

# SENSORY INTEGRATION

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## A. Jean Ayres Memorial Issue

# The Art of Therapy

(Note: Reprinted from *Sensory Integration and Learning Disorders*)

### ■ A. Jean Ayres

The child must organize his own brain; the therapist can only provide the milieu conducive to evoking the drive to do so. Structuring that therapeutic environment demands considerable professional skill. Planning and executing movement provides one of the major means through which the brain produces and organizes stimuli, especially somatosensory and vestibular sensations. To a lesser degree, depending upon age, visual stimuli can be included among those organized through motor experience.

Movement which is not goal directed usually is not as therapeutic as that which is more purposeful, and purposeful movement becomes therapeutic when a child makes a response which is adaptive, especially if it is more adaptive than any response previously evinced. Promoting a response which represents a more mature or integrated action than

previous performance requires special understanding and ability on the part of the therapist. Such competence represents more than technical proficiency; it approaches an art.

### The Internal Drive Toward Sensory Integration

The most therapeutic situation is that in which the child's inner urge for action and growth drives him toward a response that furthers maturation and integration. Within the domain of a child's sensorimotor function, these responses most frequently are either more effective postural or balancing responses or greater skill in motor planning, such as is required by the manipulation of objects. These includes playing with toys and solving visual puzzles.

When the optimum-for-growth situation is achieved, the child "turns on" and his obvious zest for experience signifies several things. It tells the therapist that the sensorimotor activity is at a developmental level appropriate to the maturation of the child's nervous system. The therapist can profit from noting this. It indicates that the experience is a "self-actualizing" one; it is growth-promoting, fulfilling, organizing and integrating. It is the kind of experience that the average child continually seeks during the first few years of life. The average child finds it and grows from it; the child with poor sensory integration seems unable to create the situation necessary for normal maturation or to respond to it in a manner fostering maturation. He requires a situation especially tailored to meet his needs.

When a child does find himself in a situation that nurtures development of thwarted potential, his response clearly indicates that, at some level of consciousness, he recognizes the significance of the event. Often the child "takes over" the direction of the treatment in a generally constructive way. He may or may not be cooperative with others in his presence, including the therapist. Cooperation is not his objective; self-fulfillment is. Cooperation with the child then becomes the objective of the therapist. It is an important therapeutic objective. The child's response often is characterized by intense emotional involvement and excitement, perseverance with the task, a refusal to try anything else, a demand to be seen or heard but not directed, an urge to explore his capacity with variations of sensorimotor expressions, and resistance to the necessity for terminating the treatment period. Sometimes children act as though their lives depend upon the experience, and, indeed, to a certain extent, they do.

The realization of a latent potential becomes self-directing, and the more that self-direction can be tapped the greater and faster the neural organization. The ultimate goal of sensory integrative treatment is a being which wants to, can, and will direct himself meaningfully and with satisfaction in response to the environmental demands. The inner drive toward sensory integration exists in most, if not all, young children who come to the attention of a therapist. It often lies buried beneath many other needs which interfere. Enabling the child to gain contact with that drive is difficult, but necessary for maximum response to treatment.

## From the Guest Editor

It has been 10 years since Dr. A. Jean Ayres passed away, leaving us her legacy of excellence in scholarship, research, evaluation, intervention, and compassion for children with hidden disabilities in an area that she called *sensory integration*.

The chapter on intervention in Dr. Ayres's (1972) germinal book begins with, "The child must organize his own brain" (p. 256). Dr. Ayres tried to empower practitioners to trust their ability to facilitate the natural unfolding of the child's innate potential, to step aside from controlling while supporting, to do the most while doing the least, and to hold firm to the conviction that it is only in the context of play and otherwise meaningful activity that children become whole. This emphasis suggests that Dr. Ayres's legacy is more than a theory and technique. She left us a gentle but effective way to interact with clients so that their own drive to participate in meaningful and purposeful activity could emerge.

