

FACT SHEET

Neonatal Physical Therapy Practice: Roles, Subspecialty Training and Resources for Evidence-Based Practice

The American Physical Therapy Association Academy of Pediatrics and the American Board of Physical Therapy Residency and Fellowship Education have recognized neonatal physical therapy as a subspecialty area of practice requiring advanced expertise. This Fact Sheet was developed to coincide with the Neonatal Physical Therapy Competencies article series by Sweeney et al.

RATIONALE

Neonates are infants (birth to 12 months of age) with medical fragility. They require specialized care due to physiological, behavioral, and developmental vulnerabilities. Neonatal physical therapists play important roles in the interdisciplinary neonatal care team.

Guidelines outlining neonatal physical therapy roles, competencies, and scope of practice have been published.^{1,2} The advanced practice setting of the Neonatal Intensive Care Unit (NICU) is not appropriate for physical therapist assistants or for direct caregiving by student physical therapists. Guided observational experiences in the NICU for student physical therapists may provide a beginning foundation for post-entry level competency development.³ In preparation for providing advanced practice physical therapy services for medically fragile infants in NICU settings, recommendations are outlined below for mentored, sequential, competency-based clinical education and precepted training.

RECOMMENDATIONS FOR DEVELOPING EXPERTISE IN NEONATAL PHYSICAL THERAPY

The vulnerability of neonates born prematurely or with complex medical conditions requires physical therapy services by physical therapists with specialized training to meet the complex needs of this population and who are up to date on available evidence in this subspecialty area. Clinicians seeking to practice in this unique area should participate in evidence-based continuing education, mentorship, and supervised experience before providing neonatal physical therapy services.

To gain experience in preparation for mentored training in the neonatal intensive care unit (NICU), pediatric therapists will benefit from initially working with NICU graduates in early intervention, hospitals including pediatric intensive care settings, and/or follow-up programs. Participation in examination and intervention with older, less fragile infants is advised prior to working with young neonates. In addition, experience with critically ill adults or children is beneficial as many neonatal therapists work with infants on ventilators or other respiratory equipment with multiple lines and leads.

Competency-based experience with mentoring is the preferred method of obtaining expertise in neonatal physical therapy. Neonatal physical therapy mentoring should be conducted by teams, which may include neonatal nurses, neonatologists, and neonatal therapists (physical, occupational, or speech) to cover the core principles guiding care for this vulnerable population. In addition, specific mentoring in physical therapy roles and competencies is essential.

THE PHYSICAL THERAPIST'S ROLES AND RESPONSIBILITIES IN THE NICU

- Infant Level
 - Screen neonates to determine needs for physical therapy referral
 - Examine neonates and interpret findings including making recommendations to the medical team on using evidence-based guidelines, identifying infants as high risk for motor impairments warranting ongoing intervention and referral at discharge, and advising further neurological / medical examinations
 - Develop and implement a plan to prevent neurobehavioral disorganization and potential multiple system complications of prematurity
 - Design, implement, and evaluate the efficacy of intervention plans in collaboration with the family and medical team
 - Incorporate evidence-based literature into neonatal practice
- Family Level
 - Evaluate dyadic interaction between parents and infants to determine the need for resources or intervention which could enhance the infants' outcomes
 - Develop and implement discharge plans including needs for equipment, therapy services, and education in collaboration with the family, medical team, and community resources
- NICU Level
 - Consult with providers of specialized equipment or services to determine the need for these services within a specific NICU environment
 - Communicate, demonstrate, and evaluate neonatal physical therapy care procedures with NICU professionals and other caregivers
 - Develop a physical therapy risk management plan
 - Evaluate the effectiveness of a neonatal physical therapy program
 - Participate in staff and family education on the importance of early identification of developmental and musculoskeletal conditions, early intervention, and community resources
 - Participate in staff and family education on the importance of early identification of developmental disability, early intervention, and community resources
- Community Level
 - Consult and collaborate with health care professionals, families, policy makers, and community organizations to advocate for services to support the development of neonates
 - Collaborate with NICU follow-up programs to ensure early NICU risks are used to determine the need for referral to NICU follow-up
 - Provide education to community groups on the use of assessment tools designed for young infants to enhance access to services for infants whose delays may not be detected with tools designed for older infants

KNOWLEDGE AND SKILLS REQUIRED

Knowledge

- Theoretical principles that guide physical therapy practice in the NICU:
 - Family-centered care
 - Synactive theory of development
 - Dynamic systems theory
 - Theory of neuronal group selection
 - International Classification of Functioning, Disability and Health (ICF)

