

Statement—Sensory Integration Evaluation and Intervention in School-Based Occupational Therapy

This document states the position of The American Occupational Therapy Association (AOTA) regarding the application of sensory integration evaluation and intervention approaches by occupational therapy practitioners in public and private school settings.

School-Based Occupational Therapy Services

Occupational therapy practitioners, which include registered occupational therapists (OTRs) and certified occupational therapy assistants (COTAs), provide services to children and adolescents with special needs in a wide variety of settings, including private and public schools. School-based occupational therapy evaluation and intervention provided under the Individuals With Disabilities Education Act of 1990 (IDEA, Public Law 101-476) must be educationally relevant, that is, directed toward enhancing student performance in an education setting (AOTA, 1989; Hanft & Place, 1996). An education team, of which an occupational therapy practitioner is a member, identifies a student's strengths and needs in order to develop educationally relevant goals and objectives for a student's Individualized Education Program (IEP). The team includes the student (if appropriate), parents or guardians, teachers, school representatives, and professional personnel whose related services are needed in order for a student to benefit from the educational program. Based on the identified student needs, the team determines whether related services, such as occupational therapy, are necessary for a student to benefit from the educational program. If so, occupational therapy services are provided through the school district. If deficits are identified that are not considered educationally relevant, the OTR should make appropriate recommendations or referrals, following state regulations and the AOTA Code of Ethics (AOTA, 1994b).

Sensory Integration as a Frame of Reference

The OTR uses a clinical reasoning process to choose a specific frame of reference to guide evaluation and intervention. Sensory integration, one of the many frames of

reference used by occupational therapy practitioners, has been applied with many different populations and in a variety of settings, including public and private schools (Kimball, 1993).

Sensory integration is a neurobiological process that refers to the assimilation, organization, and use of sensory information to allow an individual to interact effectively with the environment in daily activities at home, school, and in other settings (Ayres, 1972). Sensory integration enhances the individual's capacity to perform functional activities in school such as sitting in a chair to read, paying attention, organizing school supplies and a desk to begin a task, holding and using a pencil, and translating verbal instructions into appropriate behaviors.

Sensorimotor development is multifaceted and includes, but is not restricted to, such factors as:

- coping and functioning appropriately within typical multisensory environments, such as the classroom;
- discriminating appropriately the sensory information relevant to understanding and performing perceptual-motor tasks, such as copying from a blackboard or keeping numbers aligned on the page for addition and subtraction;
- creating, planning, and performing appropriate schemes of action; and
- having the body awareness, stamina, and coordination to both sustain and perform activities that require attention, postural control, and fine motor capabilities, such as handwriting and cutting with scissors.

Difficulty with performing perceptual, motor, and cognitive activities in the school environment may be caused by a sensorimotor performance deficit. Sensorimotor deficits primarily involve motor delays (e.g., ineffective hand skills and gross motor skills) and cognitive delays (e.g., difficulty sequencing and perceiving spatial relationships necessary to developing math skills). As a result of these delays, significant psychosocial issues may also emerge that include difficulty with peer relation-



ships and inability to comply with classroom rules. Sensory integration may be one of the frames of reference selected by the OTR to guide evaluation and intervention for deficits in sensorimotor and psychosocial issues.

Evaluation of Educational Functions

The evaluation process is initiated when a significant discrepancy exists between the student's expected and actual performance in the educational setting. Eligibility criteria are determined state by state based on federal code (Assistance to States for the Education of Children with Disabilities, 34 C.F.R. §300.7). The occupational therapy evaluation in the educational setting includes an evaluation of student performance areas (i.e., self-help, work/education, play/leisure skills), performance components (i.e., sensorimotor, cognitive, and psychosocial components), and performance context (i.e., environment as well as temporal aspects) as defined by *Uniform Terminology for Occupational Therapy—Third Edition* (AOTA, 1994c). Sensory integrative functions are part of sensorimotor components and include: sensory awareness, sensory processing, perceptual processing, as well as motor planning and organization of adaptive behavior.

