A person diagnosed with COPD may have problems getting through the day without becoming low on energy. An early referral to occupational therapy for those with chronic diseases may help these individuals continue participating in their valued activities. Through skilled occupational therapy services, patients can be given the remedial or compensatory skills required of activities of daily living, including low vision, chronic pain, or poor activity tolerance. OTs assess clients in the home and make recommendations for alternative techniques, modifications, or assistive devices to help the client maintain maximum independence.<sup>7</sup> Examples of adaptations for problems with low vision include application of contrasting stickers to the water faucets to clearly identify hot and cold taps; placing the most frequently used toiletries in one place; buying color-contrasting utensils, dishes, and placemats for the kitchen; and using magnifying glasses as well as increased lighting. Those with problems such as arthritis might benefit from built-up handles to be applied to cooking utensils and cleaning supplies to make gripping less strenuous. Individuals with COPD can be taught pursed-lip breathing and energy conservation techniques to allow them to continue to enjoy valued activities. Occupational therapy evidence has been highlighted in the promotion of aging.<sup>8</sup> Through engagement in valued occupations, elderly clients were better able to maintain functional performance. Lifestyle redesign through the problem solving of OTs facilitated the improved engagement in daily occupations.

## PHYSICAL THERAPY

### Origin and Education

Physical therapy (PT) developed from the training of Rehabilitation Aides following World War II. Today, physical therapists (PTs) are known as movement experts and the health care providers of choice for neuromusculoskeletal deficits.<sup>9</sup> Currently, 93% of PT pro-

grams in the United States offer a Doctor of Physical Therapy (DPT), with the remaining programs conferring a master's degree.<sup>9</sup> Didactic instruction includes the basic sciences of human anatomy, neuroscience, and kinesiology, as well as the neuromusculoskeletal system, the cardiopulmonary system, orthopedics, manual therapy, pediatrics, and geriatrics. In addition, DPT curricula provide coursework in health promotion and wellness, pathology, differential diagnosis, pharmacology, and radiology and imaging. To qualify for licensure, graduates must pass the National Physical Therapy Examination.<sup>10</sup> In addition to the usual areas of practice, PTs also conduct musculoskeletal screenings and ergonomic evaluations in settings such as health clubs, gyms, and occupational health centers. Increasing numbers of physical therapists work in emergency departments (EDs), because musculoskeletal complaints account for 25% to 28% of ED visits annually.<sup>11</sup>

Several hospitals have reported that utilizing PTs for musculoskeletal screenings in EDs results in reductions in unnecessary imaging, shorter wait times for referrals to orthopedic or neurological specialists, and improved patient education.<sup>11</sup> Like OTs, PTs determine the proper fit of assistive

devices, splint injuries, treat wounds and burns, prescribe exercises to increase strength or endurance, and perform manual therapy to increase joint range of motion. PTs also perform gait analysis, provide gait training, and conduct wheelchair evaluations.

### Childhood

Practice settings range from the neonatal intensive care unit (NICU) to youth sports, and from outpatient clinics to the school system. Pediatric PTs use an assortment of standardized clinical tools and functional play to identify and monitor concerns with gross motor skills. They aim to establish normal motor patterns, help children achieve motor milestones, and prevent secondary impairments. This is accomplished through proper positioning, proper use of orthotics, improvement of oculomotor and trunk control through movement, and prevention of adaptive muscle shortening and joint contractures. Medical diagnoses commonly seen by pediatric PTs include cerebral

**Early referral to an OT is critical in preventing or limiting advancement of many conditions of a repetitive nature.**

palsy, Down syndrome, muscular dystrophy, spina bifida, and autism-spectrum disorders. Other diagnoses include burns, diabetes, childhood obesity, cancer, orthopedic conditions such as scoliosis, neurologic conditions such as brain injury, and cardiopulmonary disorders such as cystic fibrosis or asthma.

### Adulthood

Individuals with osteoarthritis, frozen shoulder, carpal tunnel syndrome, and other painful conditions can benefit from PT intervention to help them manage their pain, improve their ability to move, protect their joints, and prevent deconditioning and atrophy. However, PTs also treat acute or repetitive injuries sustained by “weekend warriors,” including golf or tennis players with tendonitis, sprains, and strains. Furthermore, because 80% to 90% of the Western population will experience at least one episode of neck or low back pain in their lifetime, PTs strongly encourage strengthening programs and education on proper posture and lifting techniques.<sup>12</sup> The 2001 Philadelphia Panel Evidence-Based Clinical Practice Guidelines for Low Back Pain found that therapeutic exercise is effective treatment for chronic, subacute, and post-operative back pain.<sup>13</sup> One third of the population between the ages of 25 and 84 has one or more pelvic floor muscle disorders.<sup>14</sup> Women’s health PTs provide pelvic floor muscle strengthening for patients with pelvic pain, post-partum low-back pain, or incontinence.

