

# CASE STUDY

## Resolution of Chronic Constipation & Dysautonomia in a Three-Year-Old Female Following Chiropractic Care: A Case Report & Review of the Literature

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### Abstract

**Objective:** The purpose of this paper is to discuss the positive health outcomes following chiropractic management of a three-year-old child who suffered from chronic constipation.

**Clinical Features:** The patient presented for chiropractic care at age three after a full year of constipation and use of multiple chemical stimulants in order to have a bowel movement. The patient was unable to have a non-laxative induced bowel movement and after 4-5 days of without bowel movements her parents would begin giving her laxatives until it triggered a bowel movement, which was reported to be large, very firm, and an overall traumatic experience for the child. Examination included spinal thermography, postural analysis, supine leg length comparison, range of motion, static and motion palpation of her spine. The patient was diagnosed with vertebral subluxations of the cervical region with related dysautonomia.

**Intervention and Outcomes:** Diversified chiropractic adjustments were utilized to correct the cervical subluxations. After two office visits, the patient's constipation changed dramatically as she started having daily bowel movements. Within a three-month period of weekly chiropractic visits and adjustments, the patient's constipation resolved completely.

**Conclusion:** This case demonstrates the resolution of chronic constipation following chiropractic care. Further research is warranted.

**Key Words:** *Chiropractic, Diversified Technique, constipation, vertebral subluxation, adjustment, spinal manipulation, spinal thermography, vagus nerve, dysautonomia*

### Introduction

The prevalence of childhood functional constipation was recently reported to be 8-9% with little difference between males and females.<sup>1</sup> Constipation is responsible for 3% of all pediatric primary care physician visits.<sup>2</sup> Traditional medical treatment includes use of polyethylene glycol solutions, fiber supplementation, laxatives, and behavioral therapy.<sup>2</sup>

The vagus nerve is the primary nervous system control of gastrointestinal function. The vagus nerve, Cranial Nerve X,

has its origins in the medulla oblongata portion of the brainstem, then the nerve travels inferiorly through the jugular foramen to supply the entire gastrointestinal system. This nerve is responsible for peristaltic action that results in a normal bowel movement to eliminate feces.

The potential mechanism of action in this case of childhood functional constipation, is interference with the vagus nerve in the cervical region due to cervical subluxation. The literature

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finds reports of the cervical spine relationship to vagal nerve function.<sup>3-7</sup> Most often these relationships were discussed regarding surgical or traumatic events to the cervical spine and their implications on the vagus nerve. There appears to be no research that links the cervical spine condition with constipation specifically, yet there are many case reports that show alleviation of constipation with chiropractic care.<sup>8-13</sup>

Most medical literature citing constipation in children looks solely at pharmaceutical treatment to artificially stimulate peristalsis. Drug treatment will often result in increased bowel movement activity, yet the problem of poor gastrointestinal function still exists and there is potential for dependency upon the pharmacological agent. A literature review reported the results of using probiotics to alleviate constipation in children but the authors found insufficient evidence for probiotic use as a treatment for childhood constipation.<sup>14</sup> Another systematic review looked at the epidemiology of functional constipation in children and found associations with geographical location, lifestyle factors, and stressful life events.<sup>1</sup> These were associations only, not mechanisms of causation.

The body of research reveals little to no findings regarding the causes of childhood constipation and therefore treatments are only for the symptom of constipation. This case study reveals the possibility that in some cases, cervical subluxation could be the underlying cause of childhood constipation and thereby correcting the subluxation with chiropractic adjustments of the spine, could lead to a complete resolution of the condition.

## Case Report

### *History*

The patient presented with her parents for chiropractic care at age three after a full year of chronic constipation. It was reported that she would only have a bowel movement approximately every three to five days and that was usually with the aid of pharmacological agents such as laxatives and/or polyethylene glycol. Her parents reported that she would have a very difficult time passing the feces and often they were very large, indicating a potential megacolon. They stated that their child had numerous doctor's visits over the course of the year and no causal factors were found that would explain her constipation from a medical standpoint, thereby the constipation was deemed "functional".

The parents indicated that the medical guidance they received was to try special diets including a high-fiber diet and a low gluten diet, neither of which helped increase her regularity of bowel movements, as well as to use polyethylene glycol, lactulose, and laxatives.

The parents reported that her birth was a normal, vaginal birth without trauma. They reported that the child is a poor sleeper and has difficulty staying asleep. They stated she has a poor appetite and eats less than her younger sibling.

### *Examination and Diagnosis*

Postural evaluation revealed a significant forward head carriage with jutting forward of the chin. Range of motion of her spine was normal. Coordination and gait were normal. No

neurological deficits were found.

Palpation of her spine revealed poor mobility in the upper cervical spine (occiput - C2) as well as at the cervicothoracic junction (C7 - T1). Muscle hypertonicity was not found in the cervical region.

The use of paraspinal thermography to characterize cervical subluxation was utilized to track nervous system changes over time during the care period.<sup>15</sup>

Segmental thermography studies were performed at the C1 level. The initial visit revealed a large asymmetry of temperature in the C1 fossa, with the right side reading warmer by 1.3 degrees F. (Figure 1)

The diagnosis was cervical subluxation at C1-C2 and C7-T1 levels and related dysautonomia.

