

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

Sarah Kotlerman, Avery Martin, Douglas Pearce, Ruth Postlethwaite and Clare McIvor

Background: A 47-year-old female patient with stage four breast cancer and lymphatic involvement, as well as several secondary physical complaints and psychological stressors, presented for chiropractic care following six sessions of chemotherapy. This was her second bout with cancer, having survived Hodgkins Lymphoma.

Intervention: The patient underwent three, five-day courses of concentrated chiropractic care with complementary care modalities, in addition to her oncological treatment plan.

Outcomes: The patient was able to achieve full remission of her cancer as well as marked improvements in sleep, mental health, and physical adaptability.

Conclusion: This case report provides an impetus for further investigations into chiropractic care and cancer, especially heavy metal toxicity, cancer, and chiropractic care.

Indexing Terms: Chiropractic; Subluxation; breast cancer; Hodgkin's lymphoma; concentrated care; Quality of Life.

Introduction

A cancer diagnosis is known to be a life-interrupting diagnosis that may bring a high level of psychological and physical stress. Increasingly, research is highlighting how decreased levels of nervous system adaptability (as indicated by decreased heart rate variability) often accompany cancer. Whether this is causal to cancer or reactive to harsh but potentially life-saving treatment is less clear. (1)

Current research has examined complementary and alternative therapies in the treatment and support of cancer patient's primary or secondary symptoms. Myofascial release technique has been successfully used during

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rehabilitation following a double mastectomy, with symptoms decreasing after one treatment. (2, 3) A systematic review and meta-analysis found that manual therapy techniques involving myofascial techniques decreased chronic musculoskeletal pain in the upper body of breast cancer survivors. (4)

Additionally, case report data has supported chiropractic care in support of cancer survivors or patients. One case report followed the management of a patient struggling with infertility following ovarian cancer and treatment. Chiropractic care was suggested to have contributed to the patient's natural conception after two years of infertility. (5) A previous case report from the ASRF examined improved mental health and quality of life in someone receiving treatment for prostate cancer concomitant with chiropractic care. (15)

Several previous case reports have detailed patient's journeys from presentation to diagnosis, following a thorough examination of the individual and their history. (6-13, 16) All of the cases reported patients presenting with complaints of pain in various areas of the body that led to the eventual cancer diagnosis.

Case details

A 47-year-old female presented for chiropractic care. She had multiple health concerns and environmental stressors, the most pressing of which was a diagnosis of stage four bilateral breast cancer with lymphatic involvement, for which she was undergoing treatment at the time of her presentation for concentrated Chiropractic care. Her diagnosis was received two months before her presentation for concentrated Chiropractic care.

The patient, who had limited experience with Chiropractic, was working in sales administration and reported a low level of physical activity.

At the time of the initial consultation, a thorough history and examination were undertaken. The patient reported a history of skiing/snowboarding. The patient reported radiation treatments in 1993 over her chest, neck, and stomach for Hodgkin's lymphoma (the patient was 18 years of age at the time). The patient also reported having a lymphadenectomy following radiation treatments. She had a history of marijuana use and occasionally used Tylenol and Non-Steroidal Anti-Inflammatory Drugs.

She had a full vaccination schedule, including two mRNA Pfizer COVID-19 serums and one booster prior to her diagnosis. Her significant medical complaints at the time of her presentation included stage four breast cancer and a recent history of Hodgkin's Lymphoma. There was some question as to whether this was still active at the beginning of the case due to the cancer being in the lymph.

Secondary complaints included weight gain, TMJ (Temporomandibular joint) pain, ocular migraines, and shoulder and jaw pain. Additionally, the patient presented with a stomach ulcer post-chemotherapy. This occurred between the second and third weeks of her chiropractic care programs. The ulcer was successfully reversed with a whole-food nutritional plan and referral for outpatient (non-Averio) chiropractic care.