### Geriatrics

Fall prevention represents one of the most important issues PTs can address with a geriatric population. One in 3 individuals over the age of 65 falls annually, and one third of those who fall require continued assistance with their daily activities.<sup>15</sup> Fall prevention begins with identifying risk factors and possible causes. For example, 30% of people over the age of 65 experience at least one episode of vertigo, which increases fall risk.<sup>16</sup> Many PTs are therefore certified to provide vestibular rehabilitation to treat these episodes of dizziness without a doctor’s referral. Fall risk may also be affected by incontinence, which can be addressed and treated by specialized PTs. Additionally, falls can be caused by complications of osteoporosis or deconditioning, both of which PTs can address with strengthening and weight-bearing activities to increase confidence with balance.

## SPEECH/LANGUAGE PATHOLOGY

### Origin and Education

Speech-language pathologists (SLPs), as defined by American Speech-Language-Hearing Association (ASHA), hold the ASHA Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP), which requires a master's, doctoral, or other recognized post-baccalaureate degree.<sup>17</sup> SLPs hold other requisite credentials (eg, state licensure, teaching certification) according to individual state requirements. This requires completion of a 9- to 12-month post-graduate experience and passing a national examination prescribed by ASHA.

SLPs are professionals who engage in clinical services, prevention, advocacy, education, administration, and research in the areas of communication and swallowing across the life span.<sup>11</sup> The professional roles and activities in SLP encompass clinical and educational services, prevention and advocacy, education, administration, and research conducted in a variety of work settings. The primary objective of SLP services is to improve quality of life by optimizing individuals' ability to communicate and swallow.

The World Health Organization International Classification of Functioning, Disability, and Health<sup>18</sup> provides the framework used by the profession to examine and treat health conditions. For example, in the area of body functions and structures, SLPs may assess and treat patients with cerebral palsy, craniofacial anomaly, language impairment, stuttering, and vocal fold paralysis. The area “Application of Activity and Participation” refers to the execution of a task or action in a life situation. Relevant examples in SLP include difficulties with accessing the general education curriculum, participating actively in class, swallowing safely for independent feeding, and understanding a medical prescription. “Environmental factors” identified by the WHO make up the physical, social, and attitudinal environments in which people live and conduct their lives. Examples pertinent to SLP include the influence of classroom acoustics on communication, the impact of dining environments on individuals’ ability to safely maintain nutrition and hydration, and the role of the communication partner in augmentative and alternative communication. More specifically, SLPs address typical and atypical communication and swallowing in the following areas:

- Speech sound production (apraxia of speech, articulation, dysarthria, dyskinesia)
- Resonance (hypernasality, hyponasality, mixed resonance)
- Voice (phonation quality, respiration); stuttering and/or cluttering
- Language (comprehension and expression, phonology)
- Pragmatics (language use, social aspects of communication)
- Literacy (reading comprehension, writing, spelling)
- Prelinguistic communication (eg, joint attention, intentionality, communicative signaling)
- Cognition (attention, memory, sequencing, problem solving, executive functioning)
- Feeding and swallowing (oral, pharyngeal, laryngeal, esophageal)
- Oral-motor functions

### Childhood

Children may experience a variety of conditions requiring the services of an SLP. Potential etiologies of communication and swallowing disorders include:

- neonatal problems (eg, prematurity, low birth weight, substance exposure) developmental disabilities (eg, specific language impairment, autism spectrum disorder, dyslexia, learning disabilities, attention deficit disorder)
- auditory problems (eg, hearing loss or deafness)
- oral anomalies (eg, cleft lip/palate, dental malocclusion, macroglossia, oral motor dysfunction)
- respiratory compromise (eg, bronchopulmonary dysplasia, chronic obstructive pulmonary disease)
- pharyngeal anomalies (eg, upper airway obstruction, velopharyngeal insufficiency/incompetence)
- Genetic disorders (eg, Down syndrome, fragile X syndrome, Rett syndrome, velocardiofacial syndrome.)

