The Intellectual and Developmental Disabilities Council of Tarrant County

Welcome! Please Sign-in.

Exploring Chiropractic Care Benefits for People with Autism, IDD, and Neuromuscular Disorders

November 5, 2026

To transform the region into an inclusive community where individuals with intellectual and developmental disabilities (IDD) thrive.

The Intellectual and Developmental Disabilities Council of Tarrant County

A Community Coalition Increasing Opportunities for People with IDD

meet & greet



Take this opportunity to introduce yourself!

- Who are you?
- How can you assist?
- What might you need assistance with?

Scan to sign in

Welcome MEMBERS

- ***Individual Members:***
  - Shelly Roberts
  - Renae Arledge
  - Maria Flores-Gonzales
  - Monetta Smith
  - Courtney Caraway
  - Latoya Henson
  - Joel Broker
  - Sarah Stuckel
  - Liliana Zumba-Acevedo
  - Cynthia Rodriguez
  - Theresa Moffitt
  - Ranella Franklin
  - Sandra Rodrigo
  - Gwen Li
  - Amber Luckey
  - Don Gilley
  - Richard Garrett
  - Trelawny Jones
  - Audra Ressel
  - Joseph Barbarito
  - Teresa Briscoe
  - Susan Cole
  - Kayla Glover
  - Leah Whitworth
  - Julia Chalker
  - Iris Tule
  - Shelly Lemman
  - Carrie Tunson
  - Erin Fogarty
  - Whitney Dragon
  - Meagan Bordelon
  - Steve Brooks
  - Mihstiegh Boggs
  - Cody Turner
  - Katrina Willie-Musoma

Your Name/Organization Belongs Here

www.IDDCouncil.org/join-us

- ***Premier Partners:***
  - Tarrant County, office of County Judge (Founding Partner)
  - Fort Worth ISD (Founding Partner)
  - My Health My Resources of Tarrant County (Founding Partner)
  - Cook Children's Health Plan
  - Cook Children's Medical Center
- ***Elite Members:***
  - Berry Family Services
- ***Organizational Members:***
  - *United Healthcare*
- ***Sponsor Members:***
  - Green Oaks Education and Support
- ***Professional Members:***
  - Community Options, Inc.
  - Center for ASD
  - 3-in-1 Advocacy

Intellectual and Developmental Disabilities Council of Tarrant County

JOIN A COMMITTEE

- **Communications & Programming Committee:** Identifies and schedules topics of interest for Council events and helps create and distribute information important to members of the Council and community through written and electronic media. Meets hybrid as needed.
- **Special Events Committee:** Calling all party planners, entertainers and creative thinkers! Let's plan programs that add value to the community, advocates and creates awareness of IDD. The committee is looking for parents, providers, community leaders and event planners to join us in finding and creating new opportunities. Meets hybrid as needed.
- **Transition Committee:** Provides educators the opportunity to collaborate and discover resources to share with families in the path to adulthood. The committee consists of school counselors, transition specialists, parents and advocates interested in establishing or advancing opportunities for people with disabilities after high school. Help develop strategies that support families and students in schools and secondary education. Meets the 2nd Friday of the month from 9-10:30 a.m.

Intellectual and Developmental Disabilities Council of Tarrant County



The IDD Council is accepting Board member applications from dedicated self-advocates, caregivers, and community leaders.

Join us as we grow our reach, strengthen our mission, and make a difference together.

Information: https://www.iddcouncil.org/board-member-info.

Intellectual and Developmental Disabilities Council of Tarrant County

UPCOMING MEETINGS & EVENTS



MONTHLY MEETINGS

1ST THURSDAY EACH MONTH 9-10:30 a.m.
3136 W. 4th Street, Fort Worth

TRANSITION COMMITTEE MEETINGS

2ND FRIDAY EACH MONTH 9-10:30 a.m.
(location varies)

November 13 – Guardianship and the Law

BOARD OF DIRECTOR MEETINGS

3RD FRIDAY EACH MONTH 1:30 – 3 p.m.
(location varies)



Intellectual and Developmental Disabilities Council of Tarrant County

MAKING CONNECTIONS COMMUNITY RESOURCES FAIRS

- **February 21, 2027** – Northwest ISD
- **March 7, 2027** – First Methodist Mansfield



SATURDAY, FEBRUARY 20, 2027 • 9 AM - 1 PM

Northwest ISD, 2100 Texan Drive Justin, TX 76247

Resources for:

- Medicaid Waivers/Social Security
- Guardianship/Supported Decision-Making
- Behavioral Health
- Transition & Employment Services
- Education & College Programs
- Assitive & Adaptive Technology
- Special Needs Trusts / Wills
- Assisted Living / Housing
- Financial Planning
- Recreation & Leisure
- Therapy & Camp Providers
- Respite/Day Habilitation
- and more!


Services & Support


Child/Adult Respite Available


Breakout Sessions

Schedule, Session Details, Childcare/Respite Registration, Exhibitor and Sponsor Registration:
www.iddcouncil.org/makingconnectionsnorth

The IDD Council is proud to partner with the following ISDs to bring you *MAKING CONNECTIONS NORTH TARRANT COMMUNITY RESOURCES FAIR*

Northwest INDEPENDENT SCHOOL DISTRICT · GRAPEVINE COLLEYVILLE INDEPENDENT SCHOOL DISTRICT · EAGLE MOUNTAIN SAGINAW ISD Fostering a Culture of Excellence · ARGYLE INDEPENDENT SCHOOL DISTRICT

Intellectual and Developmental Disabilities Council of Tarrant County

ABOUT OUR PRESENTER

Dr. Tori Hartline
Sunlife Chiropractic



FAMILY WORKSHOP SERIES

IDD Chiropractic Care

A Workshop for Families & Caregivers

- Neuromuscular Disorders
- Sensory Processing Sensitivities
- Autism Spectrum Disorder (ASD)
- Intellectual & Developmental Disabilities (IDD)

