



Therapy in Praxis

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THERAPY IN PRAXIS

The Sensory Integration and Praxis Tests [SIPT]

The Sensory Integration and Praxis Tests [SIPT] help us to understand why some children have difficulty learning or behaving as we expect. The SIPT do not measure intelligence in the usual sense of the word, but they do evaluate some important abilities needed to get along in the world.

Children rely on important basic sensory-perceptual and practical functions in order to develop patterns, skills, and abilities that underlie successful engagement and participation in their everyday occupations. When children experience difficulties that appear to be related to problems with sensory integration, Occupational Therapists have a variety of assessments and strategies from which to draw. One of these, the Sensory Integration and Praxis Tests [SIPT] provides insight into the underlying sensory processing and praxis abilities of children. It helps therapists to identify difficulties such as dyspraxia and plan the most appropriate treatment interventions in the clinic, home and school settings.

The SIPT is considered the 'gold standard' for assessment of sensory integration and praxis. It consists of 17 subtests and typically takes between two and three hours to complete. Although the SIPT does not measure intelligence or academic performance, it offers a standardised method to assess praxis and the various foundational aspects of the tactile, proprioceptive, and vestibular systems that underlie irregularities often seen in learning or behaviour (Ayres, 1989).

The 17 SIPT tests fall, roughly, into four overlapping types: (1) motor-free visual perception, (2) somatosensory, (3) praxis, and (4) sensorimotor.

(1) Motor-free visual perception

These tests evaluate the ability to visually perceive and discriminate form and space without involving motor coordination. The Space Visualization is a puzzle-like test in which the child indicates which of two forms will fit a form board. Although the child is invited to place the form in the hollow of the form board, the motor aspect of the test does not enter into scoring the test. The examiner does keep track of whether the child used the right or left hand in picking up the blocks and, in doing so, whether he or she crossed the body's midline or tended to use each hand on its own side of the body. In the Figure-Ground Perception, the child points to pictures that are hidden among other pictures. The test measures how well a child visually perceives a figure against a confusing background.

(2) Somatosensory

These tests assess tactile, muscle, and joint perception. ("Soma" means "body.") During somatosensory testing the child is encouraged to "feel" rather than "see". A large piece of cardboard held over the area where the arms and hands are working helps the child concentrate on what is felt. Being touched where the child cannot see the touching often makes the child feel uncomfortable even though none of the tactile stimuli really hurt the child. If the child's negative reaction to the testing is strong, the response is referred to as "tactile defensiveness."



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On the Manual Form Perception, the child identifies through the tactile and kinesthetic senses unusual shapes held in the hand. On the Kinesthesia, the conscious sense of joint position and movement is evaluated by the child's attempt to put his or her finger at the same place the therapist had previously put it. Tactile perception is measured with three tests: a) the Finger Identification, in which the child points to his or her finger that the therapist touched; b) the Graphesthesia, in which the child draws with a finger the same simple design the therapist drew on the back of the child's hand; and c) the Localization of Tactile Stimuli, in which the child points to the spot where the therapist had lightly touched the child's arm or hand with a pen. This last test leaves 14 tiny, washable spots on the child's arm and hand.

(3) Praxis

Praxis skill is evaluated six different ways: a) Praxis on Verbal Command assesses the ability to interpret verbally given instructions to assume certain positions and to then assume them. A typical test item might be "Put your hands on top of your head" b) Design Copying evaluates the ability to copy simple designs. c) Constructional Praxis evaluates the child's ability to build with blocks, using structures built by the therapist as models. Both the Design Copying and the Constructional Praxis require visual form and space perception, in addition to praxis abilities. d) Postural Praxis requires the child to imitate the unusual body postures assumed by the therapist. e) Oral Praxis asks the child to imitate movements and positions of the tongue, lips, and jaw. f) Sequencing Praxis asks the child to imitate a series of simple arm and hand positions.

(4) Sensorimotor

Four sensorimotor tests are included in the SIPT because their tasks require sensory integration. Bilateral Motor Coordination evaluates the ability to coordinate the two sides of the body in a series of arm movements. Standing and Walking Balance assesses the degree of sensory integration of the proprioceptive (muscle and joint) and vestibular (gravity and head movement) senses. On the Motor Accuracy, eye-hand coordination is measured by how well a child draws a line on top of a printed line. Executing the task requires eye muscle control, praxis ability, visual perception, and motor coordination. Finally, the Postrotary Nystagmus measures the duration of the reflexive back and forth eye movements following rotation of the body (10 times in 20 seconds). This observation is one way of telling how well the nervous system is integrating the sensations from the vestibular system.

References: Ayres (1989) & Bodison & Mailloux (2006).