Many of these problems are obvious, and appropriate consults may be made early in the neonatal period or early childhood. Language impairments, however, may be a hidden source of behavior problems, learning problems, or appear to be an atypical presentation of ADHD. Language impairments may be receptive, expressive, or both (mixed). While articulation problems are easily identified, language impairments may require specialized testing for identification. NPs should be aware that children with language impairment can often communicate, but their comprehen-

sion or ability to express themselves may not be as good as assumed by others in their environment. Autism is an increasingly common diagnosis in the pediatric population with significant impairment in communication. It should also be noted that failure to identify hearing problems and initiate a compensatory form of communication may permanently impair language development.

### Adulthood

Adults may develop laryngeal anomalies (eg, vocal fold pathology, tracheal stenosis, tracheostomy) or neurological disease/dysfunction (eg, traumatic brain injury [TBI], Parkinson's disease, amyotrophic lateral sclerosis [ALS]) and may benefit from the services of an SLP both for concerns regarding swallowing and for communication. Some hospitalized patients, particularly those who are intubated, may also benefit from the assistive communication devices or methods an SLP can provide. Consider a referral for patients with problems such as cerebral palsy and recurrent pneumonias or sinusitis, as impaired swallowing may be the cause.

### Geriatrics

Cerebral vascular accident and dementia are both causes of language or swallowing impairments that may develop during later adulthood and may have a negative impact on health and interpersonal relationships. Consultation with an SLP may assist in enabling elders to adapt to normal aging processes such as changes in taste and smell. Without tastes and smell, foods have little flavor. These changes alone may be sufficient to inhibit food intake even though hunger may persist. Normal aging may also impact swallow function, hearing acuity, and memory/recall; all areas that could benefit from SLP services.

### SPECIAL PEDIATRIC POPULATIONS

Children with developmental delays, or merely at risk for delays, may benefit from OT, PT, or SLP services under part C, the Early Intervention Program, of the Individuals with Disabilities Education Act (IDEA), which “focuses on services for infants and toddlers with disabilities and their families.”<sup>19</sup> Specialized services may allow them to develop the skills needed to function in the least restrictive environment. Services for children under 3 are provided in a home or daycare setting.

## BRAIN INJURIES

In any practice setting, PTs, OTs, and SLPs may see patients who have sustained brain injuries. The primary role of the therapists in an interdisciplinary team is to help prevent secondary complications from the injury and enhance function in the patient's daily life. Thus, PTs and OTs seek to maintain skin integrity, normalize muscle tone, improve posture, increase range of motion, and enhance strength and endurance. They also provide treatments to improve motor control and planning, coordination, and balance. PTs can additionally improve gait and symptoms of vertigo or neglect. During activity, PTs and OTs often break down functional tasks into their component parts. They emphasize repetition of these partial tasks in different environments and under different circumstances to challenge patients and facilitate progress. It may be necessary to find assistive devices or alternative ways to accomplish activities, which may also increase patients' tolerance to activity. Those who have experienced a brain injury may have problems with swallowing. SLPs are equipped to assess the executive function, memory, and attention of people post-brain injury. All aspects of communication can be a problem, from understanding to word finding and generating speech. Therefore, even the rehabilitation conducted by other professionals (ie, OTs and PTs) may require adaptation of instructions or procedures to accommodate the patient's ability to understand and follow physical directives. Assistive devices, such as PDAs, are frequently used to assist with organization, recall, and planning. Augmentative communication systems may be necessary for those patients with dysarthria, speech apraxia, or paralysis.

## SERVICES FOR SPECIAL ADULT POPULATIONS

In addition to treating stroke or spinal cord injury (SCI), these therapists also treat progressive disorders. They seek primarily to enhance patients' functioning and prevent secondary complications. For example, PTs and OTs may educate patients with rheumatoid arthritis on joint protection principles and work with

patients with multiple sclerosis to maintain or improve endurance. When treating these patients who experience periods of exacerbation, therapists educate on ways to manage pain. For patients with Parkinson's disease, PTs improve gait patterns and movement initiation; for patients with ALS, therapists maintain strength and range of motion and assist in procuring proper mobility and adaptive equipment. Therapists also emphasize prevention by educating patients about pressure sores and by helping patients prevent or manage chronic diseases like diabetes. Studies have shown that individuals with pre-diabetic indicators who successfully lose weight and increase physical activity levels can prevent or delay the onset of type 2 diabetes.<sup>20</sup> Therapists help these individuals, as well as individuals already diagnosed with type 2 diabetes, manage their blood glucose levels through exercise. Speech/language

pathologists may often be overlooked when referring for progressive disease services. However, the SLP can counsel and assist the patient and support network plan for future communication and swallowing adaptations for conditions such as ALS and Parkinson's disease. Neck pain secondary to spinal stenosis or cervical deformities secondary to arthritis can impact efficient

swallow function. Patients with these progressive diseases may begin to avoid particular foods or liquids, resulting in reduction in nutrition and hydration.