OUR PROMISE

Compassionate, adaptive care

PACE

Always at your loved one's pace

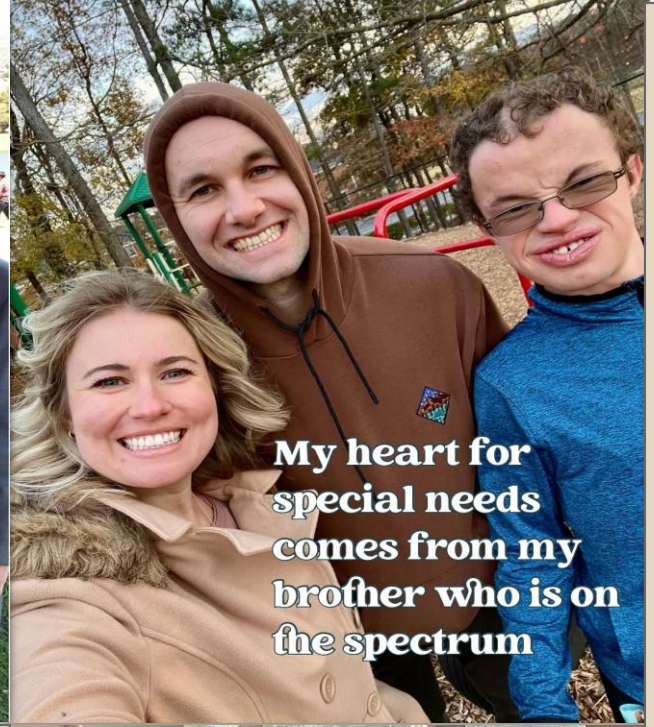
WHO WE SERVE

All ages, all abilities

Sunlife CHIROPRACTIC









Dr. Tori Hartline,
D.C., M.S.



Sunlife
CHIROPRACTIC

Who We Serve

Every family deserves access to gentle, specialized care.

Neuromuscular Disorders

Individuals with conditions affecting muscle tone, coordination, or movement.

Sensory Processing Sensitivities

Those who experience heightened responses to touch, sound, or movement.

Autism Spectrum Disorder (ASD)

Individuals who benefit from predictable, low-stimulation environments.

Intellectual & Developmental Disabilities (IDD)

Families navigating complex care needs across all ages.

We meet each individual exactly where they are.

CORE VALUES

Mission, Purpose & Values

MISSION

To provide compassionate, evidence-informed chiropractic care that improves the quality of life for individuals with IDD and their families.

PURPOSE

We exist to bridge the gap between specialized healthcare and underserved neurodiverse communities.

SAFETY FIRST

Every technique is adapted for sensory and physical needs. No surprises, no rushing.

PARTNERSHIP

We work alongside families, therapists, and physicians as part of a whole-care team.

EDUCATION

We believe informed families are empowered families. We explain everything.

GROWTH

We celebrate every milestone — big or small — on each individual's unique wellness journey.

The Nervous System Connection

> *"The nervous system controls everything — movement, digestion, sleep, behavior, and pain. When it's under stress, the whole body feels it.*

WHAT WE KNOW

The spine houses the spinal cord — the main highway of the nervous system. Subluxations (misalignments) can create interference in nerve signaling, impacting everything from muscle tone to mood regulation.

WHY IT MATTERS FOR IDD

Many individuals with IDD already face nervous system challenges. Gentle chiropractic adjustments aim to reduce interference, support better communication between brain and body, and promote a calmer, more regulated state.

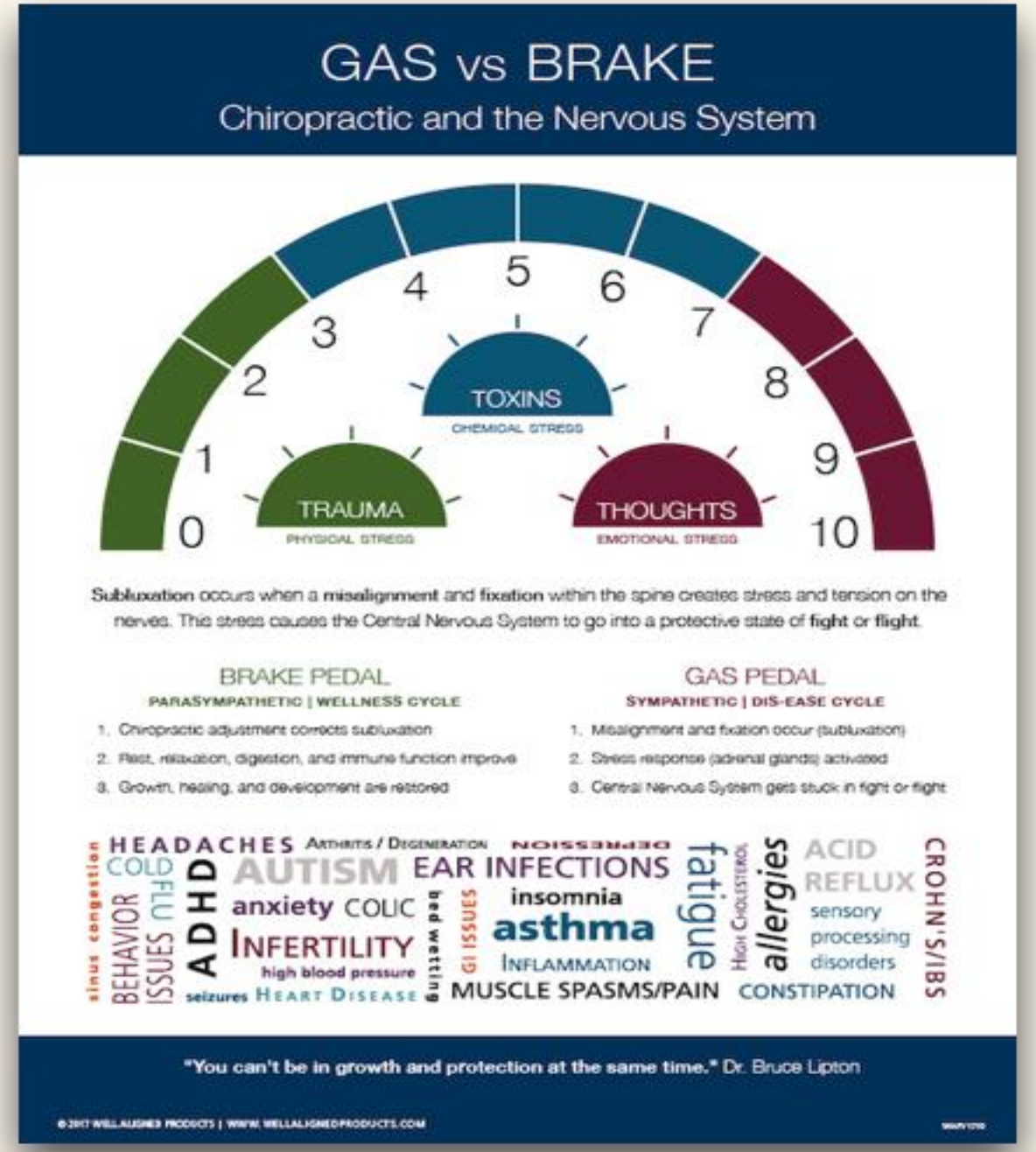
What is the Nervous System?