I thank the Sensory Integration Special Interest Section Standing Committee (Essie Jacobs, Jane Koomar, Zoe Mailloux) for their hard work and support. I likewise thank Western Psychological Services for allowing us to reprint the original work of Dr. A. Jean Ayres. ■

Susanne Smith Roley, MS, OTR  
*SISIS Communications Liaison*

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## Factors Promoting Self-Direction

Self-direction by a child requires ability on the part of the therapist to recognize the areas of sensory integrative dysfunction, to define them, to assess where the dysfunction lies relative to the developmental sequence, and then to reduce the demand being made on the child to a developmental level where an adaptive response is within the child's capacity. Making a demand for skilled sitting balance before righting reactions have been activated will be less apt to tap that internal drive toward normalcy than will asking the child to execute an equilibrium reaction while lying prone on a ball. The latter is an ontogenetically earlier response. Similarly, asking a child to manipulate a yo-yo when his body scheme is poorly developed will meet with little success unless yo-yos are the prevailing toy of his peers. In the latter case, developing a splinter skill with the toy may add to the emotional adjustment.

Sensory integrative evaluations define the general area and degree of dysfunction, which, in turn, suggests the type of endeavor to present initially to the child. Watching the child's approach and response to equipment augments the information about his neurological organization. The same carpet-lined barrel lying on its side elicited three different responses from three children of the same age but of varying degrees of maturation and postural mechanisms. A girl with both poor motor planning and poorly developed postural mechanisms saw it as strictly a garbage can offering her no opportunities for use. One boy immediately crawled into it and started rolling; a third child jumped on top of it and tried to balance on it as he made it roll.

If a child cannot explore his own potential—and his dysfunction often makes it difficult for him to do so alone—the therapist must intervene, aiding, assisting, modifying, and suggesting, bringing out of the child that which he cannot quite bring out by himself. The capacity on the part of the therapist to adapt and innovate as the immediate situation requires contributes greatly in helping the child toward inner-directedness. The skill is one of the most valuable assets of a therapist.

The ability to provide freedom within structure that furthers exploration on the part of the child comes with comprehensive and deep understanding and grasp of the nature of sensory integrative dysfunction.

Knowledge of the general nature of the problem allows preparation for the treatment period with the appropriate equipment and a general plan of action. Watching the child as he performs, seeing his mood, his emotional state, and his motor action guides the therapist in providing the optimum amount of freedom or gentle manipulation to foster the constructive involvement of the child in a task with the gusto as well as intent to achieve that leads him to a more advanced level of neural organization.

A balance of freedom and structure that maximizes constructive exploration is not easily achieved. Both freedom and structure contribute to the therapeutic situation and children require varying degrees of each. Free play does not inevitably, in itself, further sensory integration, but too rigid structure will inhibit the manifestation of potential. Noise and a little havoc often accompany exploration that is growth-promoting; the results are well worth it. Structure may push the child further toward the therapeutic objective than he can reach alone, but too much will defeat its purpose.

The kind of involvement necessary to achieve the state wherein the child becomes effectively self-directing within the structure set by the therapist cannot be commanded; it must be elicited. Therein lies the art of therapy. The opportunity can be offered, encouragement given, suggestions proffered. Physical assistance may help, but unless the child wills to act upon the environment, he will not do so. Furthermore, he will not do so in a manner that can be called adaptive and growth-promoting and therefore therapeutic unless he finds it fulfilling to do so. Fulfillment comes with the right combination of challenge and success.

Many perceptual-motor tasks expected of a child of a given age are too difficult to be appropriate challenges for children with sensory integration problems. Facing a task without the possibility of success is not a challenge; it is confronting doom. Those who have encountered frequent failure have alternate ways of coping. Some annoying, some camouflaging, and some clever. Children learn to avoid or to structure situations in which perceptual or motor skills beyond their capacity are required. The child who has difficulty turning to the left, will move so as to enable him to turn to the right or he will cope by stopping the movement instead of turning. The child whose equilibrium reactions do not enable him to catch his balance easily will compensate by appearing to like to fall. "Crash" solutions to activities with motor demands inappropriate to the child's maturation of equilibrium reactions are common among young boys. Falling can be socially acceptable. It can even appear amusing to the child's peers. It is also a way of avoiding a challenge that may result in failure. It is the therapist's responsibility to enable the maintenance of equilibrium and the gaining of satisfaction from doing so.

