

Improvements in mood, latching, range of motion and gastrointestinal function in 3-month-old twins: A Chiropractic case report

Jacey Pryjma, Ruth Postlethwaite and Clare McIvor

Background: Two male twin infants, aged three months, presented for chiropractic assessment. Twin A presented with severe gastro-oesophageal reflux disease (GERD), laryngomalacia, cow's milk protein allergy, difficulty latching, and constipation. Twin B presented with excessive irritability, generalised neuromuscular tension, feeding difficulties associated with a residual posterior tongue-tie, positional aversion, and intolerance of tummy time. Both infants were delivered via caesarean section and demonstrated clinical findings consistent with birth-related strain patterns affecting the craniocervical junction, thoracic spine, and shoulder girdle.

Intervention: A multimodal, low-force chiropractic care plan was implemented for both infants over an initial period of eight weeks, comprising instrument-assisted spinal adjustments (Activator), baby drop-piece technique, sustained-pressure contacts, craniosacral therapy, myofascial release, and oral motor stretches. No high-velocity, low-amplitude manipulation was performed.

Outcomes: Both infants demonstrated measurable improvements across objective and subjective outcome measures. Twin A showed significant reduction in reflux frequency, improved postural tone, enhanced coordination, and progression with feeding. Twin B showed resolution of neuromuscular hypertonicity, integration of the exaggerated Moro reflex, improved cervical and shoulder range of motion, and resolution of reflux and eczema, alongside successful attainment of age-appropriate motor milestones including tummy time tolerance and rolling. Parental reports confirmed marked improvements in infant comfort, sleep, feeding, and overall disposition.

Conclusion: This case report demonstrates a role of Chiropractic care for infants presenting with complex birth-related functional and comfort concerns. Addressing underlying subluxation, including spinal, cranial, and oral biomechanical dysfunction may support improvements in neurological regulation, feeding efficiency, postural development, and quality of life. Further research is warranted.

Indexing Terms: Chiropractic; twins; developmental signposts; GERD; infant care.

Introduction

The neurological consequences of a stressful or traumatic pregnancy and birth are rarely, if ever, confined to the delivery suite. For the Chiropractor

... improvements in sleep duration and quality were noted alongside a marked reduction in crying episodes. Both reflux and eczema had resolved ...'

assessing a distressed, hypersensitive, or poorly-feeding infant, the clinical question is not whether the birth was difficult, but how the cumulative stressors of gestation and delivery have altered the infant's afferent neurological environment, and what that altered environment is doing to the developing nervous system. This case report presents twin male infants whose complex presentations, including severe reflux, feeding dysfunction, generalised neuromuscular tension, and regulatory dysregulation, are examined through that conceptual lens.



Multiple gestation pregnancies are recognised as inherently higher-risk pregnancies due to increased rates of maternal stress, prematurity, intrauterine constraint, obstetric intervention, and birth complications. (Alarfaj et al, 2025) Twin pregnancies are associated with elevated rates of caesarean section, assisted delivery, foetal distress, and low birth weight, each of which may contribute mechanical and neurophysiological stress to the neonate during critical stages of neurological development. (Abraham et al, 2023) From a developmental neuroscience perspective, the prenatal and perinatal periods represent times of exceptional neurological plasticity, where excessive nociceptive, inflammatory, mechanical, or emotional stress exposure may influence autonomic regulation, sensory processing, hypothalamic-pituitary-adrenal axis activity, and early neurodevelopmental organisation. (Thomason and Hendrix, 2024)

While these factors may lie largely outside of maternal control, the role of the chiropractor in early life is something that a parent can control. Unfortunately, chiropractic remains beset by challenges communicating these benefits to those who are not yet under care, especially with regard to infant and paediatric care. This case report discusses the chiropractic care of infant twin boys who were presented for care citing concerns with irritability, gastrointestinal reflux, latching, and other individual concerns specific to each twin.

