

SI DYSFUNCTION—VALLONE

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Although we've used climbing the stairs as our example in this particular case, sensory processing disorders affect all life skills: motor coordination, emotions, communication, attention and adaptive responses.

Hypothetical causes of SID range from genetic predisposition to adverse prenatal or postnatal circumstances, prematurity and birth trauma. This case illustrates how subluxation or dysfunctional joint biomechanics may contribute to the inefficient communication of the PNS to the CNS therefore resulting in the inability of the CNS to organize the appropriate adaptive response (Palmer, Slosberg).

A Case History

History — Danny, a 5-year-old Cauca-

sian male was referred for chiropractic evaluation by his occupational therapist. He was diagnosed with sensory integration disorder (SID) by a neuro developmental pediatrician when he was 3 years of age. His SID manifested as gravitational insecurity and clumsiness. Neurologically, Danny also retained an exaggerated startle response when exposed to loud noises or if surprised (i.e. the unexpected appearance of a parent in the room while he was concentrating on some other task). Danny exhibited a poor posture (slumping while weight-bearing and while seated) and his gait consisted of "mincing" or small steps; he did not run or jump like other children his age. He frequently complained of fatigue after exertion. Of particular concern, was his inability to climb a stair or multiple stairs. If faced with a change in floor level or stair(s), Danny would drop to all fours and crawl.

Danny's medical history was unremarkable for any illness or injury. The pre-

natal history revealed that he experienced in utero constraint. His mother noted that he was palpably and visibly lying across her abdomen with his head under her liver for the last 6 weeks of pregnancy and for several hours into labor. She had been warned that a caesarean section might be required if he failed to descend, but she insisted on attempting a natural labor. Danny turned in the 5th hour and she was able to successfully deliver him vaginally after 9 hours of labor. Danny weighed 9 lbs 3 oz. at birth and measured 22" long; APGARS were 7 at 1 minute and 9 at 5 minutes.

Danny was breastfed immediately after birth and his mother continued to only breastfeed him until he was 6 months old at which point she gradually introduced ground solid table foods and goat's milk to his diet over the next 6 months. He seemed disinterested in solid food initially but his mother continued to offer him what the family was eating (selectively) until he began to

partake of the family meal more readily at 7-8 months. She continued to breastfeed him at least 3-4 times a day until he was 14 months of age.

Danny's developmental milestones lagged by 2-3 months for his age. He had a noticeably exaggerated Moro or startle reflex at birth and this did not appear to lessen with time. He did not begin to crawl until he was 9 months and at that time, crawled using his arms and only one leg. By 13 months, he was using both legs but seemed to circumduct the right leg to bring it into flexion. Danny could crawl up stairs by the time he was 15 months, managing to go up 5 steps at one time. He did not walk until he was 26 months. It was concern about his failure to walk that prompted his parents to consult the early childhood development services offered in their state when he was 20 months old. It was at this point that Danny began to receive occupational and physical therapy services.

When Danny finally walked, he would walk with small, gingerly steps, usually looking down instead of ahead. He was unable to navigate uneven or slanted surfaces. As he became older, he did not climb, run or jump as other children his age did, and rather, withdrew from rapid motion (walking downhill or being pulled along by an adult) by dragging his feet or collapsing in a heap and crying. Although Danny began to walk at 26 months, he was not willing to walk up a step or several steps. Instead he would drop to all fours and crawl up or back down the stairs. Physical therapy services were discontinued as soon as Danny began to walk, but he continued working with the occupational therapist.

According to the neuro-developmental pediatrician's report, Danny's diagnosis of gravitational insecurity was based on his inability to navigate uneven or slanted surfaces, unwillingness to move quickly and his inability to navigate stairs in a weight bearing posture. This coupled with the retained infantile automatism led the pediatrician to diagnose Danny with mild developmental delay and sensory integration disorder, vestibularly based. His occupational therapy diet consisted of gradual introduction of vestibular stimulation (swing, bosu or balance pads, climbing nets, etc.), music therapy and increasingly more complex obstacle course challenges.

Danny was referred to our office by his occupational therapist to rule out a neuro-musculoskeletal component because of her concerns about his posture, his gait and his history of circumducting his hip while learning to crawl.

Examination — Danny presented with a shy affect, slumped posture and the described gait. He did not make immediate eye contact, but with gentle questioning, became engaged and comfortably held a lively conversation about his special interests.

Danny's height and weight were appropriate for his age and he did not appear to have any bruises or other markings of note. He was afebrile and his physical exam was unremarkable except for poor thoracic excursion on respiration which appeared to be related to his slumped posture. When asked to stand erect, his excursion increased, but he quickly fatigued and slumped forward again.

Postural evaluation revealed anterior head carriage and rounding of the shoulders (overall extensor muscle tone was diminished while flexor tone (psoas,



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