Physical surroundings can foster the self-fulfilling properties of sensory integrative experience. Appropriate treatment apparatus is of first importance. It does not have to be elegant to be effective. More neural integration has been promoted by net hammocks, scooter boards, inner tubes and pieces thereof, and large therapy balls than by paper, pencils and commercially prepared pictures, puzzles, diagrams and the like. The latter media do have a place in treatment, however, in the later stages of a remedial program. An ideal situation places the child in a room devoid of all but two or three pieces of equipment offering opportunities for exploration appropriate to the state of neurological involvement. Additional alternate equipment is also readily available to the therapist if the situation requires it. Floor and walls ideally are clean, smooth and not too hard. Fewer injuries will occur on a wood than a cement floor. Mats are available to place as needed for protection. Freedom to explore and respond is possible within a limited, flexible structure.

There is nothing quite as stimulating as the introduction of a new piece of equipment. Excitement stimulates effort. Novelty promotes exploration. The response of one child stimulates effort on the part of another. Suggestions become more acceptable. When the equipment has lost its charm, its absence for a few weeks may renew it.

Large quantities of simple, versatile equipment that makes possible the attainment of an objective through many different approaches keep vigor in a therapeutic program. They also require considerable storage area.

## The Child's Response to Guided Exploration

Certain sensory experiences are a necessary part of the total development of the child. It is believed that there are inherent designs within the brain that normally activate the experiences that produce the sensory patterns critical to normal development. Just as a child needs certain relationships with parents and peers to develop normally in the interpersonal domain, he needs certain sensory experiences to develop intrapersonally.

When these expectations are achieved, even belatedly, not only is the strengthened sensory integration providing, it is hoped, a better foundation for learning, it is providing a better foundation for emotional development. It is hypothesized that the relationship of the sensory input to the neurological substrate of emotional development is responsible for the feeling of fulfillment experienced by many children during sensory integrative therapy.

The extent to which a child's potential is realized through his sensory experience is usually reflected in his enthusiasm for treatment. The response should not be interpreted merely as the child's feeling better about himself because he can now engage more effectively in

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the activities expected of a child his age. If such ability accrues, it is a bonus from which there may be additional satisfaction, but motor skill is neither the objective nor the most important end product of sensory integrative treatment. The goal is sensory stimulation in order to strengthen neural integration, especially that neural integration that underlies learning and behavior. Responses of children suggest that the goal is realized in many but not all children. It is important to bear in mind that while neurological organization may be augmented, at least temporarily, it is not always entirely maintained and probably never completely normalizes the underlying dysfunction.

Although a great deal is known, on a factual level, about the manner in which the brain of a lower animal functions, even more is unknown about how the human brain functions. Watching a child with a brain that does not function in an altogether normal manner and observing how he occasionally enters constructively into a sensorimotor act with a zest that hardly has bounds, leads a therapist to consider the possibility that the reaction of the child is a better guide to therapy than all the facts and hypotheses at hand. The child's brain is operating on the basis of all that is known as well as not known; furthermore it is operating on the basis of what is functionally normal within his brain as well as that which deviates from the norm. His brain holds the answer to the question, "Of what should therapy consist?" Watching the expressions of that brain in its most constructive moments can help answer the question.

