

CLINICAL REPORT

Guidance for the Clinician in Rendering Pediatric Care

Linda J. Michaud, MD, and the Committee on Children With Disabilities

Prescribing Therapy Services for Children With Motor Disabilities

ABSTRACT. Pediatricians often are called on to prescribe physical, occupational, and speech-language therapy services for children with motor disabilities. This report defines the context in which rehabilitation therapies should be prescribed, emphasizing the evaluation and enhancement of the child's function and abilities and participation in age-appropriate life roles. The report encourages pediatricians to work with teams including the parents, child, teachers, therapists, and other physicians to ensure that their patients receive appropriate therapy services. *Pediatrics* 2004;113:1836–1838; *children with motor disabilities, physical therapy, occupational therapy, speech-language therapy.*

BACKGROUND

Pediatricians commonly are asked to evaluate children with motor disabilities and to write prescriptions for physical, occupational, and speech-language therapy services. Although many states require a physician's prescription for such services, many physicians have limited formal education about these therapeutic interventions.¹

The spectrum of motor impairments affecting function in children and adolescents is wide and comprises many congenital and acquired conditions, primarily involving the neurologic and musculoskeletal systems, including but not limited to cerebral palsy, traumatic brain injury, myelomeningocele, spinal cord injury, neuromuscular disease, juvenile rheumatoid arthritis, arthrogryposis, and limb deficiencies. These conditions are associated with motor impairments including muscle weakness, abnormal muscle tone, decreased joint range of motion, and decreased balance and coordination. There are variations in severity within each of these conditions. Many children with impairments attributable to these conditions will have some degree of disability that may limit their participation in age-appropriate activities at home, in school, and in the community and should benefit from physical, occupational, and/or speech-language therapy services.

The pediatrician needs to understand the role of physical, occupational, and speech-language therapists in the overall treatment of children with motor disabilities and the therapeutic interventions that may improve function and participation.^{2,3} If the

child has motor problems severe enough to interfere with mobility, self-care, or communication, therapists may provide a program to help the child ameliorate, compensate for, or adapt to the impairment or disability. Physical, occupational, and speech-language therapists, working with the family, child, physician, and teacher, promote a positive functional adaptation to impairment or disability in the context of the child's developmental progress.

Physical therapists focus on gross motor skills and functional mobility, including positioning; sitting; transitional movement such as sitting to standing; walking with or without assistive devices (eg, walkers, crutches) and orthoses (braces) or prostheses (artificial limbs); wheelchair propulsion; transfers between the wheelchair and other surfaces such as a desk chair, toilet, or bath; negotiation of stairs, ramps, curbs, and elevators; and problem-solving skills for accessibility of public buildings. Physical therapists often have responsibilities for procuring adaptive equipment related to ambulation, positioning, and mobility.^{4–6}

Occupational therapists focus on fine motor, visual-motor, and sensory processing skills needed for basic activities of daily living such as eating, dressing, grooming, toileting, bathing, and written communication (handwriting, keyboard skills).⁷ Occupational therapy services may include training in school-related skills and strategies to help children compensate for specific deficits.⁷

Speech-language pathologists address speech, language, cognitive-communication, and swallowing skills in children with disabilities.⁸ Speech therapy is the therapy most commonly prescribed by pediatricians.

The services that can be provided by physical and occupational therapists and speech-language pathologists overlap. For example, a physical or occupational therapist can address motor delay or dysfunction in the very young child. Depending on the community, occupational therapists or speech-language pathologists may address deficits in oral motor skills associated with feeding dysfunction related to motor disability. Occupational therapists and/or speech-language pathologists provide expert consultation related to adaptive equipment, environmental modifications, and assistive technology devices such as environmental control units, augmentative communication systems, adapted computers, and adaptive toys.⁶

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

PEDIATRICS (ISSN 0031 4005). Copyright © 2004 by the American Academy of Pediatrics.

