



DEPARTMENT OF THE ARMY  
BROOKE ARMY MEDICAL CENTER  
FORT SAM HOUSTON, TEXAS 78234

REPLY TO  
ATTENTION OF:

Occupational Therapy

25 April 1983

Captain Charles Scoville  
Surgeon General Task Force & Fitness  
HQDA (DASG-TSF)  
Washington, D. C. 20310

Dear Chuck,

Hopefully, in this short letter, I will be able to relate basic theory and treatment concepts reference sensory integration. Also included is the current fitness manual. In reviewing various exercises with one of the fitness trainers at the Academy, I have made specific components reference the applicability of some of the exercises in order to either screen and/or enhance sensory integration skills.

A working definition for sensory integration as I apply it to the learning disabled soldier, is the ability of an individual to receive and process a variety of stimuli, auditory visual and tactile, so that he may react to the environment in an integrated organized manner. Good sensory integration skills reveal an individual being able to maintain good extensor muscle tone in an apedal, quadrupedal, and bipedal posture. He is able to spontaneously cross his body midline with his extremities. He demonstrates spontaneous use of his hands bilaterally. It should be noted, that in bilateral activities, one hand is used as a preferred hand, the other as a supportive hand.

A person, then, with sensory integration dysfunction exhibits symptoms contrary to those mentioned above. Usually, the individual demonstrates poor extensor muscle tone in apedal, sitting and standing postures. In the classroom situation at the Academy, it is very common to see a learning disabled soldier sit very flexed, hold his head while writing, even lay his head down on the desk in order to copy notes. Often time neck flexors are very weak. At an unconscious level, the soldier avoids crossing his body midline with his extremities. In laboratory settings, then, the soldier performs right handedly those activities where the supplies are on the right side of his body. On the contrary, if the materials on the left side of the body, the soldier is forced to either reposition his body so that he can use the materials without crossing his body midline, or in severe cases, it has been noted the soldier will use his non-preferred hand for specific activities. Therefore, although most of the Academy MOS training requires bilateral hand usage, the soldier often times uses a unilateral approach. Because of poor vestibular system, postural reactions are weak, slow or extinct. In severe cases, the autonomic nervous system is often times elicited when the soldier is forced to perform sensory integration activities. It is not uncommon for me to note among my soldiers nausea, hypersensitivity to movement, perspiration, increased respiratory rate, etc.

To try to enhance sensory integration skills and/or remediate sensory integration skills for the dysfunctioning soldier, the 3 motions required include rolling, spinning and up and down movement such as hanging from a trapeze. Crossing the midline of the body is important as well as exercises to enhance body extension and body flexion. Therefore, in reviewing some of the basic exercises, it appears that the trunk twister could be utilized in order to enhance the body crossing midline. Regretfully, this exercise will have to be performed cognitively by the sensory integratively dysfunctioning soldier. The exercise, bend and reach, possibly could be beneficial if, in fact, the soldier does keep his head down. However, the knee bending portion of this exercise will have to be closely monitored. Crisscross toe touch may also be an activity that would force the soldier to cross body midline. However, again this is a cognitive task and will not be performed spontaneously unless sensory integration skills are developed. Body curl exercise might be used in order to enhance neck flexors.

I realize that these are only a few of the exercises that are currently listed in the manual. Possibly, once you have decided specific exercises to incorporate into your new manual, these can be reviewed reference applicability for sensory integration skills.

Again, may I say that its exciting to see that the sensory integration aspect of motor performance is being addressed. From my clinical investigation studies the past 18 months, it became apparent that adult neuroplasticity is indeed a fact. I have had soldiers as old as 47 that demonstrated within a month's time (with 3 treatments weekly) significantly enhanced sensory integration skills. Therefore, to think that at a basic level, some sensory integration activities could be incorporated on a daily basis for 6 weeks, it would stand to reason that the soldiers would, across the board, enhance integration skills as well as develop/remediate integration skills in the marginal soldier.

Hopefully, you will be able to advocate for some type of apparatus at the basic level so that remedial sensory integration can be implemented, thereby, decreasing the attrition rate, not only in basic, but more importantly at the AT level when fine motor/performance skills are critical for advanced individual/technical training. Chuck, if I can be of any further assistance, please feel free to call. I will be leaving BAMC for Ft. Riley 31 May 83. After 2 June, I can be located as Chief, Occupational Therapy Section, Irwin Army Community Hospital, Ft. Riley, Kansas. Thanks for your interest. Looking forward to reading your innovative activities in the new manual.

Sincerely,



JUDITH S. RIGGAN  
MAJ(P), AMSC