On the other hand, a negative response on the part of the child to the treatment situation is a signal to the therapist to stop and analyze the situation. The first question to ask is, "Is the developmental level of the activity too advanced for the degree of sensorimotor integration of the child?" The answer to the question is sometimes found by providing activities of a developmentally earlier nature. If the child shows a more accepting response, the former challenge was probably too great for him. The ability of a child to walk in a fairly normal manner is not necessarily an indication that he has the sensory integration necessary to accomplish all the sensorimotor actions that normally mature ontogenetically before walking appears. A child with a poorly integrated tonic labyrinthine reflex may still learn to walk on a rolling barrel even though he learns it as a splinter skill. Development in the child with learning disorders is irregular and spotty rather than delayed or stopped at a specific point.

A negative response also may be evoked in a competitive situation where the peer is more successful. Discomfort can result from being reminded of inadequacies. Some children respond negatively to the very sight of a jump rope because of failure experience in the usual school situation, but the same child may tackle a complicated unfamiliar scooter activity requiring comparable sensory organization. The following account illustrates another type of negative response resulting from the therapist's misjudging the situation. An anxious child was introduced to an obstacle course which the therapist thought was appropriate for the child's central integrative state. Apparently the child held a different opinion, for as soon as he saw the situation, he crawled into the barrel lying on its side and repeatedly rolled through the obstacle course equipment, rendering it useless and, of course, benign.

Any individual can bring hostility to the treatment situation from another unrelated situation. Allowing the release of hostility through activity may clear the way for establishment of other objectives. Kicking and smashing cardboard cartons and hitting balloons until they break can reduce the hostility level. Whatever the cause of a negative or indifferent response, a wise course of action is to introduce a less demanding therapeutic task that carries more assurance of success.

The child's sense of fulfillment radiates as he experiences himself interacting effectively with the world of objects, or as he pits himself against gravity and finds that it is not quite the ruthless master it was a short time before, or as he finds his body bringing him satisfying sensation. He no longer is the impotent organism shoved about by environmental forces; he can act effectively on the world. He is more of a whole being. Children may perform tasks for rewards, but there is no reward that has quite the enduring qualities that success holds. It is one of the most effective operant conditioners.

The internal and inherent drive or urge toward normal sensorimotor development and expression appears directly associated with the actual integrative process. That drive is far stronger, more obvious, and more freely expressed under certain conditions than under others. The situation which is most apt to draw forth the inner drive toward

maturing is that in which the activity can be executed in a fairly normal manner but previously had been more difficult or not attempted. Rolling inside of a barrel is fun for the child of six to ten years of age whose equilibrium reactions are just adequate to make the barrel roll, but when the task is no longer a challenge to be mastered, it is often seen as juvenile. Boys in their teens have found scooter boards emotionally acceptable. Balancing on equilibrium boards has been fun for adolescents even though such boards are usually outgrown by the average child of eight. A child finds an activity fulfilling in his potential if it meets his level of development in some domain.

These observations that the degree of gratification of a task is directly related to the degree to which it fits a developmental need have been particularly obvious in the treatment of immature postural mechanisms. In this domain, the developmental sequence is fairly evident and each successive step is more dependent upon previous development than is the case in some other neural subsystems. The concept also has been seen in the development of the capacity to motor plan. Riding a scooter board under a rubber strip and catching it with one flexed leg may fascinate an eight year old apraxic girl while others her age are more content with nothing less than discovering complex variations of pease porridge hot, cat's cradles with strings and Chinese jump rope.

Mere activity, in itself, does not necessarily further better sensory integration. If it did, the hyperactive child would be the better organized child. The action must represent direction and effort that is more mature than that previously possible. Desire and will to accomplish the difficult must be present. Without these elements, the movement may be just an expression of a nervous system that says, "move—never mind how." That is the type of message that is apt to be sent by the brain of a child with poor sensory integration. Directions of the better organized brain would be, "move in a manner that results in effective interaction of body and environment."