- Motor 💪
- Gut 💩
- Immune 🤒
- Speech 🗣️
- Social 🏫
- Behavioral 😡
- Emotional 😟

“Brains are built bottom up, back forward, over time. When the Neuromotor system is altered, everything else is altered.”

Nervous System Regulation:

What does it mean?



How We Are Pushing The “Gas Pedal”

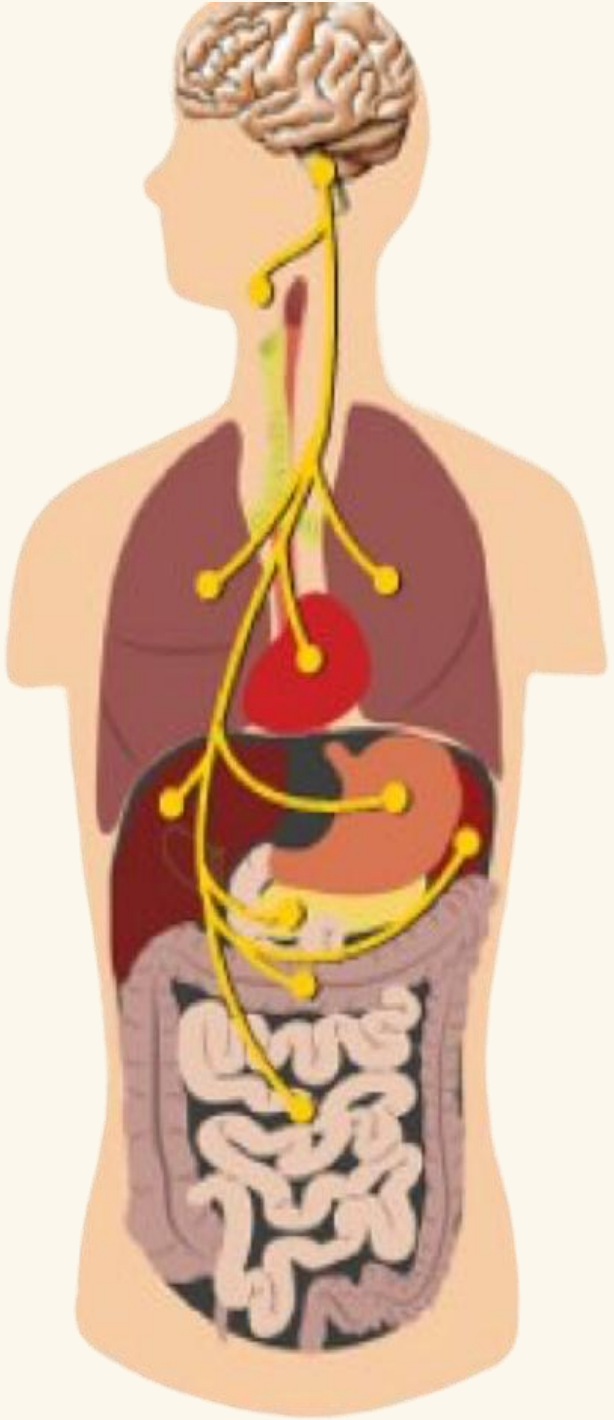
Thoughts

- **Stress, anxiety (Mental/ Emotional Stress)**
- **Overscheduling (Go, go, go society/ hurry)**
- **Overstimulation/ unrelenting nervous system stress**

Toxins

- **Environmental toxic load**
- **Diet**
- **Antibiotics**
- **Medications**

- **Trauma**



The Importance of the “Brake Pedal”

The Vagus Nerve

Sunlife CHIROPRACTIC

What Families Often Observe

These are the concerns that bring families to our door.

SLEEP DIFFICULTIES

70% of individuals with ASD experience disrupted sleep patterns

SENSORY OVERLOAD

1 in 3 IDD individuals experience significant sensory processing challenges

MUSCLE TENSION

Common in hypertonicity or hypotonicity affects movement and comfort daily

BEHAVIORAL CHANGES

Often linked to unaddressed physical discomfort the individual cannot verbalize

DIGESTIVE ISSUES

Frequent gut-brain connection disruptions are common across IDD diagnosis.

POSTURAL CONCERNS

Widespread Spinal alignment issues tied to low muscle tone and mobility aids

Recognizing these patterns is the first step toward supportive, whole-body care — chiropractic care addresses many of these interconnected challenges.

Sleep Difficulties & the Nervous System

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

😴 Quality of Life Impact

- Chronic sleep deprivation worsens behavior, learning, and emotional regulation the following day
- Growth hormone — critical for development — is primarily released during deep sleep stages
- Poor sleep heightens sensory sensitivity, making daily tasks more distressing for individuals with ASD/IDD
- Caregivers experience secondary sleep deprivation, leading to burnout and reduced caregiving capacity
- Sleep disruption is linked to increased meltdown frequency and intensity
- Immune function, pain thresholds, and mood are all compromised without restorative sleep

🌿 How Chiropractic Care Helps

- Gentle cervical and upper thoracic adjustments reduce tension that activates the stress response
- Vagus nerve stimulation through upper cervical care promotes parasympathetic (rest & digest) activation
- Reducing subluxation interference allows the brain to shift more easily from alert to calm states
- Many families report improved sleep onset and duration within the first 4–6 weeks of consistent care
- Soft-tissue work relieves physical discomfort that may be causing nighttime waking
- A regulated nervous system creates the biological conditions that allow deep, restorative sleep

The goal: a calmer nervous system that can "power down" at bedtime.

Chiropractic Case Study - Sleep

- **Diversified adjusting technique to C1 and C2 subluxations were utilized. After nine adjustments the patient reports that he can now sleep up to 6 hours and wakes only once a night for 1-2 hours.**

- **Conclusion:**
  - **This case demonstrates a situation in which chiropractic care has helped a patient increase sleep quantity and quality.**
  - **The decrease of symptoms within four months of care suggests a relationship between insomnia and vertebral subluxations.**

Resolution of Chronic Insomnia in a 69-Year-Old Male Following Chiropractic: A Case Study & Review of Literature

Annals of Vertebral Subluxation Research, Volume 2024

Trystanna B. Williams, BA, DC

Annals of Vertebral Subluxation Research ~ June 3, 2024 ~ Volume 2024 ~ Pages 48-56

Abstract

Objective: The purpose of this study is to report on the positive health outcomes following chiropractic in a man suffering from chronic insomnia.

