

Reversal of severe spinal ligament instability as well a Mercury and Arsenic toxicity leading to an improvement of emotional and neurological regulation, as well as muscle control in a 42-year old male with cerebral palsy: A case report

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Background: A 42-year-old male presented for Chiropractic care with primary complaints of severe episodic dizziness and 'blackouts'. He also reported current and past medical history of cerebral palsy and hypertension.

Intervention: The patient commenced a course of concentrated Chiropractic care using the Averio Functional Neurological Technique. He eventually completed four separate weeks of concentrated care.

Outcomes: The patient was able to achieve dramatic results, with a reversal of severed spinal ligament instability, emotional wellbeing, and muscle control, concurrent with significant reductions in arsenic and mercury toxicity.

Conclusion: Further research examining how optimal neurological function, enabled through gentle, concentrated, subluxation-based Chiropractic care, may influence heavy mental toxicity and mood is warranted

Indexing Terms: Chiropractic; subluxation; episodic dizziness; blackouts; heavy metal toxicity; arsenic; mercury; well-being.

Introduction

Cerebral palsy (CP) is a group of permanent neurological disorders caused by non-progressive damage to the developing brain, often occurring before, during, or shortly after birth. It primarily affects motor function, coordination, and posture, with secondary effects on balance, sensory

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processing, and cognition. (1) While muscle spasticity often takes precedence in conversations regarding CP, patients with CP frequently present with deficits in vestibular function, which play a critical role in spatial orientation, balance, and motor control. (2) These deficits can contribute to challenges with movement and daily activities, as well as increase the risk of falls and injury.



The vestibular system has direct connections to the spine and postural control mechanisms through complex neural pathways. Dysfunction in this system may result in altered proprioceptive input and compensatory changes in movement patterns. (3) Chiropractic care, with its focus on checking and adjusting for subluxations, provides vital nervous system care that removes interference that impairs optimal neurological function and proprioception. It has been proposed that improving spinal alignment and mobility may enhance afferent input to the central nervous system, potentially supporting neuroplasticity and improving vestibular integration. (4, 5)

Given the evidence we have seen emerge in recent Chiropractic research and case reports, Chiropractic care may also support improvements in mood and quality of life through its effects on movement and exercise participation. (6 - 10) Additionally, regular exercise is well-documented to have positive effects on mental health, including reductions in symptoms of depression and anxiety, through mechanisms involving neurochemical changes, increased neurotrophic factors, and improved stress regulation. (11) For individuals with CP, the combination of improved function through chiropractic care and the mental health benefits of increased physical activity may represent a synergistic pathway for enhancing overall wellbeing.

While research on chiropractic care in individuals with CP is limited, emerging case reports suggest potential benefits for motor control, postural stability, and overall quality of life. (12) Improvements observed in these reports are thought to be mediated by changes in sensorimotor integration and cortical processing following adjustments. This case report adds to the growing body of literature by examining the role of subluxation-based chiropractic care in addressing vestibular dysfunction in a patient with cerebral palsy, highlighting possible mechanisms and outcomes that warrant further investigation.

Case details

A 42-year-old male presented for Chiropractic care with primary complaints of severe episodic dizziness and 'blackouts'. He also reported current and past medical history of cerebral palsy and hypertension. He was a nutritional therapist (who had previously held a manual labour job) who reported moderate to high levels of physical activity. He was an irregular Chiropractic patient but had done a prior week-long course of Averio Health Institutes Concentrated Care program in 2015. At the time of his first presentation, in 2015 (approximately six years prior), he reported with severe depression, including suicidal ideation, and a medical diagnosis of cerebral palsy. At that time, he could barely walk unassisted and had severe abnormal twisting of both of his legs. Following his initial Averio weeklong program, he could walk again, for several miles, without pain and/or assistance. He also noted a significant improvement to his depression symptoms following that weeklong program.

The patient re-presented at Averio Health Institute in 2021 after he started to have episodes of blacking out and severe dizziness. The patient reported that he had experienced these episodes since he was in his mid-twenties but that the episodes were getting much worse and much closer together. The patient further noted that he was experiencing memory loss, in which he would forget where he was or what he was doing, and episodes of loss of speech. The patient reported

that he had a history of smoking and had experienced extended periods of mental and emotional stress and abuse.

