

# PTAT-2310: PEDIATRIC PHYSICAL THERAPY

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## Cuyahoga Community College

**Viewing: PTAT-2310 : Pediatric Physical Therapy**

**Board of Trustees:**

December 2023

**Academic Term:**

Fall 2024

**Subject Code**

PTAT - Physical Therapist Assist

**Course Number:**

2310

**Title:**

Pediatric Physical Therapy

**Catalog Description:**

Examine the special considerations for the physical therapy approaches and procedures regarding infants and children. Identify typical fetal and postnatal growth and development. Examination of wide range of disease and disabilities affecting infants and children, and physical therapy skills necessary for interaction and treatment of this patient population.

**Credit Hour(s):**

2

**Lecture Hour(s):**

2

**Lab Hour(s):**

0

**Other Hour(s):**

0

## Requisites

**Prerequisite and Corequisite**

BIO-2341 Anatomy and Physiology II, PTAT-1401 Clinical Pathophysiology, PTAT-1411 Physical Therapy Procedures, and PTAT-1420 Therapeutic Exercise, and departmental approval.

## Outcomes

**Course Outcome(s):**

A. Design and administer age-appropriate treatment activities based on the physical therapy evaluation and plan of care that fosters integration of the child into the home, school or community setting.

**Essential Learning Outcome Mapping:**

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

**Objective(s):**

1. Distinguish some of the unique qualifications that the pediatric therapist must possess to evaluate and interact with this patient population.
2. Discuss the role of physical therapy in the developmental intervention, handling, positioning, and parent education for the neonate and high-risk infant.
3. Summarize how typical development occurs in the infant from birth to one year old and how the absence or delay of these developments impacts the child.
4. Utilize the developmental sequence to design developmental age appropriate skills and interventions in physical therapy treatment.

5. Discuss motor skill development during later childhood and adolescence; identify developmental behaviors and skills that should alert the health care provider and parents of a potential problem.
6. Utilize correctly the terms for standardized assessments such as reliability, validity, sensitivity, and specificity; contrast criterion-referenced and norm-referenced tests.
7. Describe the theories of motor development and some of the contemporary issues in motor development.
8. Compare and contrast the provision of physical therapy services based on different settings including the home, school, community child care center, clinic, and hospital.
9. Discuss typical fetal development and identify key stages in fetal development.
10. Discuss the involvement of family/parents in setting goals and intervention for the child.
11. Indicate the fundamental capabilities the normal infant possesses at birth and describe the Apgar test.
12. Differentiate the terms "neonate" and "premature infant"; discuss neonatal development and assessment.
13. Discuss the environment of the neonatal intensive care unit; identify behavioral indicators of stress and stability in the neonate.

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**Course Outcome(s):**

B. Utilize adequate written and oral communication skills for gathering information, fostering relationships, providing documentation of services and working collaboratively with other team members.

**Objective(s):**

1. Identify specific areas in which the evaluation of the pediatric patient differs from the adult population.
2. Discuss the individualized education plan (IEP) and pre-school screening as required by law in the school setting.
3. Advocate early intervention and family centered therapy in the treatment of children and consider the relationship between the therapist, patient, and patient's family in the treatment of the pediatric patient.
4. Demonstrate professional and ethical behaviors in all course activities.
5. Describe the transdisciplinary team approach to evaluation and goal setting for the pediatric patient.

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**Course Outcome(s):**

C. Utilize family support principles including family advocacy, family rights, culture, attitudes and perspectives to adapt activities and provide information and physical therapy services.

**Objective(s):**

1. Explain the need for sensitivity and understanding of the special needs of the pediatric patient including the impact of disease or injury on the parent, siblings, and other health care providers.
2. Plan and design interaction and treatment with consideration of ethnic, racial, cultural, socioeconomic, spiritual, and lifestyle differences that impact the pediatric patient and his/her family.
3. Assemble an inventory of professional and community resources that provide information and/or support to children with special health needs and their families.
4. Advocate early intervention and the Individual Family Service Plan (IFSP) in the treatment of infants and toddlers and consider the relationship between the therapist, patient, and patient's family in the treatment of the pediatric patient.