- Typical development of:
 - Central nervous system and musculoskeletal system
 - Behavioral state regulation and behavioral stress cues
 - Motor and sensory skills
 - Social development and infant/parent interaction
 - Early cognitive development and learning opportunities in infancy
- Developmental outcomes of neonates at developmental risk:
 - Infants born preterm
 - Infants born at low birth weight
 - Infants with genetic conditions
 - Infants with cardiovascular and pulmonary conditions
 - Infants with neonatal brain injury
- Evidence for neonatal assessments
 - Reliability and validity in standardized assessments that bridge the NICU to early intervention and NICU follow-up settings
 - International guidelines for the early detection of cerebral palsy
- Evidence for neonatal interventions
 - Sensory
 - Motor
 - Social and behavioral
 - Parent and infant interaction
 - Oral motor and feeding
- Effective strategies for communication:
 - Teaming
 - Consulting with other professionals
 - Providing family education in a culturally sensitive manner
 - Facilitating professional identity and advocacy

Skills

- Examination procedures for neonates:
 - Determining physiologic and behavioral readiness for neonatal physical therapy examination
 - Monitoring autonomic, behavioral, and motor stability throughout an examination
 - Conducting observational examination techniques
 - Administering minimal contact examination techniques
 - Determining when standardized assessment is safe to perform and clinically warranted
 - Providing standardized assessments developed for neonates born preterm or at term gestation
 - Evaluating the integrity of the neurological and musculoskeletal systems
 - Determining the need for and completing oral motor examination and feeding readiness assessments
- Safe and effective interventions:
 - Positioning to support alignment and encourage self-directed movement
 - Handling to support movement opportunities in multiple positions with inclusion into daily activities
 - Splinting to provide support for alignment of skeletal deformities
 - Individualizing sensory motor interventions to provide positive sensory input
 - Providing oral motor and feeding intervention
 - Developing and implementing parent/caregiver education programs for adult learners with diverse backgrounds
 - Developing and implementing environmental modification to support behavioral state regulation and behavioral engagement/interaction

- Educating and consulting:
 - Collaborating as part of an interdisciplinary development team
 - Communicating with physicians, occupational therapists, speech / language pathologists, respiratory therapists, social workers, and other professionals
 - Planning for discharge, including community resources, car seats and other equipment, or therapy needs
 - Communicating with family members from diverse backgrounds

KEY POINTS

- Neonatal Physical Therapy is a subspecialty area within Pediatric Physical Therapy in which precepted clinical competency training is essential for safe, ethical, and effective examination and intervention for the highly vulnerable, easily destabilized infant population requiring intensive care services.
- Guided observational experiences in NICU settings may be useful for student physical therapists as a foundation for precepted, competency-based training after graduation.
- Physical therapist assistants (PTA) are excluded from the advanced practice NICU setting. Each patient contact involves examination, reassessment, and modification based on continuous multisystem examination and monitoring during NICU physical therapy procedures, all outside the scope of the PTA.
- Examination tests and measures and intervention procedures learned and applied for other pediatric populations and settings, are not appropriate for preterm infants in intensive care units.
- Collaboration on an advanced practice level is expected with the multidisciplinary NICU team on caregiving decisions and unit educational, administrative, and research projects.
- Educational competency is expected to participate in teaching and consulting on family, interdisciplinary NICU team, and community levels

REFERENCES

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2. Sweeney JK, Heriza CB, Blanchard Y, Dusing SC. Neonatal physical therapy; part II: practice frameworks and evidence-based practice guidelines. *Pediatr Phys Ther.* 2010;22(1):2-16.
3. Rapport MJ, Sweeney JK, Dannemiller L, Heriza CB. Student experiences in the neonatal intensive care unit: addendum to neonatal physical therapy competencies and clinical training models. *Pediatr Phys Ther.* 2010;22(4):439-440.

ADDITIONAL RESOURCES

- American Board of Physical Therapy Residency and Fellowship Education. Physical Therapy Neonatology Fellowship Programs Directory (<https://accreditation.abptrfe.org/#/directory>)
- Khurana S, Kane AE, Brown SE, Tarver T, Dusing SC. Effect of neonatal therapy on the motor, cognitive, and behavioral development of infants born preterm: a systematic review. *Dev Med Child Neurol.* 2020;62(6):684-692. doi: 10.1111/dmcn.14485.
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- Novak I, Morgan C, Adde L, Blackman J, Boyd RN, Brunstrom-Hernandez J, et al. Early, accurate diagnosis and early intervention in cerebral palsy: advances in diagnosis and treatment. *JAMA Pediatr.* 2017;171(9):897-907. doi: 10.1001/jamapediatrics.2017.1689. Erratum in: *JAMA Pediatr.* 2017;171(9):919.

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