At the time of his 2021 presentation, he reported that this activity level included two hours of active work-outs a day, five to six times per week and that his job required him to lift fifty pounds 23kg regularly. Additionally, he reported a history of three motor vehicle accidents, and sports injuries resulting in multiple ankle sprains. He reported recreational pursuits including skiing/snowboarding, horseback riding, and martial arts participation. He also reported past tobacco, marijuana, and alcohol use.

While his primary complaints were related to his hypertension, cerebral palsy, dizziness and blackouts, the patient also reported significant secondary complaints. These included cognitive degeneration, memory loss, mid-and-lower back pain, depression and hypertension.

Clinical findings

Upon presentation, a full examination was undertaken including radiographs, blood panels and subluxation findings. Program testing includes pre and post-spinal EMG, body composition testing, modified CTSIB (brain testing), bilateral blood pressure, bilateral weight testing, bilateral pulse oxygen, breath test, salivary nitrogen oxide test, patient-reported symptom analysis, and post-spinal radiographic review.

Other measures used in this case included pre and post-analysed spinal radiographs, pre and post provoked urinalysis for stored toxicity burden, and functional blood labs.

Multiple subluxations were located in joints of the cervical and lumbar regions as well as multiple areas of the thoracic spine. Severe motion and alignment abnormalities were detected in all three regions of the spine including severe spinal ligament instability, of which the full findings are noted below.

Numerous notable radiographic findings were found: severe cervical and thoracic ligament instability, Degenerative Joint Disease and Degenerative Disc Disease between C4-C7, enlargement of the heart noted on digital radiograph with abnormal calcium nodules (five noted) in the right lung field where the heart enlargement was noted, and abnormal hip and lumbar alignments were noted on Anterior-to-posterior film with a rotation in the pelvis and lateral tilt in the lumbar spine.

Clinical note

It is reasonable to note that there is a connection between spinal ligament instability and degenerative disc disease as noted by the following scientific literature. It is reasonable to assume that the abnormal motion created by spinal ligament damage caused abnormal inflammatory processing in that area of the spine and led to advanced aging and tissue breakdown as a result.

All radiographs were taken digitally and analysed via computer software by a licensed Doctor of Chiropractic with reports generated to show areas of ligament instability.

Initial Spinal Ligament Instability Findings:

- C2-C3: 3.6mm translational ligament instability
- C2-C3: -17.5° extension RRA, wedging instability
- C3-C4: 4.3mm translational ligament instability
- C3-C4: -12.3° extension RRA, wedging instability
- C4-C5 15.9° flexion wedging instability
- C4-C5: -16.4degrees RRA, extension wedging instability
- C6-C7: 4.9mm translational ligament instability
- C6-C7: -21.4 extension RRA, wedging instability
- C6-C7: 28.6 angular excursion
- C6-C: -4.9mm extension translational instability

Ten areas of cervical ligament instability are rateable for an impairment rating of 25-28% whole body impairment on a DRE IV American Medical Association impairment scale. This is diagnosable as severe, permanent spinal injury by more doctors and neurosurgeons and it is likely that this patient had a surgical option to fuse parts or the entirety of his cervical spine. In addition to the extensive cervical injuries notes the patient also had areas of instability in his upper thoracic spine noted as such.

- T1-T2: 3.1mm translational ligament instability
- T2-T3: -2.9mm translational ligament instability
- T9-T10: -6.1mm translational ligament instability

In total, thirteen areas of spinal ligament instability were found. This is of importance for clinical decision making around the most appropriate clinical management. The finding of this amount of extensive ligament instability also needs to be taken as a cautionary finding as not all Chiropractic technique would be appropriate or helpful in this case.

The use of high velocity Chiropractic manipulations could be irritating or potentially dangerous to a patient with this type of spinal damage. It is very reasonable to consider that patients who do not respond well or have aggressive symptomatic reactions to traditional Chiropractic care likely have some type of underlying ligament instability and therefore the need for more gentle and specific chiropractic management.

Additionally, this patient presented with the following objective findings:

- high blood pressure, with a reading of 166/111
- heavy metal toxicity to arsenic and mercury
- high urinary creatine indicating kidney dysfunction and failure
- stage two hypertension

Management

Following examination the patient commenced Chiropractic care under the Averio Functional Neurological adjusting technique with multiple concentrated chiropractic care weeklong programs. During the patient's first weeklong program, 67 Chiropractic adjustments were delivered. Additional care recommendations under this protocol, and due to his specific test results included:

- Whole food, anti-inflammatory diet recommendations
- Spinal and neurological exercises
- Active and passive motion therapies
- Hot and cold therapies include ice massage, hot water/cold plunge, and contrast therapy
- Photobiomodulation class 2 laser protocols
- Nutritional therapy protocols include whole food and minimally processed supplementation. and
- Fascial blaster protocols used to release fascial scarring due to long-term abnormal inflammatory changes in soft tissues.