Clinical Features: A 69-year-old male patient presented with difficulty sleeping. Patient reported dissatisfaction with sleep quantity and quality for over ten years. Chiropractic exam revealed upper cervical subluxations, loss of cervical curve and degeneration from C4-C7.

Intervention and Outcomes: Diversified adjusting technique to C1 and C2 subluxations were utilized. After nine adjustments the patient reports that he can now sleep up to 6 hours and wakes only once a night for 1-2 hours.

Conclusion: This case demonstrates a situation in which chiropractic care has helped a patient increase sleep quantity and quality. The decrease of symptoms within four months of care suggests a relationship between insomnia and vertebral subluxations. Further investigation and research into spinal subluxations as contributing factors to insomnia should be pursued.

Key Words: *chiropractic, subluxation, adjustment, diversified, sleep, sleep disorder, insomnia*

Sensory Overload & the Nervous System

When the nervous system is stuck in overdrive, the world feels unbearable.

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

Avoidance & Isolation

Sensory overload causes individuals to withdraw from community events, school, therapy, and family activities — shrinking their world.

Fight-or-Flight Dominance

The sympathetic nervous system stays chronically activated, keeping the body in a state of hypervigilance that is physically and emotionally exhausting.

Social Participation Barriers

Difficulty tolerating sound, touch, or crowding limits participation in school, therapy, worship, and family life.

Calming Sympathetic Dominance

Adjustments targeting the thoracic spine can reduce sympathetic overdrive and help the body return to a baseline calm state.

Proprioceptive Input

Chiropractic delivers controlled, predictable touch and joint input that helps the brain learn to process sensory information more accurately.

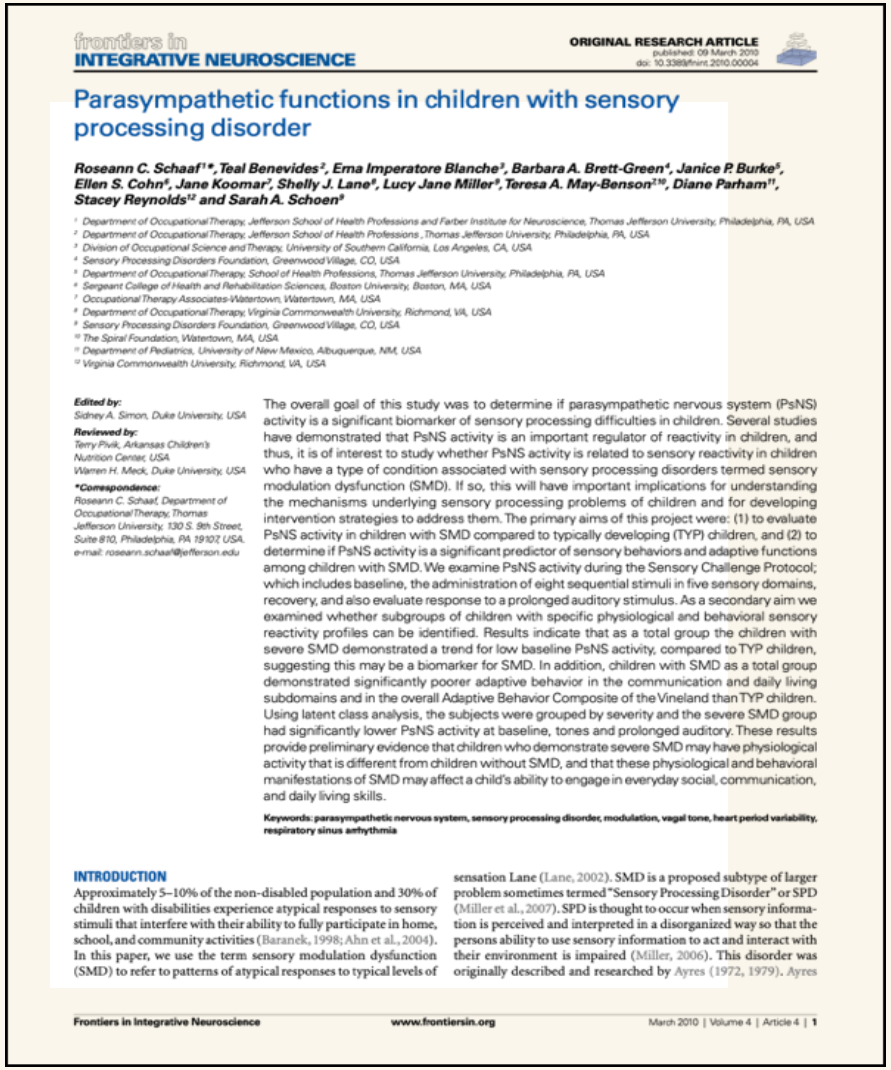
Gradual Desensitization

Consistent, gentle care in a calm environment slowly retrains the nervous system to perceive safe touch as non-threatening over time.

"A regulated nervous system can tolerate more — and enjoy more."

The Vagus Nerve and Sensory Modulation Dysfunction (SMD)

- Our environments are constantly **mentally over stimulating** and **physically under stimulating**.
- These results provide preliminary evidence that **children who demonstrate severe SMD may have physiological activity that is different from children without SMD**, and that these physiological and behavioral manifestations of **SMD may affect a child's [and adult's] ability to engage in everyday social, communication, and daily living skills.**
- Sensory Modulation Dysfunction is linked to **low Vagal Tone**