EVALUATING THE EVIDENCE

The therapeutic methods, frequency and duration of service, setting in which the service is delivered, and service delivery system vary.⁹ Evaluating the efficacy and effectiveness of therapy for motor disability is difficult, because treatment is not a standardized, readily quantifiable process that can be prescribed in discrete, consistent units. Individualized therapy programs vary in many parameters and incorporate subjective as well as objective elements. Clear documentation of efficacy related to the variable parameters of therapy continues to be elusive. This problem may in part reflect difficult methodologic issues including the measurement of treatment-related change on a background of developmental maturation, the establishment of appropriate outcome criteria, heterogeneity of the populations involved, and the complex nature of the interventions.^{10,11}

A recent review of the evidence to support the effectiveness of neurodevelopmental treatment for children with cerebral palsy indicates that this popular method of intervention does not confer an advantage over the alternatives with which it has been compared in altering abnormal motor responses, slowing or preventing contractures, or facilitating more normal motor development or functional motor activities, nor does more intensive neurodevelopmental treatment result in greater benefit.¹² Physical therapy alone was found in 1 well-designed study to be less effective in improving motor development after 1 year than the therapy incorporating developmentally appropriate play and learning skills for children younger than 3 years with motor impairment.¹³

Improvement in motor function is more likely to occur when the goals of therapy are specific and measurable¹⁴ and established in partnership with the child's parents and other caregivers. Intensive amounts of physical therapy may confer no advantage over routine amounts of therapy,¹⁵ and long-term therapy may confer no advantage over short-term therapy. Provision of a home exercise program, with instruction of family members and caregivers in therapeutic exercises and age-appropriate activities to meet the child's goals, is generally indicated. This program can include recommendation of participation in sports to increase endurance, strength, and self-esteem in a natural setting with peers.¹⁶ Aquatic therapy, hippotherapy (horseback-riding therapy), and participation in karate, gymnastics, and dance classes in integrated or special classes also can be considered to meet the child's therapeutic goals. Parent and caregiver education by all therapists is critical in effective partnerships with families for implementation of therapy programs.

Some programs such as patterning have little effect on functional skills and are inappropriate for children with motor disabilities.¹⁷ Scientific legitimacy has also not been established for sensory integration intervention for children with motor disabilities.¹⁸

Prescribing therapy services for children with mo-

tor disabilities clearly cannot be based entirely on sound scientific evidence. As the knowledge base is expanded related to the effectiveness of therapy interventions, evidence-based practice described as using the best available evidence, along with clinical judgment, and taking into consideration the priorities and values of the individual patient and family in a shared decision-making process, as outlined by the Institute of Medicine, is advised.¹⁹

SERVICE DELIVERY

Therapies for a child with motor impairment are required to be provided by the school if the disability interferes with the educational process.²⁰ Recently, managed health care has made it more difficult for children with special needs to receive therapy services outside of school, with insurance companies denying services for children who attend school, maintaining that therapy is mandated at school and is partially funded with education and third-party monies.⁹ Therapy services at school for students who are eligible for Medicaid and whose disabilities are medically based can be reimbursed by Medicaid if the disability has an adverse effect on the child's ability to benefit from the educational program.⁹ Services also may be provided in environments other than the hospital or school, as appropriate for the child's individual circumstances; such other environments include child care, home, or job settings.

THE PEDIATRICIAN'S ROLE

The pediatrician's responsibility in writing a prescription for therapy includes providing an accurate diagnosis when possible. When the exact cause of the disability is not apparent, the physician must provide an accurate description of the medical condition and note whether the child has a transient, static, or progressive impairment. In addition to the primary motor disorder, all potential associated problems such as learning disabilities, mental retardation, sensory impairment, speech disorders, emotional difficulties, and seizure disorders must be identified, and a care plan must be recommended. There are some children with special needs whose medical conditions may be affected adversely by movement or other specific therapeutic activities; therapists and caregivers should be advised to take appropriate precautions with these children.