It was recommended that the patient undertake an Averio weeklong program every 3 months until his spinal damage was reversed or changed to as normal as possible. Customised nutritional protocols were prescribed to remove the patient's abnormal toxicity burden, support neurological repair and reverse nutritional deficiencies. While primary areas of focus were the patient's cervical and upper thoracic spine, subluxation-based Chiropractic care was deployed wherever subluxation was detected using the Averio FNT methods of analysis of the spine as well as various methods from other specific Chiropractic techniques.

The aims of care were to reverse subluxation in his cervical spine to the point where the body regenerated the torn and unstable areas of his neck and mid-back and returned the patient's spinal structure to as close to normal as possible, allowing for more normal regulation of the patient's brain and central nervous system and the whole system's benefits that result from the more normal function of the central nervous system.

Outcomes

Following four Averio weeklong programs over fourteen months, marked and significant improvements were noted. These were noted according to standard Averio program testing which included pre and post-spinal EMG, body composition testing, modified CTSIB (brain testing), bilateral blood pressure, bilateral weight testing, bilateral pulse oxygen, breath test, salivary nitrogen oxide test, patient-reported symptom analysis, and post-spinal radiographic review. Other measures used in this case included pre and post-analysed spinal radiographs, blood analysis, and provoked urine analysis.

The results were significant and, as reported by the patient as *'life changing'*.

Radiographic improvements

All transitional ligament tears in the neck and mid-back had been non-surgically reversed concomitant with Chiropractic care. The patient still presented with wedging instability at C2-C3, C3-C4, and C4-C5 at the end of this reporting period. This totals a change from thirteen diagnosed areas of spinal ligament instability to three. This patient is no longer a candidate for surgical intervention.

These results also illuminate the necessity and clinical relevance of specific, gentle, low-force concentrated Chiropractic care in the reversal of spinal ligament instability. These results create a basis for examination of concentrated Chiropractic care prior to surgical modification as concentrated chiropractic care has no longer term injury to mechanoreception, proprioception and risk of adjacent segmental damage and advanced degeneration. (13, 14, 15, 16)

Brain function

Notable changes in brain function were observed with a specific change in vestibular function on a modified CTSIB. There was a 41% improvement in vestibular function showing a path change from 92 to 61 on digital modified CTSIB.

Toxicity

There was a notable change in overall toxicity status as noted on a provoked urinalysis.

At the commencement of the patient's first week of care, he had returned numerous abnormal results. Ninety-six heavy metals tested positive on provoked urinalysis and findings showed high (>95th percentile) Arsenic (noted at 105.08ug/g with Arsenic showing a safety limit of 11.9ug/g).

Another notable abnormal finding was Mercury, which was noted at 0.82ug/g, or at the >75-95th percentile. Mercury has a safety limit of 0.57ug/g.

Butulparaben was also above its safety limit of 0.25ug/g, having tested at 0.37ug/g. Urinary creatine tested at 2.74, which is an abnormally high finding (with a normal range noted at 0.24-2.16).

First review

Following the first review, only 20 heavy metals now tested positive on provoked urinalysis. Mercury had slightly reduced, to 0.71ug/g (with a safety limit of 0.57ug/g). Urinary creatine was noted at 3.06 which was still abnormally high.

Second week of care

Twenty heavy metals tested on provoked urinalysis and findings showed high (>95th percentile) Arsenic noted at 87.53ug/g with a safety limit of 11.9ug/g as well as a moderate (>75th - 95th percentile) Mercury result testing at 0.77ug/g with a safety limit noted at 0.57ug/g. Urinary creatine was now noted as within normal limits.

Third week of care

Twenty heavy metals tested on provoked urinalysis and finding showed no markers outside of normal reference range for toxicity. However, urinary creatine remained high at 2.86.

Fourth week of care

All toxicity markers were now within normal limits. Urinary Creatine returned a change from 2.86 (high, abnormal finding) to 0.99 (within normal limits). Objective measures also confirmed that his hypertension had reduced from stage two to stage one, and his blood oxygen improved in all fingers on both right and left hands.