Significant stressors were present in the patient's life at the time of presentation. In addition to cancer and additional health challenges, the patient reported that she was going through a highly challenging time mentally and emotionally, as she was the primary caregiver to her mother who was suffering from dementia. The patient was also experiencing a divorce and overall stress brought on by the instability she attributed to the COVID era.

Clinical Findings

The patient's clinical examination included a subjective questionnaire, radiographs, body composition assessments, and a battery of clinical tests.

Her subjective questionnaire included patient reports that her body stress levels were at 10 out of 10 on a numerical scale. She reported that approximately 60% of her thoughts were negative and that she felt anxiety 50% of the day. She further reported that she experienced head pain three days per week with brain fog and memory loss one to two times per month.

She reported having one bowel movement every two days and had difficulty sweating. She consumed dietary animal protein daily.

Radiographs were taken and analysed. These revealed an 85.2% loss of normal cervical curve and an AHC of 39.2mm (whereby normal is 0mm). Wedging cervical ligament instability was noted at C2-C3 and C4-C5. A grade one spondylolisthesis was noted at L3-L4.

Body Composition Testing revealed low water content. The results returned at 41.3% where normal levels would be between 50 and 60%. Her breath assessment was high breath rate, with a level of 18 where the normal level would be between 8 and 12. Brain function and metabolic age testing also returned abnormal results.

Provoked Urinalysis of Heavy Metals and Environmental Toxicity tests revealed severely high levels of Gadolinium, Platinum, Thorium, Tungsten, and DEP. Secondary toxicities of DMDTP, Atrazine mercapturate, and BPA were also detected.

Full spine subluxation listings were identified, with a focus on the cervical spine and the C-T junction.

Management

Following her initial consultation, the patient commenced Chiropractic care according to the *Averio Functional Neurological Technique* and concentrated mode of care. This was in addition to her traditional oncological treatment for cancer. The concentrated Chiropractic care program took place in three, five-day programs over nine months.

Her care was focused on removing as much neurological dysfunction as possible by adjusting subluxations in the spinal system. Specific areas of focus included the following:

1. Cervical spine and CT junction.
2. Heavy metal and environmental toxins.
3. At-home strategies for removing sympathetic triggers and inflammatory habits.

Additional care recommendations included class two photobiomodulation, brain tap brain wave therapy, nutritional therapy, chelation and detoxification therapy, bodywork, active release therapy, cryotherapy, education on Chiropractic/neurology/plant-based food/inflammation, lymphatic drainage, passive and active motion therapies.

The patient was seen for three Averio weeklong programs in July 2022, November 2022, and March 2023.

The primary aims of care were to reverse the inflammatory environment (neurological and toxicity related) that may have contributed to an environment in which cancer mutations could thrive. This was to be achieved by repairing the abnormal spinal alignment and dysfunctions and removing heavy metal and environmental toxicity.

The secondary aims of care were to create an environment where autonomic nervous system regulation could be better supported, where the patient could be heard and feel safe despite her medical prognosis. This was particularly important given her stress levels and the fact the patient had several small children, family obligations, and psychological and physical stress due to the aggressive surgical and drug treatments recommended by her medical professionals and her family members.

Outcomes

The patient started six rounds of chemotherapy before her first weeklong Chiropractic care program. She was scheduled to have a double mastectomy following this. The patient was nauseous, weak, depressed, and anxious during the first weeklong program in July of 2022.

During this time, it was noted that there was a correlation between the cancer diagnosis and toxicity readings. Following the first weeklong program, it was highly recommended that the patient pursue a urinalysis to test for the presence of heavy metals and/or environmental toxins. It was here that the patient tested with high levels of Gadolinium, Platinum, Thorium, Tungsten, DEP, DMDTP, Atrazine mercapturic, and BPA. The patient was then recommended a customised detoxification and chelation protocol to start immediately.