frontiers in
INTEGRATIVE NEUROSCIENCE

ORIGINAL RESEARCH ARTICLE
published: 09 March 2010
doi: 10.3389/fnint.2010.00004

Parasympathetic functions in children with sensory processing disorder

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The overall goal of this study was to determine if parasympathetic nervous system (PsNS) activity is a significant biomarker of sensory processing difficulties in children. Several studies have demonstrated that PsNS activity is an important regulator of reactivity in children, and thus, it is of interest to study whether PsNS activity is related to sensory reactivity in children who have a type of condition associated with sensory processing disorders termed sensory modulation dysfunction (SMD). If so, this will have important implications for understanding the mechanisms underlying sensory processing problems of children and for developing intervention strategies to address them. The primary aims of this project were: (1) to evaluate PsNS activity in children with SMD compared to typically developing (TYP) children, and (2) to determine if PsNS activity is a significant predictor of sensory behaviors and adaptive functions among children with SMD. We examine PsNS activity during the Sensory Challenge Protocol; which includes baseline, the administration of eight sequential stimuli in five sensory domains, recovery, and also evaluate response to a prolonged auditory stimulus. As a secondary aim we examined whether subgroups of children with specific physiological and behavioral sensory reactivity profiles can be identified. Results indicate that as a total group the children with severe SMD demonstrated a trend for low baseline PsNS activity, compared to TYP children, suggesting this may be a biomarker for SMD. In addition, children with SMD as a total group demonstrated significantly poorer adaptive behavior in the communication and daily living subdomains and in the overall Adaptive Behavior Composite of the Vineland than TYP children. Using latent class analysis, the subjects were grouped by severity and the severe SMD group had significantly lower PsNS activity at baseline, tones and prolonged auditory. These results provide preliminary evidence that children who demonstrate severe SMD may have physiological activity that is different from children without SMD, and that these physiological and behavioral manifestations of SMD may affect a child's ability to engage in everyday social, communication, and daily living skills.

Keywords: parasympathetic nervous system, sensory processing disorder, modulation, vagal tone, heart period variability, respiratory sinus arrhythmia

INTRODUCTION

Approximately 5–10% of the non-disabled population and 30% of children with disabilities experience atypical responses to sensory stimuli that interfere with their ability to fully participate in home, school, and community activities (Baranek, 1998; Ahn et al., 2004). In this paper, we use the term sensory modulation dysfunction (SMD) to refer to patterns of atypical responses to typical levels of sensation Lane (Lane, 2002). SMD is a proposed subtype of larger problem sometimes termed "Sensory Processing Disorder" or SPD (Miller et al., 2007). SPD is thought to occur when sensory information is perceived and interpreted in a disorganized way so that the persons ability to use sensory information to act and interact with their environment is impaired (Miller, 2006). This disorder was originally described and researched by Ayres (1972, 1979). Ayres

Muscle Tension & the Nervous System

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

💪 Quality of Life Impact

- Hypertonicity (high muscle tone) causes pain, rigidity, and restricted range of motion that interferes with dressing, bathing, feeding, and mobility
- Hypotonicity (low muscle tone) leads to poor postural control, fatigue, and difficulty with sustained activities.
- Unresolved muscle tension creates secondary joint strain and compensatory movement patterns that worsen over time
- Physical discomfort that the individual cannot verbalize often surfaces as behavioral changes or increased distress
- Restricted movement limits participation in therapy, play, and self-care — reducing independence
- Caregivers face physical demands managing a tensed or rigid individual, increasing injury risk for both

🌿 How Chiropractic Care Helps

- Spinal adjustments restore proper joint mobility, signaling surrounding muscles to release protective guarding
- Instrument-assisted soft tissue mobilization relaxes hypertonic muscle groups without overwhelming the sensory system
- Correcting vertebral misalignment reduces aberrant nerve signals that drive chronic muscle tension
- Proprioceptive and reflex arc normalization through gentle adjustments helps the brain recalibrate muscle tone
- Combined care with stretching protocols provides caregivers with safe at-home techniques to maintain gains
- Reducing physical tension often results in visibly calmer behavior, easier positioning, and improved tolerance for daily care routines

When the spine is aligned, muscles receive clearer signals — and tension begins to release.

Chiropractic v. Muscle Relaxers

- **Chiropractic was more beneficial than placebo in reducing pain and more beneficial than either placebo or muscle relaxants in reducing Global Impression of Severity Scale.**

A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain

Kathryn T. Hoiriis, DC,[a] Bruce Pfleger, PhD,[b] Frederic C. McDuffie, MD,[c] George Cotsonis, MA,[d] Omar Elsangak, MBBCh, DC,[e] Roger Hinson, DC,[f] and Gregoria T. Verzosa, DC[g]

ABSTRACT

Background: The adult lifetime incidence for low back pain is 75% to 85% in the United States. Investigating appropriate care has proven difficult, since, in general, acute pain subsides spontaneously and chronic pain is resistant to intervention. Subacute back pain has been rarely studied.

Objective: To compare the relative efficacy of chiropractic adjustments with muscle relaxants and placebo/sham for subacute low back pain.

Design: A randomized, double-blind clinical trial.

Methods: Subjects (N = 192) experiencing low back pain of 2 to 6 weeks' duration were randomly allocated to 3 groups with interventions applied over 2 weeks. Interventions were either chiropractic adjustments with placebo medicine, muscle relaxants with sham adjustments, or placebo medicine with sham adjustments. Visual Analog Scale for Pain, Oswestry Disability Questionnaire, and Modified Zung Depression Scale were assessed at baseline, 2 weeks, and 4 weeks. Schober's flexibility test, acetaminophen usage, and Global Impression of Severity Scale (GIS), a physician's clinical impression used as a secondary outcome, were assessed at baseline and 2 weeks.

Results: Baseline values, except GIS, were similar for all groups. When all subjects completing the protocol were combined (N = 146), the data revealed pain, disability, depression, and GIS decreased significantly ($P < .0001$); lumbar flexibility did not change. Statistical differences across groups were seen for pain, a primary outcome, (chiropractic group improved more than control group) and GIS (chiropractic group improved more than other groups). No significant differences were seen for disability, depression, flexibility, or acetaminophen usage across groups.

Conclusion: Chiropractic was more beneficial than placebo in reducing pain and more beneficial than either placebo or muscle relaxants in reducing GIS. (J Manipulative Physiol Ther 2004;27:388-98)

Key Indexing Terms: *Chiropractic; Central Muscle Relaxants; Low Back Pain; Randomized Controlled Trial*

Behavioral Changes & the Nervous System

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

Behavior is communication. Physical discomfort is often the message.

QUALITY OF LIFE

Unspoken Pain

Many individuals with IDD cannot verbalize pain. Aggression, self-injury, withdrawal, or crying may be the only signal that something hurts.

QUALITY OF LIFE

Family Stress

Escalating or unexplained behaviors strain family relationships, disrupt routines, and lead to caregiver exhaustion and isolation.