The patient reported that he was no longer in any pain while standing, moving, or stretching. He also reported that he no longer felt pain in his feet even when walking barefoot outdoors on small rocks and uneven surfaces. He was able to achieve improvements in the gym, with significant strength increases, and reported greater muscle control and improved flexibility in his lower extremities.

Significantly, he reported no remaining depression symptoms and a complete cessation of suicidal ideation. These contributed to significant improvements in both his relationship and professional life. It goes without saying, that resolution of suicidal ideation alone was a significant positive outcome.

Discussion

This case represents one of those remarkable Chiropractic experiences that demonstrates the profound impact subluxation-based Chiropractic care can have on a person's life. The young man initially presented with cerebral palsy, severe mobility challenges, and deep emotional distress, including suicidal ideation.

After his first week of care, the change was marked; he went from struggling to walk to moving with relative ease, a transformation that astonished his family, medical providers, and even prompted inquiries from the local medical community.

What occurred at this time was typical: the patient quit care.

Due to generations of manipulative medical marketing the population has been trained to view medical doctors as primary care and a necessity to the journey of life, whereas Chiropractors are assigned a professional scope including neck, back pain and headaches.

Chiropractors however appreciate that the adjustment has a profound impact on the overall function of the nervous system and is therefore appropriate in all cases of disease and

dysfunction to assist the patient reach maximum outcomes. However our care often only holds a patient's commitment while they are symptomatic.

This is a failing strategy, noted with detail in this case because while the patient remarked on their significant symptomatic change following his first weeklong program, there was still objective abnormalities that had not been addressed, most notably severe spinal ligament instability, abnormal spinal alignment, heavy metal toxicity, vestibular brain damage to name a few. These objective damages continued in the patient's body and eventually led to the presentation of increased and new symptomatology.

One of the primary lessons learned from this case is that Chiropractic care must be objective, based on pre and post test results as the patient's symptomatic changes and improvements will likely be noticeable before the objective changes indicating sustainable positive healthcare outcomes.

While the initial response was dramatic, this case underscores that symptom relief is not the same as correction. It is common for Chiropractors to see patients experience rapid improvements in pain, mobility, or function, sometimes leading them to discontinue care prematurely. However, without addressing the underlying subluxations and neurological dysfunction, symptoms are likely to return.

This case highlights why objective testing is essential. By using measurable indicators rather than relying solely on how the patient feels, both the Chiropractor and the patient gain a clearer understanding of true progress and long-term stability.

This patient's journey reflects this principle. Although he initially experienced dramatic symptomatic relief, he later returned to care when his health declined, providing an opportunity to educate him further about the importance of full correction and ongoing spinal health. Objective testing allowed for structured care planning and consistent communication, fostering trust and clarity while reducing stress for both clinician and patient.

Conclusion

While this case is a single example and therefore limited in its ability to be generalised, it highlights the potential for concentrated Chiropractic care to produce transformative outcomes. Future clinical trials with larger cohorts are needed to better understand these effects. Notably, this young man's experience inspired him to begin his prerequisites to study Chiropractic, a testament to the life-changing nature of his care and his desire to help others experience similar healing.

Evidence context

This descriptive study is an observational design and is limited as an n of 1 report, lacking controls. The effect of potential confounding factors, including comorbidities, cannot be excluded. We recognise that subluxation identification and correction and the concentrated application of the Averio Functional Neurological Technique are the arts of the individual treating Chiropractors.

The findings could support the clinically relevant hypothesis that the identification and correction of subluxation using the concentrated care approach of the Averio Functional Neurological Technique are modifiable contributors to the effective management of the clinical presentation of severe episodic dizziness and ‘blackouts’ with a past medical history of cerebral palsy and hypertension.

This report is eligible for inclusion as ‘expertise’ bringing clinical insights into the JBI FAME evidential ring (17) to inform evidence-based healthcare in general and the science of Chiropractic in particular. Of note is the quantified reduction in arsenic and mercury toxicity.