### *Intervention and Outcome*

This patient was adjusted on the first visit with Diversified cervical adjustments at both C2 and C7. On the second visit, two days later, the parents reported no changes to her condition. She was adjusted again with Diversified technique to C2 only. Within 10 minutes of the second adjustment, the child indicated that she had to go to the bathroom. She had a bowel movement in the office restroom, which the parent indicated was the first bowel movement she had without the use of a laxative, lactulose, or polyethylene glycol in many months.

The third visit was one week later, and the mother indicated that the child was having daily bowel movements on her own without any use of laxatives, lactulose, or polyethylene glycol.

Table 1 indicates the progression of her thermography study, showing a balancing of the C1 fossa temperatures over a seven-week period.

On the first visit, there was a significant asymmetry to her temperature in the C1 fossa, indicated by the red line on the first study. As the weeks progressed and she was receiving weekly chiropractic Diversified adjustments, the asymmetry reduced to within a normal range, as indicated by the white lines on the second and third studies.

The patient's posture changed from having forward head carriage and a jutting forward chin, to having no forward jutting of the chin and no forward head carriage. This change occurred within the first four weeks of chiropractic care.

In a three-month period, there was only one episode of constipation reported and that episode was relieved on the same day of a chiropractic adjustment.

Chiropractic adjustments of the cervical spine for three months completely resolved the condition of chronic constipation for a three-year-old child. There were no other changes made to the child's diet, lifestyle, or medical care. Solely with chiropractic adjustments, this child's bowel movement habits returned to normal after suffering for a full year with chronic constipation.

The parents also reported an increase in the child's appetite and a significant improvement in her mood that paralleled her return to daily bowel movements.

## Discussion

Chronic constipation can have a profoundly negative impact on one's health. Gut microflora size, location, and diversity has an integral relationship with gastrointestinal motility.<sup>16,17</sup> There is evidence that Small Intestinal Bacterial Overgrowth (SIBO) may have a relationship with poor gastrointestinal motility, leading to Irritable Bowel Syndrome in some people.<sup>18</sup>

Estrogen is reabsorbed in the colon. Constipation could result in a greater reuptake of estrogen with unwanted hormonal effects.<sup>19</sup> Straining during bowel movements and extended periods of time sitting on the toilet can result in hemorrhoids, rectal prolapse, and anal fissures.<sup>20</sup> Fecal impaction is also a concern with chronic constipation.<sup>21</sup>

Mood disorders are also a cause for concern in patients with chronic constipation. A 2014 study by R. Mody et al found a statistically significant association between constipation and increased risk of depression and mood disorders<sup>22</sup> and another study found an overlap between GI symptoms that included constipation with mood disorders.<sup>23</sup>

Other conditions mentioned in the literature as being associated with chronic constipation include iron deficiency anemia, hypothyroidism, neurological disorders, ulcerative colitis, and megacolon.<sup>22</sup>

Constipation adversely affects the quality of life of those afflicted with this condition. Any treatment that can fully alleviate constipation, and notably without dependence upon a pharmacological agent which reduces the symptom temporarily, warrants strong consideration.

This case report shows a distinct relationship between cervical subluxation correction with chiropractic adjustments and normalization of gastrointestinal motility. On two occasions, a chiropractic adjustment triggered the child's own natural ability to evacuate the bowels and within three months, the patient no longer had any episodes of constipation after suffering from it for a year, undergoing multiple doctor's visits related to constipation, and having to endure frequent laxative, lactulose, and polyethylene glycol use.

It's not possible to generalize this particular case to every case of constipation yet the degree of correlation between cervical subluxation correction and this child's ease of bowel movements certainly warrants further study on the topic.

Subluxation of the cervical spine could potentially interfere with the function of the vagus nerve, thereby slowing down gastrointestinal function. Further research on the correlation of cervical subluxation and its influence on the vagus nerve is also warranted.

## Conclusion

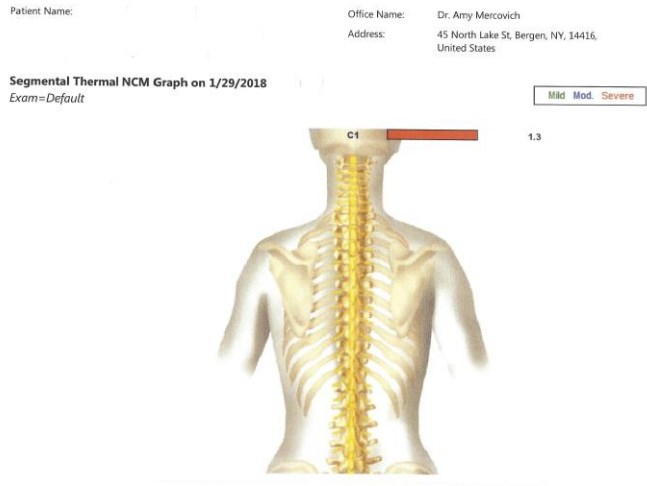
This case report provides supporting evidence on the benefits

of chiropractic care in a young patient diagnosed with chronic functional constipation. Further research is recommended to examine the effects of chiropractic care on gastrointestinal motility and vagus nerve function.

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**Figure 1:** These figures indicate the progression of her thermography study, showing a balancing of the C1 fossa temperatures over a seven-week period.