The patient complied with chemotherapy rounds two, three, and four and decided following the fourth round not to continue with treatment. She was declared in complete remission following her fourth weeklong program. The patient had undergone two rounds of customised detoxification using whole food supplementation and has seen significant reductions in heavy metal and environmental toxicities.

Objective changes observed at follow-up testing included the following:

- ▶ Reversal of stage 4 cancer diagnosis
- ▶ A 175.8% improvement in the cervical curve (from -6.2° to -17.1°)
- ▶ A 59.6% improvement in the thoracic curve (now reading as normal)
- ▶ 37.1% improvement in the lumbar spine (position between the rib cage and lumbar spine from 11.6mm to 7.3mm - 0mm is normal) and reversal of L3-L4 spondylolisthesis (64.19 at L3-L4)
- ▶ Shoulder muscle tension dropped from the level of C5 to the level of C7 (change is visible on Lat C)
- ▶ Significant improvement in throat shadow (significantly reduced on an initial radiograph, normal on follow-up)
- ▶ Body composition water levels changed from 41.3% to 47.3%
- ▶ Visceral fat changed from 8.0 to 3.0
- ▶ Breath assessment changed from 18 breaths in a minute (significantly too high, normal is less than 12) to 6 breaths in a minute.
- ▶ Metabolic age (body comp) changed from 62 to 40
- ▶ Noticeable improvements were present in all functional brain tests on post-care testing.

The patient-reported subjective improvements were also notable. They included:

- ▶ 70% of thoughts were now positive and 30% negative (an improvement of 20%).
- ▶ Her reported level of stress was now three out of ten, reduced from seven out of ten.
- ▶ Her quality of sleep was now rated as eight out of ten.
- ▶ While she began with anxiety for 50% of the day, she now only reported 20% of the day with anxiety and 10 per cent with depression
- ▶ All pain had resolved except for occasional TMJ pain (rated as two out of ten)
- ▶ The patient reported a significant reduction in sugar cravings, with some days having sugar cravings completely absent.
- ▶ She also reported a clear head and a more positive attitude.

Discussion

The significant impact of this course of care on this patient's quality of life, as well as her objective findings, cannot be overstated. While this course of care was in conjunction with her usual oncologist-recommended cancer care, the impact subluxation-based care had on adaptability, neurological function, and a reduction in toxicity is potentially significant.

The patient stated that she felt it '*helped her save her life*' and remarked on the impact of feeling supported in finding her voice and confidence in her own body and its natural and innate ability to heal itself if given no interference. While these are subjective findings, and cannot yet be corroborated by chiropractic research, it is notable that the therapeutic alliance between Chiropractor and patient may be significant in reducing the patient's psychological stress, thus having a profound impact on nervous system regulation.

Significantly, the patient no longer lives in fear of dying.

This case lays the foundation for future investigation into the potential correlation between extreme heavy metal levels, environmental toxicity, and multiple cancer diagnoses. This is a critical missing piece in the medical evaluation and understanding of a cancer diagnosis and prognosis.

The question needs to be asked; why is cancer different from other chronic inflammatory conditions? Why do the cells mutate instead of becoming degenerative, as do so many other chronic inflammatory conditions? Our research at Averio Health Institute suggests that heavy metal and environmental toxicity might be a correlating factor as, to date, all patients under our care with a cancer diagnosis (or history of cancer diagnosis) have been tested with a urinalysis that has shown severely high toxicity levels.

This line of reasoning goes back to the history of Chiropractic principles with the understanding that it was more significant than physical damage that could (and would) harm a central nervous system and cause subluxation and spinal dysfunction. If the goal is genuinely to reverse subluxation to the point where the individual is subluxation-free, free of abnormal spinal dysfunction, movement, alignment, and disease, then removing the toxicities in play is a part of the management plan.