The physician's prescription for therapy should contain, in addition to the child's diagnosis: age; precautions; type, frequency, and duration of therapy; and designated goals. Goals for physical, occupational, and speech-language therapy do not depend solely on the diagnosis or age of the child, and they are most appropriate when they address the functional capabilities of the individual child and are relevant to the child's age-appropriate life roles (school, play, work).⁹ The pediatrician should work with the family, child, therapists, school personnel, developmental diagnostic or rehabilitation team, and other physicians to establish realistic functional goals.²⁰ The pediatrician can assist families in identifying the short- and long-term goals of treatment, establishing realistic expectations of therapy out-

comes, and understanding that therapy will usually help the child adapt to the condition but not change the underlying neuromuscular problem. Pediatricians should be encouraged to seek and use expert consultation as in any other area of medicine. Helpful resources may include local and regional diagnostic and intervention teams, early intervention and developmental evaluation programs, developmental pediatricians, pediatric physiatrists, pediatric neurologists, pediatric orthopedists, and orthotists.

Regular communication among parents and other caregivers, therapists, educators, and prescribing physicians should be ongoing, with periodic reevaluations to assess the achievement of identified goals, to direct therapy toward new objectives, and to determine when therapy is no longer warranted.²¹ Changes in the child's status (eg, surgical intervention, school-to-work transition warranting assistive technology intervention) may indicate resumption of specific short-term, goal-directed services.

SUMMARY

Successful therapy programs are individually tailored to meet the child's functional needs and should be comprehensive, coordinated, and integrated with educational and medical treatment plans, with consideration of the needs of parents and siblings. This can be facilitated by primary care pediatricians and tertiary care centers working cooperatively to provide care coordination in the context of a medical home.^{22,23}

COMMITTEE ON CHILDREN WITH DISABILITIES, 2003–2004

Adrian D. Sandler, MD, Chairperson
J. Daniel Cartwright, MD
John C. Duby, MD
Chris Plauch Johnson, MD, MEd
Lawrence C. Kaplan, MD
Eric B. Levey, MD
Nancy A. Murphy, MD
Ann Henderson Tilton, MD

PAST COMMITTEE MEMBERS

W. Carl Cooley, MD
Theodore A. Kastner, MD
Marian E. Kummer, MD

LIAISONS

Bev Crider
Family Voices
Merle McPherson, MD
Maternal and Child Health Bureau
Linda J. Michaud, MD
American Academy of Physical Medicine and Rehabilitation
Marshalyn Yeargin-Allsopp, MD
Centers for Disease Control and Prevention