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**Course Outcome(s):**

D. Design and apply appropriate handling and positioning techniques for a child with disabilities to facilitate motor skills, socialization, functional skills and participation in school and community activities.

**Objective(s):**

1. Compare and contrast reflex, pathological reflex, postural reflex, and primitive reflex.
2. Compare, contrast, and describe the positioning, lifting, and carrying techniques utilized for various levels of muscle tone found in the pediatric cerebral palsy patient.
3. Describe various primitive reflexes and the mechanisms for how the reflex is elicited.
4. Describe the potential impact of the primitive reflexes on the infant when integration is delayed or absent.

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**Course Outcome(s):**

E. Utilize the ethical standards, laws, treatment approaches, and family-centered principles to the provision of physical therapy services to children with disabilities across various treatment settings.

**Objective(s):**

1. Describe the impact of environmental deprivation on the normal infant and child as well as on the child with a disorder or disease.
2. Discuss legislation as it pertains to health, education, and physical therapy services for children and their families.
3. Explain the need for sensitivity and understanding of the special needs of the pediatric patient including the impact of disease or injury on the parent, siblings, and other health care providers.
4. Plan and design interaction and treatment with consideration of ethnic, racial, cultural, socioeconomic, spiritual, and lifestyle differences that impact the pediatric patient and his/her family.
5. Identify signs and symptoms of child abuse and discuss the role and responsibility of the health care worker in cases of suspected or reported abuse.
6. Adapt interventions and interaction for the terminally-ill child and research community support to assist family.

**Course Outcome(s):**

F. Utilize creativity in assessing available resources including space, equipment, toys, animals, peers and assistive technology used in therapy activities.

**Objective(s):**

1. Identify the etiology, pathology, genetic factors, risk factors, clinical features and physical therapy approaches and interventions for the pediatric patient with cerebral palsy.
2. Discuss the role of adaptive equipment in the treatment of the child with a neuromuscular disorder and identify some frequently utilized equipment for positioning, activities of daily living (ADL), communication, and mobility.
3. Identify the essential features of the orthotics, braces, splinting, and casting utilized to address various orthopedic problems.
4. Discuss the use of hippotherapy and riding therapy in the treatment in children with abnormal muscle tone.
5. Instruct patient and family members in the care and monitoring of various orthotics.

**Course Outcome(s):**

G. Design and apply various physical therapy interventions for the child with functional limitations created by a problem in any of the body systems.

**Objective(s):**

1. Identify the etiology, pathology, genetic factors, risk factors, clinical features and physical therapy approaches and interventions for the pediatric patient with cerebral palsy.
2. Describe the characteristics of the cerebral palsy patient with various levels of muscle tone.
3. Discuss the etiology, pathology, genetic components, and clinical features of muscular dystrophy specifically Duchenne's muscular dystrophy.
4. Describe the physical therapy approach, goals and intervention as the patient with Duchenne's muscular dystrophy progresses through the phases of the disease.
5. Describe and plan physical therapy intervention for the child with spina bifida based on type and level of involvement.
6. Explain the incidence, etiology, prognosis, and physical therapy goals and intervention for various pediatric orthopedic disorders.
7. Compare and contrast HIV and AIDS in the pediatric versus adult population. Identify the causes of pediatric HIV.
8. Discuss the role of physical therapy in pediatric pulmonary disorders including asthma, cystic fibrosis, and hyaline membrane disease.
9. Identify common cardiovascular structural defects and possible physical therapy interventions.
10. Discuss burn depth and size estimation and the role of physical therapy toward functional outcomes.
11. Identify the incidence, etiology, clinical features, and prognosis for various pulmonary disorders.
12. Compare and contrast physical therapy goals and interventions for various muscle tone classifications of involvement.
13. Discuss the theory of neurodevelopmental treatment and the terminology associated with this treatment approach.

**Course Outcome(s):**

H. Design strategies for addressing children with sensory, processing and cognitive disorders and develop a behavior support plan.

**Objective(s):**

1. Discuss the potential causes of mental retardation/developmental disabilities and the associated abnormalities that frequently accompany this diagnosis.
2. Describe the physical therapy approach, goals, and interventions for pediatric patients with developmental disabilities including autism spectrum disorders (ASD), attention deficit disorder (ADD), and attention deficit hyperactivity disorder (ADHD).

