

Improved fertility outcomes following multiple IVF failures in a patient with Chronic Fatigue Syndrome and Hashimoto's Disease: A Case Report.

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Grok prompt

Summarise this paper by Kotlerman et al into 2 paragraphs in clinical language for a Chiropractor and provide 5 multi-choice quiz questions with answers

Grok response

This case report describes a 32-year-old woman with long-standing infertility (PCOS history and five prior IVF failures, including an ectopic pregnancy) who presented after years of suboptimal cervical spine structure and systemic inflammatory burden. Comprehensive assessment revealed ligamentous instability across multiple cervical levels (notably C2-C3, C3-C4, and C5-C6) and a straightened cervical spine, with evidence of autonomic and neurological involvement. Laboratory data indicated systemic inflammation (high AA/EPA ratio) and micronutrient deficits, while the patient also carried Hashimoto's disease and a history of trauma and chronic stress. The treatment approach emphasised concentrated chiropractic care using the Averio Functional Neurological Technique (two two-week care blocks) focused on reducing cervical subluxations, restoring ligament stability, and modulating neural function, complemented by photobiomodulation, activity modification, and nutritional considerations (e.g., addressing gluten sensitivity in the context of inflammation). The patient achieved pregnancy three weeks after completing the second treatment block, culminating in a term birth without complications and without additional medical intervention, suggesting a potential link between improved cervical spine integrity, autonomic/central nervous system regulation, and hormonal milieu relevant to fertility. The authors advocate cautious interpretation given the single-case design, noting that longer or more intensive treatment, targeted diagnostic workups, and inflammation-management strategies may be necessary for similar outcomes, and they call for further research to clarify mechanisms and establish evidence for subluxation-based chiropractic care in fertility contexts.

In clinical implications for chiropractors, the report highlights a potential pathway whereby cervical spine ligament stability and central nervous system regulation could influence systemic inflammatory status and hypothalamic-pituitary-ovarian axis function, thereby affecting fertility potential in susceptible individuals. The case underscores the importance of thorough diagnostic evaluation (including cervical spine assessment, inflammatory markers, and endocrine considerations) and a structured, higher-frequency chiropractic program when appropriate, rather than intermittent adjustments. While promising, this single case does not establish causality or generalisable efficacy; practitioners should frame fertility discussions within evidence-based care and consider multidisciplinary collaboration, individualised inflammation management (e.g., addressing dietary sensitivities), and patient-centred risk-benefit discussions when contemplating similar approaches for fertility challenges.

Grok Quiz

Five multiple-choice questions (with answers):

1. Which cervical spine findings were most prominent in this case and considered central to the treatment focus?

- A) Hypermobility segments in the thoracic spine
- B) Ligament instability at C2-C3, C3-C4, and C5-C6 with a straightened C-spine
- C) Degenerative disc disease at L4-L5
- D) Normal cervical alignment with no instability

Answer: B

2. What was the primary clinical outcome reported after the concentrated chiropractic care?

- A) Improvement in chronic fatigue without fertility changes
- B) Conceived three weeks after the second treatment block and delivered at term without complications
- C) Resolution of Hashimoto's disease
- D) Immediate reduction in IVF attempts

Answer: B

3. Which mechanism did the authors propose as a plausible link between chiropractic care and fertility outcomes?

- A) Direct mechanical repositioning of the uterus
- B) Reduction of cervical subluxations leading to improved central nervous system regulation and hormonal balance
- C) Acute changes in cervical spine temperature
- D) Isolation of gluten sensitivity as the sole cause of infertility

Answer: B

4. What inflammatory or nutritional findings were reported at baseline that could relate to systemic health?

- A) Normal inflammatory markers and no nutrient deficiencies
- B) High AA/EPA ratio indicating systemic inflammation and multiple micronutrient deficiencies (e.g., B5, K1, Serine)
- C) Exclusively thyroid hormone abnormalities
- D) Elevated fasting glucose with no inflammatory markers

Answer: B

5. What caveat did the authors emphasise regarding the interpretation of this case?

- A) The findings prove causality and generalise to all infertility cases
- B) No further research is needed beyond this case
- C) As a single case report, results may not be generalisable; larger studies are needed to clarify mechanisms and efficacy
- D) Chiropractic care should replace conventional infertility therapies

Answer: C