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[#KotlermanMercuryArsenicToxicity](#)

References

1. Rosenbaum, P., Paneth, N., Leviton, A., Goldstein, M., Bax, M., Damiano, D., & Jacobsson, B. (2007). A report: The definition and classification of cerebral palsy April 2006. *Developmental Medicine & Child Neurology. Supplement*, 109, 8-14.
2. Casagrande Conti, L., Ferri, N., Manzari, L., et al. (2025). Vestibulo-oculomotor reflex dysfunction in children with cerebral palsy correlates with GMFCS. *Audiology Research*, 15(2), 21. <https://doi.org/10.3390/audiolres15020021>
3. Horak, F. B., & Macpherson, J. M. (2011). Postural orientation and equilibrium. In J. M. Winters & P. E. Crago (Eds.), *Biomechanics and neural control of posture and movement* (pp. 13-36). Springer.
4. Pickar, J. G. (2002). Neurophysiological effects of spinal manipulation. *The Spine Journal*, 2(5), 357-371. [https://doi.org/10.1016/S1529-9430\(02\)00400-X](https://doi.org/10.1016/S1529-9430(02)00400-X)
5. Haavik, H., & Murphy, B. (2012). The role of spinal manipulation in addressing disordered sensorimotor integration and altered motor control. *Journal of Electromyography and Kinesiology*, 22(5), 768-776. <https://doi.org/10.1016/j.jelekin.2012.02.012>

6. Haavik, H., Niazi, I.K., Amjad, I., Kumari, N., Ghani, U., Ashfaq, M., Rashid, U., Navid, M.S., Kamavuako, E.N., Pujari, A.N., et al. Neuroplastic Responses to Chiropractic Care: Broad Impacts on Pain, Mood, Sleep, and Quality of Life. *Brain Sci.* 2024, 14, 1124.
7. Steinberg B, Clodgo-Gorden K, Postlethwaite R, Mclvor C. Improved mental clarity, balance, and digestive function, and normalised gait in 63-year-old female under chiropractic care: A case report. *Asia-Pac Chiropr J.* 2023;4.2. URL apcj.net/papers-issue-4-2/#SteinbergAdaptability
8. Seaman R, Postlethwaite R, Mclvor C. Improvement in self-reported Mental Processing and Quality of Life in a 74-year old male concomitant with Chiropractic care for LBP: A case report. *Asia-Pac Chiropr J.* 2023;3.4. URL apcj.net/Papers-Issue-3-4/#SeamanMentalProcessing
9. Croke O, Postlethwaite R, Mclvor C. Improvement in Forward-Head posture, Mental Health and Erectile Function in a 42-Year-Old Male under Chiropractic care: A case report. *Asia-Pac Chiropr J.* 2023;3.4. URL apcj.net/Papers-Issue-3-4/#CrokeErectileDysfunction
10. Seaman R, Postlethwaite R, Mclvor C. Improved Mental Health and Quality of Life in a 51-Year-Old Male under Chiropractic care: A Case Report. *Asia-Pac Chiropr J.* 2023;3.4. URL apcj.net/Papers-Issue-3-4/#SeamanMentalHealth
11. Mikkelsen, K., Stojanovska, L., Polenakovic, M., Bosevski, M., & Apostolopoulos, V. (2017). Exercise and mental health. *Maturitas*, 106, 48-56. <https://doi.org/10.1016/j.maturitas.2017.09.003>
12. Holt, K., Russell, D., & Haavik, H. (2021). Improvements in motor control following chiropractic care in a young child with cerebral palsy: A case report. *Journal of Contemporary Chiropractic*, 4, 42-48.
13. Virk SS, Niedermeier S, Yu E, Khan SN. Adjacent segment disease. *Orthopedics.* 2014 Aug;37(8):547-55. doi: 10.3928/01477447-20140728-08. PMID: 25102498.
14. Margetis K, Dowling TJ. Cervical Degenerative Disc Disease. 2025 Aug 2. In: *StatPearls* (Internet). Treasure Island (FL): StatPearls Publishing; 2025 Jan-. PMID: 32809607.
15. Chen LH, Lai PL, Tai CL, Niu CC, Fu TS, Chen WJ. The effect of interspinous ligament integrity on adjacent segment instability after lumbar instrumentation and laminectomy--an experimental study in porcine model. *Biomed Mater Eng.* 2006;16(4):261-7. PMID: 16971744.
16. Godolias P, Plümer J, Cibura C, Gerstmeyer J, Heep H, Dudda M, Pierre C, Schildhauer TA, Oskouian RJ, Chapman J. The Importance of Preserving the Posterior Ligament Complex in Elective Lumbar Fusion Surgery: Early Results from a Single-Center Experience. *Cureus.* 2024 Dec 23;16(12):e76252. doi: 10.7759/cureus.76252. PMID: 39845237; PMCID: PMC11753805.
17. 7.2.2. Descriptive study designs. *JBIManual for Evidence Synthesis.* 2024 edition. At <https://jbi-global-wiki.refined.site/space/MANUAL/355598734/7.2.2.+Descriptive+study+designs>

Declarations

Patient consent was documented and is held by the lead Author.