QUALITY OF LIFE

Therapy & School Disruption

Behavioral outbursts reduce participation in education and therapy — limiting skill-building opportunities critical to long-term development.

CHIROPRACTIC

Pain as a Root Cause

Identifying and reducing physical pain through spinal and soft-tissue care frequently results in measurable reductions in challenging behaviors.

CHIROPRACTIC

Nervous System Regulation

A regulated nervous system reduces the physiological stress state that amplifies behavioral responses. Calmer body = calmer behavior.

CHIROPRACTIC

Tracking the Connection

We document behavioral patterns alongside physical findings — helping families and care teams see the link between body and behavior over time.

Pain-driven behavior decreases when the source of pain is addressed at the root.

Retrospective Study of Chiropractic Care in School Aged Children



Journal of Bodywork & Movement Therapies 42 (2025) 946–954

Contents lists available at ScienceDirect

Journal of Bodywork & Movement Therapies

journal homepage: www.elsevier.com/jbmt

Retrospective review of case records of school-aged children receiving chiropractic care

Jenna Duehr[a,*], Lona Cook[c], Amanda Blonigen[c], Alice Cade[a], Tanja Glucina[a], Monika Buerger[d], Stephanie Sullivan[b], Tyson Perez[b], Muhammed Samran Navid[a,e], Imran Khan Niazi[a], Heidi Haavik[a]

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ARTICLE INFO

Keywords:
Chiropractic
School children
Neurophysiology
Quality of life
Neurodevelopmental disorders
Surface electromyography
Thermography
Heart-rate variability

ABSTRACT

Background: Chiropractic care is utilized in school aged children for a variety of health complaints, including headaches, postural issues, nocturnal enuresis, neurodevelopmental disorders, and back pain. Chiropractic care, with its ability to impact sensorimotor integration, motor control and the prefrontal cortex, could therefore potentially benefit school aged children.

Methods: In this retrospective case series, records of patients presenting for chiropractic care at an onsite school chiropractic clinic were reviewed. Patients underwent 12 weeks of chiropractic care and completed three questionnaires and two sets of neurophysiological scans. The data from these questionnaires and scans were combined, averaged, and statistically analyzed.

Results: One hundred and eighty records of children aged 5–10 years from nine schools were included in the overall analyses. Statistically significant improvements were noted in the 'health and activities' sub-section and overall score of the Pediatric Quality of Life Inventory™ and in the hyperactivity domain of the Strengths and Difficulties questionnaire.

Conclusion: This retrospective review of case records from children attending an onsite school chiropractic clinic has demonstrated some changes in health-related quality of life following a period of 12 weeks of chiropractic care. Further research using a clinical trial design is needed to extrapolate the findings and to assess causation.

1. Introduction

Childhood is a period of huge growth and development. The health and experiences of children during this critical time can have long-term impacts on disease rates, mental health, and overall well-being for the rest of their lives(Drozdz et al., 2021; Goodman et al., 2011; Middlebrooks., 2007; Marcus et al., 2022; Bellis et al., 2019). However, the health and wellbeing of children today is showing some alarming areas of decline and concern (Lebrun-Harris et al., 2022). Data from the National Survey of Children's health in the US from 2016 to 2020 showed an increase in rates of anxiety, depression, behavioral disorders, and obesity (Lebrun-Harris et al., 2022). The survey also showed declining rates of preventative medical visits, daily physical activity, and parents mental health (Lebrun-Harris et al., 2022). The decline in key areas of health is also evident from more historical data from the 2007 and 2011/2012 National Survey of Children's Health(Initiative et al., 2024) which showed higher rates in many of the domains related to good health (preventative medical visits, physical activity) and lower rates of obesity, suggesting that the decline in key areas of children's health has been evident for nearly two decades.

The US department of Health and Human services' Healthy People 2030 campaign have numerous strategies related to children's health,

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https://doi.org/10.1016/j.jbmt.2025.02.016
Received 13 November 2024; Received in revised form 21 January 2025; Accepted 11 February 2025
Available online 19 February 2025
1360-0592/© 2025 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Hyperactivity is controlled by the prefrontal cortex.

Emotional made improvements but limitations in the study didn't show statistically significant.

Table 3
Results for the Strengths and Disabilities Questionnaire (SDQ) pre- and post-chiropractic care.

	Pre-chiro	Post-Chiro	coefficient, [95% CI], *p*-value
n	134	134	
Emotional	1.95 (2.07)	1.93 (2.29)	0.02, [-0.25, 0.30], 0.872
Conduct	1.70 (2.17)	1.70 (1.96)	0.00, [-0.23, 0.23], 0.999
Hyperactivity	**5.72 (2.89)**	**5.30 (2.98)**	**0.42, [0.09, 0.75], 0.013**[a]
Peer	2.21 (2.03)	2.07 (1.95)	0.13, [-0.08, 0.34], 0.217
Prosocial	6.66 (2.51)	6.90 (2.51)	−0.24, [-0.59, 0.11], 0.179
Total	11.56 (6.45)	11.00 (6.32)	0.56, [-0.10, 1.22], 0.097

Note-all domain scores are out of 10, total is out of 50, and a higher score indicates greater difficulty in that area.
[a] Indicates a significant result.

movement skills (Farid et al., 2017). Previous studies have indicated that chiropractic care may enhance sensorimotor integration, allowing the brain to better respond to internal and external environments (Haavik et al., 2012, 2021; Lelic et al., 2016; Holt et al., 2016). This improvement may contribute to the enhanced learning and behavioral regulation reported by some children in this study during their period of chiropractic care. It may also be possible that correcting vertebral subluxations could have contributed to the changes seen in hyperactivity and quality of life for children in this study. However, this is a relationship that requires further research.

Digestive Issues & the Nervous System

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

🫁 QUALITY OF LIFE IMPACT

- Constipation, bloating, reflux, and irregular digestion are highly prevalent across autism and IDD diagnosis.
- Gastrointestinal discomfort is a primary — and often unidentified — driver of distress behaviors and sleep disruption
- Nutritional absorption challenges compromise energy, immunity, growth, and neurodevelopment
- Feeding avoidance and texture sensitivities can be compounded by underlying gut discomfort and motility issues
- Families often navigate complex dietary management, medication side effects, and GI specialist waitlists simultaneously
- Chronic gut pain significantly reduces quality of life and the ability to engage in therapy, school, and daily routines

🌿 HOW CHIROPRACTIC CARE HELPS

- The vagus nerve — the primary communication highway between the gut and brain — is directly influenced by upper cervical spinal health
- Thoracic spine adjustments (T5–T9) normalize nerve supply to digestive organs, supporting gastric motility and function
- Reducing sympathetic dominance allows the body to shift into parasympathetic "rest and digest" mode needed for healthy gut function
- Many families report improvements in bowel regularity, reduced bloating, and decreased GI-related distress within weeks of care
- Chiropractic care is used alongside dietary and GI support — not as a replacement — as part of a collaborative whole-body approach
- A calmer gut–brain axis contributes to improved mood, reduced pain behavior, and better nutritional engagement

The gut–brain connection is a two-way street. A healthier spine supports a healthier gut.