STAFF

Stephanie Mucha, MPH

REFERENCES

1. Sneed RC, May WL, Stencel CS. Training of pediatricians in care of physical disabilities in children with special health needs: results of a two-state survey of practicing pediatricians and national resident training programs. *Pediatrics*. 2000;105:554–561
2. Consensus statements. *Pediatr Phys Ther*. 1990;2:175–176
3. Piper MC. Efficacy of physical therapy: rate of motor development in children with cerebral palsy. *Pediatr Phys Ther*. 1990;2:126–130
4. Kurtz LA. Rehabilitation: physical therapy and occupational therapy. In: Batshaw ML, ed. *Children With Disabilities*. 5th ed. Baltimore, MD: Paul H. Brookes Publishing; 2002:647–657
5. Carlson SJ, Ramsey C. Assistive technology. In: Campbell SK, Vander Linden DW, Palisano RJ, eds. *Physical Therapy for Children*. 2nd ed. Philadelphia, PA: WB Saunders; 2000:671–708
6. Jump J, Bouwkamp M, Morress C. Assistive technology. In: Rudolph CD, Rudolph AM, Hostetter MK, Lister G, Siegel NJ, eds. *Rudolph's Pediatrics*. 21st ed. New York, NY: McGraw-Hill; 2003:545–547
7. Kurtz LA. Physical therapy and occupational therapy. In: Rudolph CD, Rudolph AM, Hostetter MK, Lister G, Siegel NJ, eds. *Rudolph's Pediatrics*. 21st ed. New York, NY: McGraw-Hill; 2003:544–545
8. Kummer AW. Speech pathology for the child with disability. In: Rudolph CD, Rudolph AM, Hostetter MK, Lister G, Siegel NJ, eds. *Rudolph's Pediatrics*. 21st ed. New York, NY: McGraw-Hill; 2003:545
9. O'Brien MA, Huffman NP. Impact of managed care in the schools. *Lang Speech Hear Serv Sch*. 1998;29:263–269
10. Tirosh E, Rabino S. Physiotherapy for children with cerebral palsy. Evidence for its efficacy. *Am J Dis Child*. 1989;143:552–555
11. Ottenbacher KJ. Efficacy of physical therapy: rate of motor development in children with cerebral palsy. *Pediatr Phys Ther*. 1990;2:131–134
12. Butler C, Darrah J. Effects of neurodevelopmental treatment (NDT) for cerebral palsy: an AACPDM evidence report. *Dev Med Child Neurol*. 2001;43:778–790
13. Palmer FB, Shapiro BK, Wachtel RC, et al. The effects of physical therapy on cerebral palsy: a controlled trial of infants with spastic diplegia. *N Engl J Med*. 1988;318:803–808
14. Bower E, McLellan DL, Arney J, Campbell MJ. A randomised controlled trial of different intensities of physiotherapy and different goal-setting procedures in 44 children with cerebral palsy. *Dev Med Child Neurol*. 1996;38:226–237
15. Bower E, Michell D, Burnett M, Campbell MJ, McLellan DL. Randomized controlled trial of physiotherapy in 56 children with cerebral palsy followed for 18 months. *Dev Med Child Neurol*. 2001;43:4–15
16. Johnstone KS, Perrin JCS. Sports for the handicapped child. *Phys Med Rehabil*. 1991;5:331–350
17. American Academy of Pediatrics, Committee on Children With Disabilities. The treatment of neurologically impaired children using patterning. *Pediatrics*. 1999;104:1149–1151
18. Mulligan S. Advances in sensory integration research. In: Bundy AC, Lane SJ, Murray EA, eds. *Sensory Integration: Theory and Practice*. 2nd ed. Philadelphia, PA: FA Davis; 2002:397–411
19. Committee on Quality of Health Care in America, Institute of Medicine. Improving the 21st-century health care system. In: *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001:39–60
20. American Academy of Pediatrics, Committee on Children With Disabilities. The pediatrician's role in development and implementation of an Individual Education Plan (IEP) and/or an Individual Family Service Plan (IFSP). *Pediatrics*. 1999;104:124–127
21. Levine MS, Kliebhan L. Communication between physician and physical and occupational therapists: a neurodevelopmentally based prescription. *Pediatrics*. 1981;68:208–214
22. American Academy of Pediatrics, Committee on Children With Disabilities. Care coordination: integrating health and related systems of care for children with special health care needs. *Pediatrics*. 1999;104:978–981
23. American Academy of Pediatrics, Medical Home Initiatives for Children With Special Needs Project Advisory Committee. The medical home. *Pediatrics*. 2002;110:184–186

All clinical reports from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

Prescribing Therapy Services for Children with Motor Disabilities

Linda J. Michaud and Committee on Children With Disabilities

Pediatrics 2004;113;1836

DOI: 10.1542/peds.113.6.1836

Updated Information & Services

including high resolution figures, can be found at:
<http://pediatrics.aappublications.org/content/113/6/1836>

References

This article cites 16 articles, 6 of which you can access for free at:
<http://pediatrics.aappublications.org/content/113/6/1836.full#ref-list-1>

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):

Current Policy

http://classic.pediatrics.aappublications.org/cgi/collection/current_policy

Council on Children with Disabilities

http://classic.pediatrics.aappublications.org/cgi/collection/council_on_children_with_disabilities

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
<https://shop.aap.org/licensing-permissions/>

Reprints

Information about ordering reprints can be found online:
<http://classic.pediatrics.aappublications.org/content/reprints>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since . Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2004 by the American Academy of Pediatrics. All rights reserved. Print ISSN: .

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Prescribing Therapy Services for Children with Motor Disabilities

Linda J. Michaud and Committee on Children With Disabilities

Pediatrics 2004;113;1836

DOI: 10.1542/peds.113.6.1836

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/113/6/1836>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since . Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2004 by the American Academy of Pediatrics. All rights reserved. Print ISSN:

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