Case details

Two male twin infants, aged three months, presented for Chiropractic assessment accompanied by their parents. Both infants had been delivered via planned caesarean section and shared a history of cow's milk protein allergy and gastro-oesophageal reflux (GERD).

Upon presentation, a thorough history and comprehensive infant examination was conducted for each twin. Assessment included spinal and peripheral range of motion, segmental spinal palpation, cranial palpation and measurement (circumference, oblique diameters, fontanelle assessment), cranial nerve assessment, peripheral and central muscle tone assessment, deep tendon and superficial reflex testing, primitive and postural reflex assessment, oral motor assessment, gross motor and developmental milestone assessment, and parental-reported stool and reflux frequency.

Twin A: Clinical findings

Global posture demonstrated a left head tilt with right head rotation. Cranial asymmetry was measured at 5 mm from oblique measurements, indicating right-sided plagiocephaly. Dural tension was minimal, most prominent at the pelvis.

Cervical range of motion demonstrated reduced extension and left lateral flexion with restricted rotation. Mid-thoracic mobility was reduced in rotation. Lumbar range of motion was restricted in extension and right lateral flexion. Right sacroiliac restriction was identified. Bilateral shoulder restriction was present, with involvement of the left sternoclavicular joint.

Peripheral muscle tone was within normal limits. Central tone demonstrated insufficiency in flexion, extension, and shoulder stability. Reflex assessment identified under-responsiveness of the left Achilles reflex; all other deep tendon reflexes were normal. Primitive reflexes were intact. Neck righting reflexes were reduced, with poor cervical stability and a forward head position noted.

Oral assessment revealed reduced lingual function graded at 4 (G4), with buccal tone estimated at 75% bilaterally.

Difficulty was noted with pull-to-sit secondary to reduced anterior cervical activation and with prone extension. Neck extension was adequate; however, shoulder stability required support.

Subluxations were identified at C0 (LAS/RPS), T4, T12, and S2.

Twin B: Clinical findings

Postural assessment demonstrated left head rotation with right head tilt. Cranial asymmetry was measured at 4 mm in oblique comparisons. A pattern of right-sided dural tension and pulling was identified. Significant cranial tension was palpated over the left frontal and right temporal regions.

Cervical range of motion demonstrated moderate to severe restriction, with flexion most significantly affected. Mid-thoracic mobility showed mild to moderate restriction, most prominent in right lateral flexion and rotation. Lumbar restriction was mild to moderate. Left pelvic restriction was identified. Peripherally, right shoulder range of motion was moderately restricted, with right tibiofibular restriction also noted. Neck extension was strained, with compensatory recruitment from the mid-thoracic region.

Cranial nerve assessment identified reduced right-sided tongue lateralisation and a diminished gag reflex, consistent with under-active vagal tone. Deep tendon and peripheral reflexes were otherwise appropriate. Muscle tone was generally good peripherally; however, central stability was reduced, with deficits in deep cervical flexor strength and shoulder girdle stability.

Prior lip and tongue releases had been performed. Residual posterior tongue tension was identified on palpation. An audible click during feeding was consistent with incomplete tongue-tip elevation secondary to residual restriction.

Primitive reflex assessment revealed asymmetry in the placing response. Postural responses demonstrated reduced left neck righting. Pull-to-sit and prone extension were effortful and asymmetrical. The Moro reflex was exaggerated. Subluxations were identified at C0 (LAS), C1, C4, T5, L3, and left sacroiliac joint (LSI).

Clinical impression

The collective findings for both infants were consistent with a significant birth-related strain pattern primarily involving the craniocervical junction, shoulder girdle, and thoracic spine, considered to reflect the cumulative effect of in-utero constraint associated with multiple gestation and the absence of the physiological birth canal transit accompanying caesarean delivery.