Conclusion

In this case, numerous findings align with prior research:

- ▶ Accessory joint mobilisation and neural mobilisations for shoulder motion restriction after breast cancer surgery have been compared in a pilot randomised clinical trial. While both interventions showed improvements in shoulder range of motion, a larger controlled study is needed to determine the true effect of these therapies. (13)
- ▶ The relationship between cancer and inflammation has long been researched and is still being explored. (17)
- ▶ Studies have started to investigate the effect spinal manipulation may have on inflammatory cytokines, with most suggesting spinal manipulation may promote anti-inflammatory processes. (17, 18, 19, 20)

We recommend further research into toxicity as an indicator in cases of cellular mutation as an assisting therapy to Chiropractic regeneration.

We propose such inquiry would be beneficial to better understand how Chiropractic care, and especially concentrated chiropractic care, may support the cancer recovery process.

Images

Fig 1: Pre-concentrated care

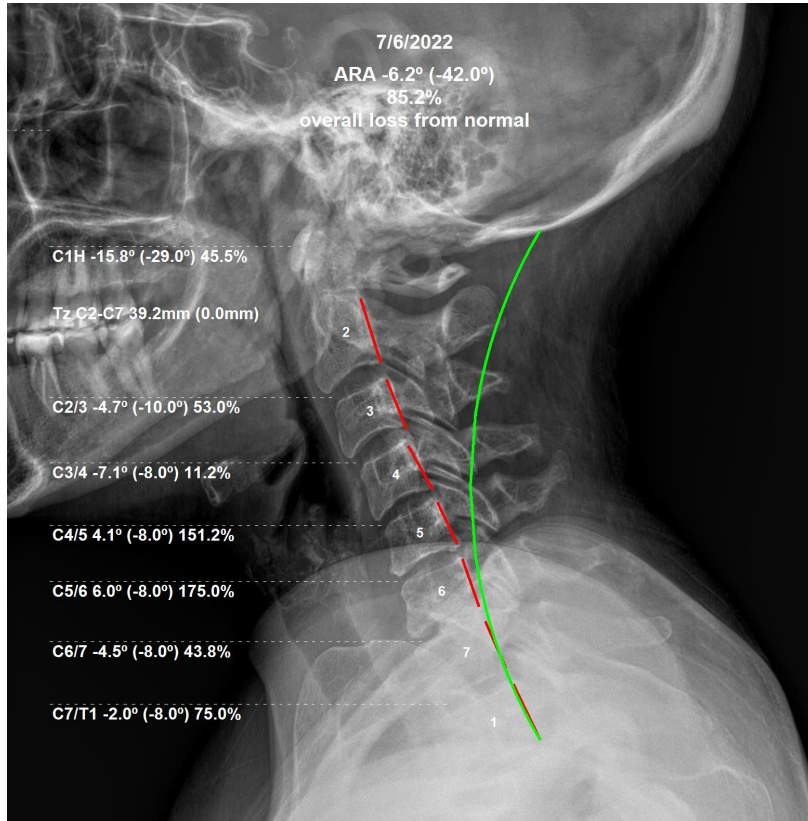
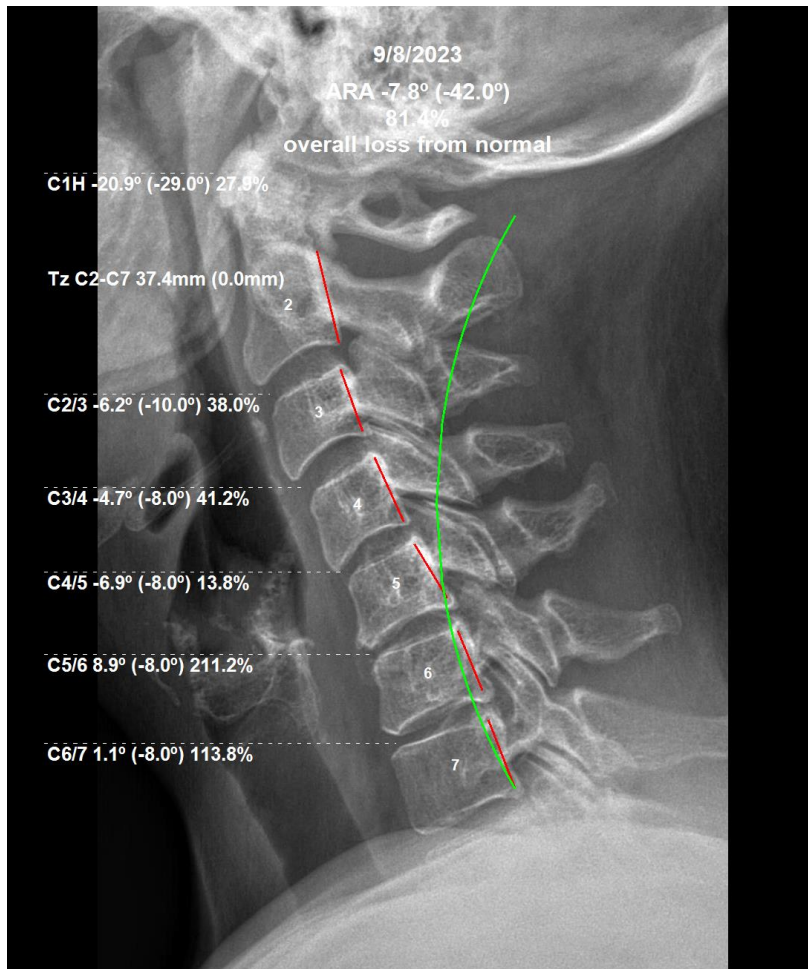