## NEW OR CONTROVERSIAL TREATMENTS

The professions of physical, occupational, and speech/language therapy require an evidence-based approach, and research explores the benefits of new treatments. Among current topics in PT and OT research are constraint-induced movement therapy, functional electrical stimulation, and body-weight supported treadmill training. In addition, the advent of virtual reality technology has stimulated research in the use of this and gaming technologies, such as the Wii and Dance Dance Revolution, to improve balance, endurance, static and dynamic standing, visual-perception, visual-motor skills, and gross-motor skills. Robotics have played a role in the

**Just as NPs specialize yet collaborate to improve patient outcomes, rehabilitation therapists work together and with other licensed practitioners.**

treatment of amputations, strokes, TBIs, and SCI. Speech/language pathology researchers are examining many of the same areas with an eye toward brain plasticity as it impacts communication. Constraint-induced communication therapy, electrical stimulation for swallow function, and simulation activities mirroring community-based participation have been explored. Gaming technologies are being used by SLPs to enhance participation, memory, and attention behaviors for individuals with dementia and Alzheimer's disease. In keeping with technology, some therapists are exploring telehealth options with their patients. Others have begun incorporating more traditional practices, such as yoga and tai chi, into their treatments.

### COLLABORATIVE PRACTICE

Just as NPs specialize yet work together to improve patient outcomes, rehabilitation therapists work together and with other licensed independent practitioners (LIPs). PTs and OTs may work together to create a postural support system for a patient with neuromuscular problems in need of a wheeled mobility system. This, in turn, assists the SLP with increasing needed respiratory support and endurance for speech production or safe PO intake. OTs may work with SLPs to create a communication system for a patient with dysarthria or develop a safe method for self-feeding for individuals with cerebral palsy.

### GUIDELINES FOR CMS REFERRALS

Medicare and Medicaid have rules governing ordering and billing for OT, PT, and speech/language services. Many other insurance companies use the same or similar guidelines. NPs are allowed to order OT, PT, and speech/language services for patients under their care, as well as durable medical equipment (DME) recommended by those therapists.<sup>21</sup> Ordering NPs need to be treating the beneficiary, practicing independently, able to bill Medicare using their own provider number, and have been granted the rights to do so by the state NP practice act.

NPs who have not already done so should obtain an NPI number even if they typically bill under the name of another person. The documentation in the medical record needs to support the referral for services and any DME. Physical, occupational, and speech/language therapy services covered by CMS require certification, which is a plan of care signed and dated by the ordering clinician. Progress

summaries are required from each discipline every 30 days or every 10 treatment visits, whichever comes first. Recertification must be done every 90 days. Power mobility systems may require a statement that the patient was seen in a face-to-face evaluation for the purpose of evaluating their need for a powered mobility system.

Information about ordering DME for patients on Medicare can be found at the following link: <http://www.cms.hhs.gov/manuals/downloads/pim83c05.pdf>. Additional resources for CMS can be found on the following websites: <http://www.cms.hhs.gov/Manuals/IOM/itemdetail.asp?filterType=none&filterByDID=99&sortByDID=1&sortOrder=ascending&itemID=CMS012673&intNumPerPage=10>, <http://www.cms.hhs.gov/home/medicare.asp>, <http://www.cms.hhs.gov/manuals/downloads/pim83c05.pdf>, <http://USA.gov/questions>

A certificate of medical necessity is required for oxygen, compression devices, osteogenesis stimulators, transcutaneous electrical nerve stimulators, seat lift mechanisms, and enteral and IV pumps. The NP is only required to complete sections B and D, while the supplier completes A and C. Remember that there is an additional billing code, G0372, which can help cover the time it takes to provide the documentation for some DME, such as power mobility systems.

### SUMMARY

OTs, PTs, and SLPs can be a significant source of assistance to primary care patients with a variety of problems throughout their lifespan. Early referral is likely to result in a better outcome. Medicare requirements may require a face-to-face evaluation by an LIP prior to the referral to an OT, PT, or SLP, and a re-evaluation every 60 days is often necessary. **JNP**

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NPA is conducting a survey examining the impact of mandatory physician collaboration on NP practice and patient access to NP services. We encourage primary care NPs from every state to log on to our website at [www.npedu.com/survey](http://www.npedu.com/survey) to participate in this 10-minute survey. Look for the results in an upcoming issue of JNP.

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