3. Discuss the incidence, etiology, clinical features, and prognosis for the infant with Fetal Alcohol Syndrome.
  4. Describe various techniques for sensory integrative therapy for children with sensory processing disorders.
  5. Identify the signs and symptoms of the infant with in utero substance exposure.
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**Methods of Evaluation:**

1. Tests, midterm and final examination
2. Announced and unannounced quizzes
3. Professional and ethical conduct rubric
4. Supplemental web site assignments/discussion board

**Course Content Outline:**

1. Examination and evaluation of the pediatric patient
  - a. Competencies for pediatric therapist
  - b. Methods of assessment, definitions
    - i. Non-referred
    - ii. Criteria referred tests
    - iii. Validity
    - iv. Reliability
  - c. Models of team interaction
  - d. Service delivery models
  - e. Child abuse and neglect
  - f. Federal and state legislation
  - g. Family centered care
2. Child development
  - a. Theories
  - b. Fetal development
  - c. Typical infant and child development
  - d. Reflexes
  - e. Genetics
  - f. Treatment theories
3. Prematurity
  - a. Risk factors
  - b. Characteristics of high-risk neonate
  - c. Neonatal intensive care
  - d. Common diagnoses and intervention
  - e. Signs of stress and coping
  - f. Early intervention
4. Neurological and muscular disorders
  - a. Cerebral palsy
  - b. Spina bifida
  - c. Traumatic brain injury
  - d. Muscular dystrophy/atrophy
  - e. Physical therapy interventions
5. Musculoskeletal disorders and interventions
  - a. Scoliosis
  - b. Arthrogryposis
  - c. Osteogenesis imperfecta
  - d. Developmental hip dysplasia
  - e. Leg length discrepancy/LCP
  - f. Orthotics, splinting and casting
6. Cardiovascular and pulmonary disorders and interventions
  - a. Asthma
  - b. Cystic fibrosis
  - c. Bronchopulmonary dysplasia/infant respiratory distress
  - d. Cardiomyopathy
  - e. Left to right and right to left shunts

7. Integumentary system disorders and interventions
  - a. Burns
  - b. Rule of Nines and burn classification
  - c. Treatment considerations for this population
  - d. Positioning guidelines
8. Service delivery settings
  - a. Neonatal intensive care
  - b. Acute care hospital
  - c. School system
  - d. Rehabilitation settings
  - e. Home settings
  - f. Sports settings
9. Developmental disabilities
  - a. Classification
  - b. Down's syndrome
  - c. Fetal alcohol syndrome
  - d. Autism spectrum disorders
  - e. ADD/ADHD
  - f. Sensory integration therapy
10. Assistive Technology
  - a. Positioning
  - b. Mobility
  - c. Communication
11. Serving the needs of children and families
  - a. Cultural diversity
  - b. Beliefs regarding medical treatment
  - c. Behavioral management
  - d. Advocacy and public policy
  - e. Family centered interventions and care
  - f. Death and grieving

## Resources

Palisano, R., Orlin, M., Schreiber, J. *Campbell's Physical Therapy for Children*. 6th. St. Louis: Elsevier, 2023.

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Effgen, S. K. *Meeting the Physical Therapy Needs of Children*. 3. Philadelphia: F.A. Davis Co., 2021.

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O'Sullivan, S., Schmitz, T., Fulk, G. *Physical Rehabilitation, Assessment and Treatment*. 7th. Philadelphia: F.A. Davis, 2019.

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O'Shea, R. K. *Pediatrics for the Physical Therapist Assistant*. St. Louis: Saunders, 2009.

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Bertoti, Delores B. *Functional Neurorehabilitation Through the Life Span*. Philadelphia: F.A. Davis, 2004.

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Dole, R. and Chafetz, R. *Peds Rehab Notes*. Philadelphia: F.A. Davis, 2010.

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Dreeben, Olga. *Physical Therapy Clinical Handbook for PTAs*. 2nd ed. Boston: Jones and Bartlett Publishers, 2013.

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Lescher, P. *Pathology for the Physical Therapist Assistant*. Philadelphia: F. A. Davis, 2011.

**Resources Other**

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