All data with appropriate clinical commentary were provided by the lead author.

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 valuable project is made possible by the generous fundraising and contributions of ASRF supporters. We appreciate you.

ASRF definition of subluxation

'A vertebral subluxation is a diminished state of being, comprising a state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability.'

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Also by Dr Kotlerman

Kotlerman S, Martin A, Clark J, Dhaliwal A, Postlethwaite R, Mclvor C. Improvement in thoracic alignment and bone density in a 65-year-old female with six compression fractures and severe osteoporosis following two weeks of concentrated chiropractic care: A case report. *Asia-Pac Chiropr J.* 2026;6.3. www.apcj.net/Papers-Issue-6-3/#KotlermanOsteoporosis

Kotlerman S, Martin A, Clark J, Dhaliwal A, Postlethwaite R, Mclvor C. Reversal of cervical spinal ligament instabilities and severe abnormal cervical spine alignment in concurrence with improved sleep, pain, and mental and emotional function in a 44-year-old male with chronic Major Depression Symptoms: A case report. *Asia-Pac Chiropr J.* 2025;6.2. www.apcj.net/Papers-Issue-6-2/#KotlermanDepression

Kotlerman S, Martin A, Dhaliwal A, Clark J, Scheunemann Z, Postlethwaite R, Mclvor C. Improvement in Atrial Fibrillation, Vision, Blood Pressure, and Energy in an 80-year-old male under Chiropractic care: A case report. *Asia-Pac Chiropr J.* 2025;6.1. www.apcj.net/Papers-Issue-6-1/#KotlermanAFib

Kotlerman S, Martin A, Pierce D, Postlethwaite R, Mclvor C. Improvement in Hemiplegic Migraines, Drop Seizures, Sleep, and Quality of Life in a 23-year-old female undergoing concentrated Chiropractic care: A case report. *Asia-Pac Chiropr J.* 2024;5.2. apcj.net/Papers-Issue-5-2/#KotlermanAnxiety

Kotlerman S, Martin A, Pierce D, Postlethwaite R, Mclvor C. Improvements in anxiety and suicidal ideation in a 14-year-old female undergoing a concentrated program of Chiropractic care. *Asia-Pac Chiropr J.* 2024;5.1. apcj.net/Papers-Issue-5-1/#Kotlermananxiety

Kotlerman S, Martin A, Carter M, Postlethwaite R, Mclvor C. Improvement in sleep, mental health, heavy metal toxicity and adaptability concomitant with Chiropractic care in a 47-year-old female cancer-patient undergoing chemotherapy: A Case Report. *Asia-Pac Chiropr J.* 2024;4.4. apcj.net/Papers-Issue-4-4/#AverioChemotherapy

Kotlerman S, Martin A, Postlethwaite R, Mclvor C. Chiropractic Management of an 18-year old female with lupus: A Case Report. *Asia-Pac Chiropr J.* 2021;2.3. URL apcj.net/paper-issue-2-5/#AverioLupus

Kotlerman S, Martin A, Postlethwaite R, Mclvor C. Improvement in memory, balance and hearing in a 91-year-old male under chiropractic care: A Case Report. *Asia-Pac Chiropr J.* 2021;2.6. URL apcj.net/papers-issue-2-6/#AverioMemory

Mclvor C, Postlethwaite R, Kotlerman S, Martin A. Depression, ligament Instability and chronic pain improvement concomitant with a course of concentrated Chiropractic Care: A Case Report. *Asia-Pac Chiropr J.* 2023;3.3 URL apcj.net/Papers-Issue-3-3/#AverioDepressionChronicPain

Mclvor C, Postlethwaite R, Martin A, Kotlerman S. Improved fertility outcomes following multiple IVF failures in a patient with Chronic Fatigue Syndrome and Hashimoto's Disease: A Case Report. *Asia-Pac Chiropr J.* 2023;4.1 URL apcj.net/Papers-Issue-4-1/#AverioHashimoto

Kotlerman S, Martin A, Carter M, Postlethwaite R, Mclvor C. Reversal of Cervical Artery Stenosis and improvement in physical functioning in a 78-year-old stroke survivor under concentrated Chiropractic care: A Case Report. *Asia-Pac Chiropr J.* 2024;4.3. apcj.net/Papers-Issue-4-3/#AverioStenosisReversal