Brain-Gut BEFORE Gut-Brain…

- Vagus Nerve electrical stimulation potently **reduces intestinal inflammation** restoring intestinal homeostasis
- We can try all the diets in the world, but **if we are stuck on the gas pedal we will not see improvement in our gut**
- Gut health is **directly linked to our brain health** – GABA, Serotonin, food cravings, blood sugar regulation, and MORE!



Recent advances in basic science

OPEN ACCESS

The vagal innervation of the gut and immune homeostasis

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Published Online First 29 September 2012

ABSTRACT
The central nervous system interacts dynamically with the immune system to modulate inflammation through humoral and neural pathways. Recently, in animal models of sepsis, the vagus nerve (VN) has been proposed to play a crucial role in the regulation of the immune response, also referred to as the cholinergic anti-inflammatory pathway. The VN, through release of acetylcholine, dampens immune cell activation by interacting with α-7 nicotinic acetylcholine receptors. Recent evidence suggests that the vagal innervation of the gastrointestinal tract also plays a major role controlling intestinal immune activation. Indeed, VN electrical stimulation potently reduces intestinal inflammation restoring intestinal homeostasis, whereas vagotomy has the reverse effect. In this review, we will discuss the current understanding concerning the mechanisms and effects involved in the cholinergic anti-inflammatory pathway in the gastrointestinal tract. Deeper investigation on this counter-regulatory neuroimmune mechanism will provide new insights in the cross-talk between the nervous and immune system leading to the identification of new therapeutic targets to treat intestinal immune disease.

INTRODUCTION
Accumulating evidence supports the idea that an intricate communication network exists between the nervous and immune systems, and that this crosstalk could play a crucial role in the regulation of the immune response.[1] The interplay between those diverse systems occurs through a complex set of neurotransmitters, cytokines and hormones that act as counter-regulatory mechanisms able to dampen inflammation and restore homeostasis.[1 2] On a systemic level, neuroendocrine mechanisms reduce inflammation by the hypothalamic-pituitary-adrenal (HPA) axis through the anti-inflammatory effect of glucocorticoids, by the hypothalamic-pituitary-gonadal axis through sex hormones, and by the hypothalamic-pituitary-thyroid hormone axis through thyroid hormones.[3 4] Although modulation of the immune system by the nervous system, in particular the adrenergic nervous system, has been introduced decades ago,[5] interest in the role of the autonomic nervous system as a key player in immune homeostasis has recently increased exponentially. In 2000, Tracey and coworkers demonstrated that vagus nerve (VN) stimulation potently suppresses cytokine production in a rodent model of sepsis.[6] This discovery has led to the introduction of the concept of the cholinergic anti-inflammatory pathway,[7] a hard-wired connection between the immune and nervous systems closely interacting to regulate inflammation. It is currently supposed that inflammatory mediators activate sensory nerves and send signals concerning the state of the inflammation to the central nervous system. The latter, through efferent nerves, releases neuromediators that influence immune cells and modulates local inflammation.[8] Consequently, it is now clear that the nervous system is able to regulate inflammation in peripheral tissues and to restore local immune homeostasis.

In the present review, the current knowledge and the clinical implication of the intestinal cholinergic anti-inflammatory pathway will be discussed. Readers interested in the sympathetic modulation of the immune response are referred to excellent reviews on this topic.[9–11]

THE CHOLINERGIC ANTI-INFLAMMATORY PATHWAY
While studying the anti-inflammatory effect of the inhibitor of p38 MAP kinase, CNI-1493, it became clear that this compound suppressed carrageenan-induced paw oedema at doses at least 6-logs lower when injected intracerebroventricular than required for a systemic effect.[12] This potent anti-inflammatory effect was abrogated after bilateral vagotomy. Conversely, recording of the efferent VN electrical activity revealed an increase in discharge rate after infusion of CNI-1493, suggesting anti-inflammatory properties of VN activation. Similarly, electrical stimulation of the transected peripheral VN for 20 min prevented the development of an acute inflammation in response to carrageenan injection in the paw and increased survival in a model of sepsis[6] by reducing cytokine (tumor necrosis factor (TNF)) production of splenic macrophages. This anti-inflammatory effect could be reproduced in vitro using isolated human macrophage cultures; the release of TNF, interleukin (IL)-1β, IL-6 and IL-18 in response to endotoxin was significantly reduced by acetylcholine (ACh) and nicotine. In a search to pharmacologically mimic the effect of VN stimulation, Wang *et al* identified the α7 subtype of the nicotinic acetylcholine receptor (α7nAChR) as the main receptor by which splenic macrophages are modulated.[13] The anti-inflammatory effect of VN stimulation is lost in α7nAChR knockout mice, can be blocked by specific antagonists α7nAChR, and is mimicked both in vivo and in vitro by α7nAChR agonists.[13] Based on these findings, the 'cholinergic anti-inflammatory pathway' was introduced, whereby the VN modulates the immune response in the spleen providing an additional protective mechanism to the host (figure 1). This mechanism protects against the lethal effects of cytokines by restraining the magnitude of a potentially fatal peripheral immune response.[6–8]

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To cite: Matteoli G, Boeckxstaens GE. *Gut* 2013;**62**:1214–1222.

CATEGORY DEEP DIVE — WHAT FAMILIES OFTEN OBSERVE

Postural Concerns & the Nervous System

How the spine is aligned shapes how the whole body functions — and feels.

Fatigue & Pain

Compensating for poor spinal alignment exhausts core and surrounding muscles, causing fatigue, discomfort, and reduced endurance for daily activities.

Mobility Limitations

Postural misalignment restricts range of motion — making transfers, dressing, seating, and movement-based therapies more difficult and painful.

Breathing & Organ Function

Spinal curvature changes — especially thoracic kyphosis — can compress the chest cavity, reducing lung capacity and contributing to respiratory challenges.