The identified subluxation complexes and associated neuromuscular findings were regarded as likely contributors to each twin's presentation, including feeding difficulty, visceral dysregulation, irritability, postural asymmetry, and motor developmental delay, through the mechanisms of aberrant afferent neurological input and sustained autonomic imbalance described in the introduction.

Management of Twin A

The primary aims of care for Twin A were to improve nervous system function through correction of identified subluxations, support postural tone development, and facilitate shoulder girdle strengthening in conjunction with tummy time activities. Longer-term goals included support of oral motor function and optimisation of overall health through ongoing nervous system support.

All care was delivered using low-force methods appropriate for infants under two years of age; no high-velocity, low-amplitude spinal manipulation was performed. Techniques included Activator methods with force delivered over fingertip contact, Touch and Hold sustained-pressure technique, thoracic extension lift, and baby drop-piece and seated drop-piece (speeder board - a small cushioned platform providing a gentle assisted drop to facilitate spinal correction).

Oral stretches were incorporated, comprising palatal stretch, frenulum mobilisation, buccal stretches, and tongue lateralisation exercises. Gentle cranial adjustments were applied throughout the care plan.

Referral to a specialist for formal tongue-tie assessment and surgical release was recommended, alongside referral to a lactation consultant to optimise feeding mechanics. Home care instruction included pre- and post-release oral exercises to improve tongue lateralisation and sublingual mobility, anterior cervical strengthening exercises, and submental massage to reduce local tension. Daily tummy time was encouraged to support postural development and muscle tone.

Management of Twin B

The primary aims were to optimise nervous system function through correction of identified subluxations and reduction of sympathetic activation, improve postural alignment by reducing subluxation and dural tension, and improve infant comfort and ease through reduction of neurological irritation. Longer-term goals included improved feeding efficiency and attainment of age-appropriate motor milestones.

A multimodal, low-force approach was employed; no high-velocity, low-amplitude spinal manipulation was performed. Instrument-assisted adjustments were delivered using an Activator instrument on a low-force setting, combined with baby drop-piece technique. Craniosacral therapy included sutural releases of the sagittal, coronal, and lambdoid sutures alongside specific sphenoid and palatal techniques. Myofascial release was applied to the suboccipital musculature and shoulder girdle, and sustained-pressure releases addressed residual areas of subluxation or segmental restriction.

Nutritional support included continuation of the amino acid-based formula and introduction of an infant probiotic (Biome Baby) to support gastrointestinal health. Parents were instructed in a home exercise programme comprising cervical and shoulder mobility stretches, pull-to-sit activities to develop anterior cervical flexor strength, and supported prone holds to facilitate postural extension and shoulder girdle activation.

Outcomes

Progress was monitored through objective clinical reassessment and subjective parental report at each visit. Objective measures included reassessment of spinal and peripheral range of motion, segmental palpation, peripheral and central muscle tone, cranial palpation and measurement, deep tendon, primitive, and postural reflex testing, and gross motor milestone progression. Subjective measures included parental-reported stool frequency, reflux frequency and severity, sleep quality, feeding efficiency, and general infant disposition. A formal re-examination was conducted at the twelfth visit for both infants.

Re-examinations made at seven-months were done with expectations in developmental outcomes for that of a seven-month old. So not only were they looking for improvements in their trajectory over that time, but also looking for progression and neuro-maturation expectations aligned with normal development at that age.

Twin A: Outcomes

At seven months of age, parents reported clinically meaningful improvements across multiple domains. There was a significant reduction in the frequency and severity of reflux episodes, with decreased regurgitation volume and reduced associated distress. Postural tone demonstrated progressive improvement, with enhanced coordination and balance in age-appropriate gross motor activities. Parents noted increased active movement, greater upper limb strength, and improved resilience manifest as faster recovery from fatigue and intercurrent illness. General

infant behaviour was described as improved, with a calmer and more settled demeanour. Feeding and reflux progression remained ongoing at the time of reporting.

