



# PEDIATRICS

## Sensory Integration Dysfunction: How Does the Subluxation Fit Into the Puzzle?

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### ABSTRACT

- **OBJECTIVE:** To present a case study of a child with sensory integration issues and discuss how subluxation may contribute to this dysfunction.
- **DESIGN:** A clinical case study. Danny, a 5-year-old Caucasian male was referred for chiropractic evaluation. He had been diagnosed with sensory integration disorder (SID) which manifested as poor posture, gravitational insecurity and clumsiness. Danny's gait was abnormal and he was unable, at 5 years of age, to climb stairs. He was being co-treated by the occupational therapist who referred him for chiropractic evaluation.
- **RESULTS:** After a period of 6 months of chiropractic care in conjunction with continued occupational therapy, Danny demonstrated improvement in his gait and weight bearing activities as well as a significant decrease in his gravitational insecurity. Behavioral improvements were reported subjectively by parents and therapists (playing tag, jumping off of a swing set, improved ability to perform challenging obstacle courses). Objective reporting by the same observers was based on functional improvements like motor planning (observation of his gait and ultimately climbing stairs).
- **CONCLUSION:** Chiropractic adjustments and craniosacral therapy utilized in a co-therapeutic environment could result in the reduction of aberrant sensory stimuli optimizing the results of the therapeutic diet offered through an occupational therapy program designed to address sensory integration issues.

### Introduction

Sensory integration theory was first presented over 40 years ago by A.J. Ayers, PhD, OTR. Dr. Ayers theorized there was a relationship between behavior and brain functioning. Sensory integration was described as the way in which we take in internal and external sensory input, how we interpret this input and how we organize the information to react or respond with purposeful and appropriate responses. (Ayers, Kranowitz)

Sensory processing requires functional and efficient communication between the peripheral nervous system and the central nervous system. The normal process of sensory integration begins before birth and continues throughout life, with the majority of development occurring by the end of the first decade. The ability for sensory integration to become more refined and effective coincides with developmental processes as it determines how well motor and speech skills, and emotional stability develop (Ayers). Ayres' early work was the impetus for ongoing research that continues to explore the foundation sensory integration provides for complex learning and behavior throughout life.

Sensory integration disorder (SID) is a neurological disorder that results from

the brain's inability to integrate certain information received from the body's sensory systems. The neurological disorganization resulting in SID is hypothesized to occur in several different ways: the brain does not receive messages due to a disconnection from the peripheral nervous system; sensory messages are received inconsistently; or sensory messages are received consistently, but do not connect properly with other sensory messages. When the brain does not process sensory messages properly, inefficient motor, language, or emotional output is the result (Ayers, Kranowitz).

It is this author's contention that a child's inability to respond "appropriately" to ordinary experiences due to inefficient communication between the PNS and the CNS may be due to subluxation or dysfunctional joint biomechanics as well as potentially, the CNS's inability to process sensations due to other causes.

How might SID manifest in a child climbing the stairs? Ascending the stairs, the child may need to look down at his feet for visual cues about what his body is doing. He may cling to the banister or to an adult's hand. Instead of alternating feet, he may "mark time" to keep his balance. He may be very resistant to, or fearful of heights.

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## Foundation for Chiropractic Progress UPDATE

### ■ Jerry Rice ad now available to chiropractic organizations and DCs:

The Jerry Rice ad placed by the Foundation for Chiropractic Progress (F4CP) in national media, is now available to state associations and individual doctors. Mr. Rice has given his permission for it to be placed in the local media. The ad cannot be changed except for the inclusion of contact information. The F4CP requires organizations or doctors who utilize the ads to sign a letter of agreement indicating its uses. A draft of the agreement can be viewed on the Foundation website.

The advertorial seems to be doing well in the short time since its release. The F4CP reports that it has generated 72 news articles in 7 different states with a readership of 1,660,800. The next quarterly advertorial will feature Mr. Rice and will be in a video format.

### ■ Other posters available.

The foundation has produced 18 x 24 posters of its four advertisements including the Jerry Rice ad. They are available to Foundation contributors who pledge \$50 a month on more. Contributors of \$25 a month will receive the Rice poster.

### ■ Foundation ad hits Capitol Hill:

As a way of assisting doctors and students

who lobbied on Capitol Hill during ACA's National Legislative Conference in Washington DC the Foundation placed a half page advertisement in *USA Today* that included a quote from Richard Sarnat, President of Alternative Medicine Integration (AMI). The quote reads: "My research, conducted over a ten-year period utilizing clinical and cost outcomes data from one of the nation's largest insurance underwriters, suggest that the regular utilization of chiropractic could reduce the need for hospitalization, pharmaceutical usage and overall global health care costs by 50%." A link to the article in *JMPT* is provided in the ad to substantiate this quote.

The Foundation plans to place a similar ad in conjunction with the ICA hosted Legislative Meeting in May.

### ■ New members added to Foundation Board:

Dr. Mark Ziegler, president of Northwestern Health Sciences University and Dr. Carol Ann Malezia have recently been appointed to the Foundation Board. They will be joining current Board members Kent S. Greenawalt, Dwayne Bennett, Don Petersen, Dr. Gerry Clum, Dr. Mark Sanna, Dr. Bob Hoffman, Dr. Terry Yochum, Dr. Mike Flynn and Charlie Dubois.

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