Spinal Realignment

Targeted adjustments restore vertebral alignment, reducing compensatory strain and allowing the spine to better support the body in daily positions and activities.

Core & Stability Support

Chiropractic care combined with prescribed stabilizing exercises helps build the foundational strength that supports better posture long-term.

Collaborative Positioning

We partner with occupational and physical therapists to align care plans — ensuring seating, positioning aids, and at-home setups support spinal health.

"When the spine is supported, the whole body has a stronger foundation to build from."

Chiropractic and Posture

- After 6-months of treatment the patient displayed a total correction of the posterior thoracic translation with a significant reduction in thoracic hyperkyphosis. The dramatic correction of her overall posture and spine alignment corresponded to the significant relief of neck and back pains, headaches and improvement of various other health issues as demonstrated by self-report and SF-36.

Case Study

Treating 'slouchy' (hyperkyphosis) posture with chiropractic biophysics®: a case report utilizing a multimodal mirror image® rehabilitation program

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Abstract. [Purpose] To present a case of the non-surgical reduction of 'slouchy' hyperkyphosis posture utilizing the multimodal Chiropractic BioPhysics® rehabilitation program emphasizing the mirror image® concept. [Subject and Methods] A 27-year-old female presented suffering from neck and back pains, headaches and gait dysfunction. The patient was treated 30 times over a period of 6-months. Treatment consisted of anterior thoracic translation, thoracic extension, and head retraction exercises as well as spinal traction and spinal manipulation. [Results] After 6-months of treatment the patient displayed a total correction of the posterior thoracic translation with a significant reduction in thoracic hyperkyphosis. The dramatic correction of her overall posture and spine alignment corresponded to the significant relief of neck and back pains, headaches and improvement of various other health issues as demonstrated by self-report and SF-36. [Conclusion] Poor postures corresponding to poor health can be changed for the better with multimodal rehabilitation programs that are now showing consistent postural improvements corresponding with improvements in various health conditions. We suggest that the postural correction of those with various pain symptoms be considered as a first line non-pharmalogical, non-surgical rehabilitation approach for those presenting with poor posture.

Key words: Hyperkyphosis, Posture, Rehabilitation

Building **Long-Term Wellness**

Our goal is progress you can see and feel — at home and in the clinic.

Home Exercise Programs

Simple, caregiver-guided movements and stretches tailored to your loved one's ability level and tolerance.

Progress Tracking

We document changes in posture, sleep, behavior, and comfort so you can see the journey clearly.

Collaborative Care

We communicate with your existing team: OTs, PTs, speech therapists, and physicians for integrated support.

Flexible Maintenance Plans

Care schedules that fit your family's life — weekly, biweekly, or monthly as progress guides us.

Family Education Resources

Handouts, videos, and guides that help you understand what's changing and why.

Celebrating Milestones

Every win counts. We acknowledge and celebrate progress — no matter how small it may seem.

Frequently Asked Questions

Answers to what families ask us most.

CARE & SAFETY

Q Is chiropractic care safe for my child with IDD?

Yes. We use gentle, low-force techniques specifically adapted for individuals with sensory sensitivities and physical differences. We always start slowly and build trust before progressing.

Q What if my loved one has a meltdown?

We are **trained for this.** We stop immediately, give space, and never force continuation. We've built our entire environment to minimize triggers.

PROGRESS & COMMUNICATION

Q How soon will we see results?

Every individual is **different.** Some families notice changes in sleep or mood within weeks; structural changes take longer. We'll set realistic expectations together.

Q Do you work with nonverbal individuals?

Absolutely. We use visual schedules, caregiver communication, and careful observation of body language to guide every session safely and compassionately.

Have more questions? We welcome a **free 15-minute family consultation** before your first appointment.

EASE — Sensory-Friendly Adjustments

Gentle care that honors each individual's sensory world.

Low-Force Techniques

We use activator methods, soft-tissue work, and instrument-assisted adjustments that minimize pressure and unpredictability.

Quiet, Calm Environment

Dimmed lighting, reduced noise, and a slow-paced schedule help keep the nervous system regulated during visits.

Predictable Routines

Consistency matters. Same room, same provider, same sequence of steps — so your loved one knows what to expect every time.

Caregiver Participation

Families are always welcome in the room. Your presence is part of the care, not a disruption.

Flexible Appointment Lengths

We never rush. Sessions are scheduled generously to allow for decompression time before and after care.

Trauma-Informed Practice

Our team is trained to recognize and respond to trauma responses with patience, respect, and calm redirection.

Every visit is designed around your loved one's comfort — not a clinical checklist.

Practical Guidance for Families

What you can do before, during, and after care.

BEFORE YOUR VISIT
Prepare for a smoother experience

- Bring a list of current medications, therapies, and diagnoses.
- Note your loved one's sensory preferences and triggers.
- Prepare a familiar comfort item or fidget tool for the visit.
- Talk to your loved one about what to expect using social stories if helpful.

DURING CARE
Your presence makes all the difference

- Stay present in the room — your calm is contagious.
- Communicate any distress signals to the provider immediately.
- Allow extra processing time between steps — never rush the pace.
- Praise your loved one throughout the visit — encouragement matters.

AFTER YOUR VISIT
Support your loved one's recovery

- Allow rest time after adjustments — the nervous system is processing.
- Note any changes in mood, sleep, or movement in the hours after.
- Keep a simple wellness journal to share observations at follow-up.
- Reach out anytime with questions — we are here between visits too.

Every family is different — these are gentle guidelines, not rigid rules. We will always follow your loved one's lead.

Ready to Take the

Next Step?

Your family doesn't have to navigate this alone.
We are here to walk alongside you — from the very first question to every milestone along the way.

Schedule a Free Consultation

Call or visit our website to book your no-obligation family intake conversation.

Download Our IDD Care Guide

A family-friendly resource explaining our approach, techniques, and what to expect.

Join Our Caregiver Community

Connect with other families on the same journey through our support network.

Every individual deserves care that sees them fully. We do.

Sunlife
CHIROPRACTIC

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Monday & Wednesday: 10am to 6pm
Thursday: 2pm to 6pm
Friday: 10am to 1pm

> Tori was so inviting & lovely to work with. She took time to explain everything to me in a way that I could understand and provided great care for both me & my son.

Book Today

Intellectual and Developmental Disabilities Council of Tarrant County

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- Mike Anderson (monthly donor)

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