Twin B: Outcomes

At the formal re-examination, objective clinical findings demonstrated marked improvement. Cervical and shoulder range of motion had substantially increased, and palpable neuromuscular hypertonicity had resolved throughout the assessed regions. The exaggerated Moro reflex had integrated. The infant's overall disposition had changed from persistently irritable and hypertonic to calm and content. Developmentally, tummy time was tolerated and ultimately mastered, facilitating the achievement of rolling as an age-appropriate milestone.

Parental report confirmed the infant was described as 'doing really well', 'less agitated', and a 'happy baby'. Significant improvements in sleep duration and quality were noted alongside a marked reduction in crying episodes. Both reflux and eczema had resolved. The parents expressed that they were 'very happy with the changes in a short period of time'.

Discussion

While maternal stress in a multiple gestation pregnancy, during a concurrent time of heightened life stress may have been unavoidable, bringing the infants in for Chiropractic care early on in their lives created an opportunity to interrupt these early patterns of restriction and autonomic dysregulation. How this difference may impact their development across the first year of life is largely speculative. However, given the outcomes, it is likely significant.

Both infants demonstrated examination findings consistent with birth-related strain patterns characterised by craniocervical restriction, thoracic and lumbar segmental dysfunction, cranial asymmetry, and altered neuromuscular tone, which may have contributed to their respective presentations. They also demonstrated significant improvements concurrent with Chiropractic care.

There were multiple issues at play in this case, and it should be considered that in this scenario, the Chiropractor played a role as a quasi care-coordinator who was able to bring together multiple factors in order to support the babies, and by virtue of that, the family, as a whole.

The resolution of craniocervical and thoracic subluxation findings in both infants, concurrent with improvements across feeding, sleep, visceral regulation, and motor development, is consistent with the proposed mechanism of Chiropractic: restoration of normal mechanoreceptive afferent input to the brainstem and cerebellum, with consequent reduction in central sensitisation and sympathetic facilitation, and a shift toward improved parasympathetic tone.

The crux of this case is that, when we adjust the subluxation and restore optimal neurological function, an infant's ability to rest, digest, grow and thrive may be profoundly impacted, though larger-scale research would be required in order for us to confidently claim the size and cause of this impact.

As seen in this case, Twin B's cranial nerve findings (reduced vagal tone on presentation with subsequent clinical resolution) provide a particularly illustrative example. The integration of the exaggerated Moro reflex, resolution of postural hypertonicity, and progressive attainment of motor milestones are each consistent with a nervous system moving from a state of heightened alerting into one of greater regulatory capacity and developmental readiness.

For Twin A, the relationship between subluxation correction and gastrointestinal function, including severe GERD and laryngomalacia, may have been significant and the concurrent dietary interventions may have contributed to the improvements seen alongside Chiropractic care. With this said, Chiropractic is about caring for the whole person, and that often means recommending alternative dietary approaches (within the scope of the Chiropractor's knowledge). Chiropractic care of the whole child recognises that physical, chemical and emotional stressors can have an impact on symptoms and nervous system states. Thus, our approach needs to remain holistic and serve to reduce stressors across all three categories.

The observed reduction in reflux frequency concurrent with chiropractic management is consistent with improved vagal efferent output to the lower oesophageal sphincter and gut, mediated by reduction in the craniocervical afferent load that was sustaining sympathetic dominance. The resolution of constipation similarly suggests improved parasympathetic regulation of large bowel motility.

It is important to note that, in this case, 'chiropractic management' extended beyond checking and adjusting, and it provided a rationale for multimodal care in some cases. The outcomes observed in both infants are almost certainly attributable to a combination of contributing factors, and illustrate why it is so important for Chiropractors to be able to work with other allied health professionals when the case calls for it.