Fig 2: Post-concentrated care



Avery Martin
BS, DC CCEP
The Averio Institute

Douglas Pearce
DC
The Averio Institute

Ruth Postlethwaite
BBIomedSc
Writer, ASRF

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

Sarah Kotlerman
BS, DC, NTP
The Averio Institute
drkotlerman@averiohealth.com

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References

1. Zhou, X., Ma, Z., Zhang, L., Zhou, S., Wang, J., Wang, B., and Fu, W., (2016). Heart rate variability in the prediction of survival in patients with cancer: A systematic review and meta analysis. *Journal of Psychosomatic Research.* Vol 89, October 2016. Pp. 20-25, DOI <https://doi.org/10.1016/j.jpsychores.2016.08.004>
2. Castro-Martín, E., Galiano-Castillo, N., Ortiz-Comino, L., Cantarero-Villanueva, I., Lozano-Lozano, M., Fernández-Lao, C., & Arroyo-Morales, M. (2020). Effects of a Single Myofascial Induction Session on Neural Mechanosensitivity in Breast Cancer Survivors: A Secondary Analysis of a Crossover Study. *J Manipulative Physiol Ther.*43(4):394-404..
3. Pinheiro da Silva F., Moreira GM., Zomkowski K., Amaral de Noronha M., & Flores Sperandio F. (2019). Manual Therapy as Treatment for Chronic Musculoskeletal Pain in Female Breast Cancer Survivors: A Systematic Review and Meta-Analysis. *J Manipulative Physiol Ther.* 42(7):503-513.
4. Wolcott, E., & Hughes, M. (2012). Healthy Pregnancy Following Chiropractic Care in Ovarian Cancer Patient, After 2 Years of Infertility: A Case Report. *Journal of Pediatric, Maternal & Family Health Chiropractic.*1:12-15.
5. Dallaire J. (2018) Pediatric osteosarcoma of the knee: a case report. *Journal of Clinical Chiropractic Pediatrics* 17(3).
6. Leri JP. (2018). Metastatic Cancer of the Thoracic and Lumbar Spine Presenting as Mid- and Low Back Pain in a Long Distance Runner. *J Chiropr Med.* 17(2):121-127.
7. Kahn EA. (2017). A Young Female Athlete With Acute Low Back Pain Caused by Stage IV Breast Cancer. *J Chiropr Med.* 16(3):230-235. PMID: 29097953.
8. Chevront, T., & Sergent, A. (2017). Stage IV Small-Cell Lung Cancer Presenting as Leg Pain. *Chiropr J Australia.* 45:196-202
9. Johnson, TL Jr. (2010). Abdominal and back pain in a 65-year-old patient with metastatic prostate cancer. *J Chiropr Med.* 9(1):11-6.
10. Demetrious, J., & Demetrious, GJ. (2008) Lung cancer metastasis to the scapula and spine: a case report. *Chiropr Osteopat.* 12;16:8.
11. Lishchyna, N., & Henderson, S. (2004). Acute onset-low back pain and hip pain secondary to metastatic prostate cancer: a case report. *J Can Chiropr Assoc.* 48(1):5-12.
12. Yurkiw, DJ. (1995). Pancreatic cancer and chronic thoracic back pain: a case report. *J Can Chiropr Assoc.* 39(1):18-21.
13. de la Rosa Díaz, I., Torres Lacomba, M., Cerezo Téllez, E., Díaz Del Campo Gómez-Rico, C., & Gutiérrez Ortega, C. (2017). Accessory Joint and Neural Mobilizations for Shoulder Range of Motion Restriction After Breast Cancer Surgery: A Pilot Randomized Clinical Trial. *J Chiropr Med.* 16(1):31-40..