When a child has just mastered an adaptive response to a pattern of sensory input, he often will pursue that task with considerable zest and excitement, seeming to be almost compelled to repeat and repeat the task as a fulfilling and maturing experience. Structured permissiveness enables such a course of action which generally is considered a highly therapeutic experience. Since children with learning disorders sometimes are unable to stop themselves at an appropriate time, the therapist occasionally may need to intervene. By way of example, a child who had recently learned to perceive which direction he was falling and to catch himself appropriately was exuberantly playing with the large therapy ball. He repeatedly ran to the ball, threw himself on it and fell to the side of the ball, catching himself. The therapist stood to one side, watching but neither directing nor talking. The child finally fell exhausted to the ground, saying, "When are we going to stop?" In this case it would have been advisable for the therapist to stop the child before he had driven himself to a state of exhaustion. The next time the child was presented with the ball, he first rejected it, then quickly added, "I half like it and half don't."

### Disadvantages of Structured Exploration

The unsophisticated professional person can easily misinterpret sensory integrative therapy. Only the trained eye can begin to recognize the effect of the interaction of child and activity on the child's sensory system, and even the trained eye can hardly begin to fathom all that is occurring in the child's brain. Direct, forthright exercises are more easily analyzed. They are usually more impressive because that which is observed seems directly related to the end product. Regimented control often wins respect in this society, whereas the permissive atmosphere may give the impression that the child is just "fooling around." The most effective therapy is often the least convincing to those not intimately involved in the child's welfare. Furthermore, determination of the amount of increased integration resulting from therapy is particularly difficult, for it appears in behavior apparently unrelated to the activity, such as ability to sit in class more quietly, a reduced tendency to lose emotional control in the evening, and a slightly increased ability to learn academic material. Movement is obvious, sensory input is subtle and easily camouflaged by the strong visual stimulus of motion. Courage and convictions are required of the therapist who would administer sensory integrative therapy.

The child's emotional involvement in perceptual-motor activity

*(continued on page 6)*

# Candidate for Sensory Integration Special Interest Section Chairperson

Zoe Mailloux, MA, OTR, FAOTA



Having spent the entire 20 years of my occupational therapy career focused on sensory integration, I welcome the opportunity to be considered as chairperson for the Sensory Integration Special Interest Section. I consider myself extremely fortunate to have had the chance to study with Dr. A. Jean Ayres and to become her research assistant during her last years of clinical practice. During this period, I witnessed first hand her brilliant insights as well as her clear dedication to children. I believe that Dr. Ayres left a great gift to the occupational therapy profession by laying a foundation of research, education, evaluation, and treatment principles that have become one of the most

well-developed aspects of our field. The evolution of her ideas, as evidenced by the broad applications of her work, is a testimony to the importance of her legacy.

Over the past 3 years, I have enjoyed the opportunity to participate on the Sensory Integration Special Interest Section Standing

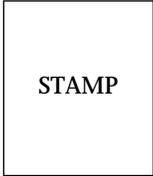
Committee, as newsletter editor, and more recently as acting chairperson. I have seen that the Special Interest Sections provide a forum for addressing grassroots concerns of the American Occupational Therapy Association's membership and a vehicle for completing projects that are relevant and feasible. I would be pleased to be able to offer some continuity between current projects and new possibilities as a continuing member of the committee.

There is a clear, continuous expansion in the awareness and appreciation of sensory integration theory, both within and outside of the occupational therapy profession. As larger numbers of occupational therapists work within school systems, I see great potential for using this approach in ways that will help therapists to make unique contributions to the educational team. There is still a great deal of untapped application of sensory integration concepts to a variety of diagnoses and across the life span. We have a good beginning in research and well-developed tools to help us continue the work that has been started. And while I believe that Dr. Ayres always had clear vision on the importance of sensory integration to occupation, as a profession we are just beginning to fully appreciate this relationship. Sensory integration theory and its application to practice have always been fascinating to me. I would consider it an honor to participate in furthering the development of this approach as chairperson of the Sensory Integration Special Interest Section. ■

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# BALLOT

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## Ballot for SISIS Chairperson

Vote for One

- Zoe Mailloux, MA, OTR, FAOTA
- Write-In Candidate \_\_\_\_\_

**Ballot must be postmarked by January 22, 1999.  
Only original ballots will be accepted.**

## The Art of Therapy *(continued from page 3)*

carries a significant message, but it does not necessarily say the brain is being advanced toward a more mature level of organization. If such advancement is not made, the situation is not therapeutic, although the activity may provide general emotional and physiological benefits. Recognizing and assessing the maturation value of activity requires skilled professional judgment.

