Neurodevelopmental Disabilities

A Comprehensive Residency Training Program Incorporating Pediatrics, Child Neurology, and Allied Fields

(Genetics, Physiatry, Psychiatry)
The study of brain development leads to greater understanding and remediation of neurodevelopmental challenges.

The Neurodevelopmental Disabilities (NDD) Residency Program is a joint effort of the American Board of Pediatrics and the American Board of Psychiatry and Neurology to provide an interdisciplinary and comprehensive program for training physicians in Neurodevelopmental Disabilities.

In 1999, the American Board of Medical Specialties recognized the subspecialty of Neurodevelopmental Disabilities. The first subspecialty examinations took place in 2001. This subspecialty provides specialized training for physicians interested in academic careers evaluating and managing children with neurodevelopmental disorders. It also provides opportunities for developing research that increases our knowledge of these disorders and how to treat them.
The NDD residency involves a rigorous six-year residency program that combines pediatric and neurological training in the relevant basic sciences with supervised clinical training in diagnosing and caring for children with neurodevelopmental disorders. After completing the residency, graduates are eligible for certification in pediatrics, neurology with special competence in child neurology, and neurodevelopmental disabilities.

This residency program marks a milestone in the development of advanced training programs for management of children with developmental disabilities. As of Spring 2011, nine U.S. medical schools have been accredited to offer this exciting new program. Applications for this residency are being accepted now.

"We wanted to train our own students better than we were trained."
—Dr. Bruce Shapiro, Kennedy Krieger Institute

A neurodevelopmental disabilities residency expands on the elements of pediatrics and child neurology that most closely focus on diagnosing and treating disorders of the developing nervous system. What we have learned about the brain in the past two decades—particularly on the genetic level—is revolutionizing the evaluation and management of children with developmental disorders such as autism spectrum disorders, cerebral palsy, intellectual disability, and learning and language disorders. The specialty links exciting new developments in molecular genetics, neuroimaging, and electrophysiology with traditional pediatric and neurological assessments of the development of motor skills, sensory awareness, cognition, language, and socialization in children.
The four-year curriculum follows successful completion of two core years of pediatrics in an ACGME-approved training program.

a. One year of adult neurology: The purpose of this experience is to develop knowledge of the cardinal manifestations of neurological disease. Trainees will learn anatomic localization within the nervous system and how to apply analytic and synthetic approaches to diagnosis and management of neurologic disorders. This component will include care for adults with chronic neurodevelopmental disabilities.

b. Eighteen months of clinical child neurology and neurodevelopmental disabilities: The purpose of this rotation is to help residents develop neurodiagnostic skills applicable to children and approaches for managing brain disorders of childhood. This component includes clinical training in neurodevelopmental disabilities as well as training in interdisciplinary team approaches to treating children with these disorders.

c. Eighteen months of clinical and basic science: The purpose of this training component is to develop a broad background in clinical and basic neurosciences. Trainees also cultivate the skills necessary for academic viability: research, teaching, and administration. This component includes at least one month of experience in each of the following: child and adolescent psychiatry, neurosurgery, and neurorehabilitation. Residents also gain significant clinical experience with behavioral neurology, neurogenetics and metabolism, neuromuscular disorders, neuro-oncology, and neuro-ophthalmology. Research training and experiences are included during this component.
Residents learn the fundamentals of specific diagnostic and management strategies of the major neurodevelopmental disabilities including, but not limited to, cognitive disorders (intellectual disability, learning disabilities, progressive encephalopathies), communication disorders, neurobehavioral disorders (autism spectrum disorders, attention deficit/hyperactivity disorder), motor disabilities (cerebral palsy, spina bifida, neuromuscular and other neuromotor disorders, movement and tic disorders), special sensory disorders (visual and auditory), and multiple disabilities.
b. Residents learn the appropriate instruments for neuropsychological assessment and how to apply developmental measurements and scales.

c. Residents become familiar with anticipatory guidance and counseling of families whose children have developmental disabilities.

d. Residents learn strategies for pharmacological and non-pharmacological management of self-injurious and other troublesome behaviors.

e. Residents learn the skills to manage abnormal tone and movement disorders. This will include some training in the technical skills needed to manage such patients.

f. Residents learn how to secure, organize, and manage patient resources and treatment.

4. Bioethics, economics and end-of-life content:
Residents receive instruction in the bioethics and economics of medicine, particularly as they apply to individuals with chronic disabling conditions. Residents also receive instruction in appropriate and compassionate methods of providing end-of-life palliative care.

5. Conferences:
Residents regularly attend conferences in the disciplines of child neurology, neurorehabilitation, neuropsychology, and clinical pharmacology. Residents attend and participate in periodic seminars, journal clubs, lectures, didactic courses, and meetings of local and national neurological and neurodevelopmental societies. Residents are periodically responsible for the design and presentation of clinical conferences.
Training in neurodevelopmental disabilities must be preceded by the successful completion of at least 24 months of pediatric residency training in a program accredited by the ACGME. The program director will review and approve the acceptability of these initial years of training. This training must satisfy the requirements for board certification in pediatrics by the American Board of Pediatrics or its equivalent.
Our Mission
To study human brain development and its clinical manifestations in the most comprehensive and knowledgeable way. To give back to our patients the most compassionate and helpful response.

The Nine Accredited University Training Programs

For more information or to request an application, please contact the training program directors.

Baylor College of Medicine/Texas Children’s Hospital:
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Children’s Hospital of Pittsburgh:
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George Washington University/Children’s National Medical Center:
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University of Cincinnati/Cincinnati Children’s Hospital Medical Center:
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