14. Seaman, R., Postlethwaite, R., & Mclvor, C. (2023). Improved Mental Health and Quality of Life in a 51-Year-Old Male under Chiropractic care: A Case Report. *Asia-Pac Chiropr J.* 3.4. apcj.net/Papers-Issue-3-4/#SeamanMentalHealth
15. Chu, ECP, Lai, CR., & Leung, BK. (2023). Presumptive Prostate Cancer Presenting as Low Back Pain in the Chiropractic Office: Two Cases and Literature Review. *Asia-Pac Chiropr J.* 3.4. apcj.net/Papers-Issue-3-4/#ChuetalPresumptiveProstateCancer
16. Coussens, LM., & Werb, Z. (2002). Inflammation and cancer. *Nature.* 19-26;420 (6917):860-7. DOI 10.1038/nature01322.
17. Duarte, F, Funabashi, M., Starmer, D., et al. (2022). Effects of Distinct Force Magnitude of Spinal Manipulative Therapy on Blood Biomarkers of Inflammation: A Proof of Principle Study in Healthy Young Adults. *Journal of Manipulative and Physiological Therapeutics.* 45(1):20-32.
18. Teodorczyk-Injeyan, JA., Triano, JJ., Gringmuth, R., et al. (2021). Effects of spinal manipulative therapy on inflammatory mediators in patients with non-specific low back pain: a non-randomized controlled clinical trial. *Chiropractic & Manual Therapies.* 29(1).
19. Song, XJ., Huang, ZJ., Song, WB., et al. (2016). Attenuation Effect of Spinal Manipulation on Neuropathic and Postoperative Pain Through Activating Endogenous Anti-Inflammatory Cytokine Interleukin 10 in Rat Spinal Cord. *Journal of Manipulative and Physiological Therapeutics.* 39(1):42-53.
20. Teodorczyk-Injeyan, JA., Injeyan, HS., & Ruegg, R. (2006). Spinal Manipulative Therapy Reduces Inflammatory Cytokines but Not Substance P Production in Normal Subjects. *Journal of Manipulative and Physiological Therapeutics.* 29(1):14-21.

Declarations

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.

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

All data with appropriate clinical commentary were provided by authors Kotlerman, Martin, and Carter.

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.'

About the Institute

The [Averio Institute](#) is a neurologically focused, multimodal health care facility that offers regenerative therapies alongside chiropractic care, nutritional support, rest, exercise and other functional neurological interventions in a five day concentrated care program tailored to individual guests.

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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

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