Assessment of sensory integrative functions that affect school performance involves using tools that yield information about how a student processes sensory information, performs motor tasks, and plans and organizes adaptive behavior. Assessments may include interviews or narratives with teachers and parents; observations of the student's performance in the school setting, clinical observations of sensorimotor abilities, such as *A Guide to Testing Clinical Observations in Kindergartners* (Dunn, 1981); screening tools, such as the DeGangi-Berk Test of Sensory Integration (DeGangi & Berk, 1983) or the Sensory Integration Inventory (Reisman & Hanschu, 1992); and standardized assessments, such as the Sensory Integration and Praxis Tests (SIPT) (Ayres, 1989). Specialized training in the administration and interpretation of the SIPT is necessary; however, this is not true for the majority of sensory integrative assessment tools.

Intervention Strategies for Sensory Integrative Deficits

The occupational therapy practitioner may address educationally related needs through a variety of therapeutic activities in a continuum of service delivery. This may be done by providing information and adaptations to support the student's function in school activities or direct service to the student. Intervention activities and the type of service delivery are determined by the OTR based on the student's individual needs. They include, but are not limited to:

- making environmental modifications in the classroom or on the playground.
- consulting in order to modify instructional methodology and aspects of the student's curriculum,
- providing the educational team with alternative strategies and materials to assist them in working with a student,
- training educational team members to implement specific recommendations during the school day, and
- participating in therapeutic activities that may require special equipment and/or a special setting.

In providing services for an individual student, the occupational therapy practitioner chooses which techniques are needed to help a student perform in the classroom. When the evaluation of a student's performance indicates sensorimotor deficits, sensory integrative intervention strategies may be employed. For example, when a student is having difficulty with handwriting, the occupational therapy practitioner provides intervention to improve skilled hand performance. Sensory integrative techniques may be utilized in order to enhance tactile discrimination; diminish tactile sensitivity; increase awareness of the size, weight, dimension, and muscle strength within the hand; improve eye-hand coordination; and improve postural control of the trunk, shoulder, arm, and hand, all of which contribute to skilled tool use for handwriting. Sensory integrative intervention strategies may be used by the occupational therapist with or without other intervention strategies.

Qualifications for Personnel Using Sensory Integration Techniques

OTRs and COTAs must practice in accordance with state regulations and professional guidelines (AOTA, 1994a). Following are categories of occupational therapy personnel as defined by AOTA Policy 1.44 entitled, "Categories of Occupational Therapy Personnel":

- a. Occupational Therapy Personnel: any individual who works in an occupational therapy program/department/unit to ensure the delivery of occupational therapy services to consumers. Occupational therapy personnel may include: OTR, COTA, occupational therapy students, and occupational therapy aides.
- b. Occupational Therapy Practitioner: an individual who is certified by the National Board for Certification in Occupational Therapy (NBCOT) as an occupational therapist (OTR) or occupational therapy assistant (COTA).

- c. Occupational Therapy Student: an individual who is enrolled in an Accreditation Council for Occupational Therapy Education (ACOTE) accredited or ACOTE developing occupational therapy educational program.
- d. Occupational Therapy Aide: an individual assigned by an occupational therapy practitioner to perform delegated, selected, skilled tasks in specific situations under the direction and intense close supervision of an occupational therapy practitioner (AOTA, 1996).

Summary

Based on the educational team recommendations, school-based occupational therapy practitioners provide interventions to students who are eligible for special education services under IDEA and who need occupational therapy to benefit from their education program. The occupational therapist develops an intervention plan based on the student's needs and the therapist's professional knowledge base. When students demonstrate deficits in sensorimotor performance components that contribute to a significant and documented discrepancy in their skills within their educational program, the use of a sensory integrative approach may be one frame of reference for intervention chosen by the occupational therapist. ▲

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