For Twin A, it is likely that the lactation consultation, specialist referral for tethered oral tissue assessment, and formula optimisation each independently contributed gastrointestinal improvements. For Twin B, dietary transition to an amino acid-based formula, probiotic supplementation, and the parents' consistent engagement with the home exercise program reinforced gains in postural strength and mobility between clinic visits were all likely contributors to the improvements.

The natural process of infant neurological maturation between three and seven months of age is also to be expected, and spontaneous resolution of some functional concerns including reflux may occur in this period independently of intervention. However the associated body tension, asymmetry and immaturity that was present, is less likely to resolve without support. What we saw with this case report is not just the resolution of symptoms, but the infants catching up with age-related expectations for their development.

These cases reinforce the clinical importance of comprehensive spinal, cranial, and neurological assessment in infants presenting with functional concerns following difficult or multiple-gestation pregnancies. A Chiropractor is well positioned to identify the substrates of infant dysregulation and to offer conservative, age-appropriate intervention during a period of maximal neuroplasticity.

Conclusion

The cases also illustrate the value of integrated collaborative care: Chiropractic correction of the neurological substrate, combined with targeted co-management of dietary, oral, and postural factors, creates the conditions in which the infant's own regulatory capacity can re-emerge.

For the infant wellbeing literature more broadly, these cases highlight that the improvements most valued by parents (reduced distress, improved sleep, better feeding, a calmer temperament) may result from a neurologically grounded model of Chiropractic care that addresses underlying autonomic dysregulation.

As is the case with paediatric Chiropractic, further research is needed to better understand the mechanisms behind changes like these, as case reports are limited. Future research incorporating objective physiological measures such as heart rate variability as an index of vagal tone, alongside neurodevelopmental or blinded assessor outcome measures, would substantially strengthen the evidence base for these observations.

Ruth Postlethwaite
BBiomedSc
Writer, ASRF

Clare McIvor
BBus(Admin),
GD Comms(ProfWrit,Edit),
GD(Psych)(Cand)
Writer, ASRF

Jacey Pryjma
BChiroprSc, MChiropr, Fellow Paed Chiropr (AICE),
Advanced Paed. Chiropr (ACCP)
Private Practice of Chiropractic,
Warners Bay, NSW
jacey@childrenschiropractic.com.au

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References

Abraham, M., Ali, N., Shivani Garapati, S. S. L., Pandey, P., Nair, S., Swarna, S., Chowdary, D. V., Aladeniyi, F., Daing, A., & Abbas, K. (2023). Delivery Methods in Twin Gestations: Evaluating Outcomes, Risk Factors, and the Paradigm Shift Towards Elective Cesarean Deliveries. *Cureus*, 15(10), e46514.

Alarfaj, R. K., Alwahhabi, A., Alshalan, R., Alabdulkareem, Y., Alabdulkareem, D., & Alkharouf, F. (2025). Comparing Outcomes and Risks of Multiple Gestations: Assisted versus Spontaneous Conceptions. *International journal of women's health*, 17, 4347–4357. <https://doi.org/10.2147/IJWH.S544868>

Thomason, M. E., & Hendrix, C. L. (2024). Prenatal Stress and Maternal Role in Neurodevelopment. *Annual review of developmental psychology*, 6, 87–107. <https://doi.org/10.1146/annurev-devpsych-120321-011905>

About the Chiropractor

Dr Jacey Pryjma obtained her Bachelor of Chiropractic Science in 2005, and later her Master of Chiropractic in 2007, from Macquarie University. Jacey founded *Well Kids* in 2013, developing the *Well Kids Program*, and is now the Director of the [Australian Children's Chiropractic Centre](#) in New South Wales, Australia

About the Case Report project

This Case Report is a part of the [ASRF Case Report Project](#), a project designed to gather client studies from chiropractors and transform them into much-needed case reports, focused on the effects of chiropractic care on clinical presentations highly relevant to chiropractic, such as stress, immunity and adaptability. This project was made possible by the generous fundraising and contributions of ASRF supporters.