The unsophisticated person can also be deceived into thinking that achieving a fulfilling sensory integrative situation is simple and that the therapist need only sit back while the children determine their treatment "willy-nilly." The most effective treatment appears simple, but is simplicity that is the result of careful work and preparation. It is possible, of course, for the therapist to fool himself as well as others. Almost any activity can be named "eye-hand coordination training." Naming it does not make it anything more than practice.

It would be far easier and more impressive to provide treatment through methods that appear more scientific, such as placing a child on a table, attaching some apparatus and turning some knobs to start the apparatus working on the child. Such a procedure would avoid most of the disadvantages of using a natural procedure, but that is not the way to further neural integration. The brain must organize itself and must do so through receiving information from self and environment, integrating that information for use, and then using it for adaptive action upon the environment. Society may respond more favorably to the spotless, chrome-clad treatment office, but sensorimotor integration proceeds best with simple, unimpressive, often makeshift equipment which, furthermore, is often generously sprinkled with dirt carried in from playground or street on shoes or pants cuffs.

Another limitation of a permissive situation lies in the fact that the child with poor neural integration usually has many emotional problems and will take advantage of the permissiveness for their expression. In this case, a revised plan with more direction and structure with considerable support may be required.

### Similarities Between Psychotherapy and Sensory Integrative Therapy

The art of sensory integrative therapy is analogous in many ways to the art of psychotherapy. Considering the similarities helps to clarify the nature of sensory integrative therapy and promote a better grasp of its underlying philosophy. In each instance it is the child who must change within himself; the therapist can only promote and guide. The therapist prepares a setting based on the appraisal of the child's behavior and responds to the patient according to the patient's response to

that setting. Both types of treatment aspire toward emotional integration, although by different routes. A close analogy lies in the attitude of the therapist. In each case the therapist can, if he chooses, "feel with" the patient. He can offer empathy so close that the experience actually becomes one of his own. Without losing objective judgment, the emotional involvement helps to avoid the passing of negative judgment. The therapist, in each case, can share the joy that comes with increased maturation and the understanding at having to discontinue a fulfilling experience. Patient and therapist work together and the togetherness is often felt quite consciously by the therapist.

Much of the time both the sensory and the psychotherapeutic situation are dealing with semi- or non-conscious experiences. The psychotherapist thinks in terms of subconscious psychic complexes and dynamics; the sensory integrative therapist includes many subcortical integrative mechanisms in his thinking and treatment planning. While one therapist is considering the Oedipus complex, the other is considering brain stem integrating processes. In both cases the underlying mechanisms are recognized, their effect on behavior analyzed, and methods of dealing with them contemplated.

Both fields utilize constructs as a basis for understanding behavior. At this stage in the development of each type of therapy, the theories of personality structure seem more acceptable to society than do those of sensory integrative function. Familiarity may be a determining factor. It cannot be said that personality theories are more objectively based on scientific fact. In working with children, each field usually chooses to employ a play-like situation replicating those life experiences in which natural maturation was not experienced. In each case the therapist structures a situation within which the child is given freedom to follow inner dictates toward health. In neither instance can the better integration be forced; it can only be cultivated.

As the natural developmental association between sensory input and psychic experience becomes better understood, the two forms of therapy may profit from joining forces. What is rocking and being cuddled other than tactile and vestibular stimulation plus an interpersonal relationship? Are not the neural traces for the sensory and the social aspects of the experience laid down as one in the brain? Are not many of the child's important emotional experiences in the first five years of life closely associated on an experiential and therefore neurological basis with their sensorimotor equivalents? ■

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