

## Holistic healing of chronic fatigue syndrome: a case study on ayurvedic, dietary, and yogic interventions

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### Abstract:

**Introduction:** Chronic Fatigue Syndrome (CFS) is a debilitating disorder characterized by prolonged and unexplained fatigue, often accompanied by cognitive dysfunction, sleep disturbances, and musculoskeletal pain. Conventional treatment options are limited, necessitating alternative therapeutic approaches. **Aim & Objective:** This case study explores the efficacy of Ayurvedic treatment, dietary modifications, and *yogic* interventions in successfully managing CFS. **Methods:** A 38-year-old male patient diagnosed with CFS underwent a comprehensive assessment using laboratory tests, hormonal profiling, and imaging techniques. The intervention included *Ayurvedic* formulations, a customized diet plan, and a structured *yoga* regimen, including *pranayama* and meditation. The efficacy of the treatment was evaluated using subjective and objective measures before and after the

intervention. **Results:** Significant improvement was observed in fatigue levels, inflammatory markers, hormonal balance, and overall quality of life. Serum cortisol, C-reactive protein (CRP), and thyroid-stimulating hormone (TSH) levels showed marked improvements, indicating reduced stress and enhanced metabolic function.<sup>[3]</sup> **Conclusion:** The combination of *Ayurvedic* therapy, dietary modifications, and *yoga* proved effective in alleviating CFS symptoms. Further research with larger sample sizes is warranted to establish standardized protocols for holistic CFS management.

**Keywords:** Chronic Fatigue Syndrome, Dietary Management, *Yogic* Therapy, Holistic Healing, Fatigue Management, Mind-Body Medicine, Integrative Medicine, Energy Restoration

### Introduction

Chronic Fatigue Syndrome (CFS), also known as Myalgic Encephalomyelitis (ME), is a complex and debilitating

condition characterized by persistent, unexplained fatigue that is not alleviated by rest and significantly impairs daily activities.<sup>[3]</sup> The exact etiology of CFS remains unclear, but it is often associated with immune system dysfunction, hormonal imbalances, mitochondrial dysfunction, viral infections, and psychological stress. Conventional medical approaches primarily focus on symptomatic relief through medications, cognitive behavioral therapy (CBT), and graded exercise therapy (GET), but these methods often yield limited success. *Ayurveda*, the ancient system of medicine, offers a holistic and individualized approach to managing CFS by addressing its root causes rather than just alleviating symptoms. According to *Ayurvedic* principles, CFS can be understood as a disorder caused by an imbalance in *Agni* (digestive fire), accumulation of *Ama* (toxins), and vitiation of the *Vata* and *Kapha doshas*. Poor digestion, improper lifestyle habits, excessive stress, and depletion of *Ojas* (vital energy) contribute to the development of fatigue and systemic dysfunction. *Ayurvedic* management focuses on restoring digestive strength, detoxification, nourishing vital tissues, and rejuvenating the mind-body system. Dietary interventions play a crucial role in *Ayurvedic* treatment, with a focus on wholesome, easily digestible, and energy-boosting foods that enhance metabolism and cellular function. A balanced diet rich in warm, nourishing, and antioxidant-rich foods helps in combating fatigue and restoring vitality. This article presents a detailed case study of a patient diagnosed with Chronic Fatigue Syndrome who successfully managed the condition through an

integrative Ayurvedic, dietary, and yogic approach. The study highlights the effectiveness of holistic healing methods in restoring energy levels, improving quality of life, and providing long-term relief from the debilitating symptoms of CFS.

### **Case Presentation:**

A 38-year-old male patient presented with complaints of persistent fatigue, unrefreshing sleep, difficulty concentrating, joint pain, and frequent headaches for over a year. He had a history of chronic stress, irregular dietary habits, and sedentary lifestyle. His previous medical reports ruled out anaemia, hypothyroidism, and other systemic illnesses.

### **Probable Causes:**

The possible causes of chronic fatigue syndrome (CFS) in this 38-year-old male patient can be attributed to a combination of chronic stress, lifestyle imbalances, metabolic dysfunction, and systemic inflammation.

His history of chronic stress suggests prolonged activation of the hypothalamic-pituitary-adrenal (HPA) axis, potentially leading to adrenal fatigue and cortisol dysregulation, which can cause persistent exhaustion and poor stress resilience.<sup>[5]</sup> His irregular dietary habits may have contributed to nutritional deficiencies, gut dysbiosis, and weakened digestion (*Agni*), leading to toxin (*Ama*) accumulation, sluggish metabolism, and chronic inflammation. A sedentary lifestyle is known to impair circulation, mitochondrial function, and musculoskeletal health, which could explain his joint pain and frequent headaches.<sup>[5]</sup>

Despite his medical reports ruling out anaemia and hypothyroidism, low-grade inflammation and immune dysfunction could still be underlying factors, often seen in CFS patients. Oxidative stress and mitochondrial dysfunction might be contributing to his persistent fatigue and cognitive difficulties ("brain fog"). Additionally, his unrefreshing sleep may indicate autonomic nervous system dysregulation, leading to poor restorative function, further exacerbating fatigue and cognitive impairment.

Overall, the primary causes in this case appear to be HPA axis dysregulation (stress-induced adrenal dysfunction), metabolic sluggishness due to poor dietary patterns, toxin buildup (*Ama*) leading to systemic inflammation, mitochondrial dysfunction affecting energy production, and possible gut dysbiosis impairing nutrient absorption and immune function.

### Assessment and Diagnostic Investigations:

The patient underwent the following investigations before and after treatment:

- Haemoglobin (Hb): 10.5 g/dL (low)
- Erythrocyte Sedimentation Rate (ESR): 28 mm/hr (elevated)
- C-reactive protein (CRP): 12 mg/L (elevated)
- Lipid Profile:
  - Total Cholesterol: 220 mg/dL (high)
  - LDL: 145 mg/dL (high)
  - HDL: 38 mg/dL (low)
  - Triglycerides: 180 mg/dL (high)

Hormonal Analysis (Pre-Treatment Abnormal Values):

- Serum Cortisol: 8.2 µg/dL (low, indicating adrenal fatigue)
- Thyroid-Stimulating Hormone (TSH): 5.8 µIU/mL (borderline hypothyroidism)

Imaging Studies (Findings):

- Ultrasonography (USG) of the Abdomen: Mild fatty liver changes
- X-ray Cervical Spine: Mild cervical spondylosis (possibly linked to fibromyalgia)

Subjective Scales (Pre-Treatment Scores):

- Fatigue Severity Scale (FSS): 6.8/7 (severe fatigue)
- Pittsburgh Sleep Quality Index (PSQI): 14/21 (poor sleep quality)
- WHO Quality of Life (WHO-QOL) Score: 42/100 (low quality of life)

### Treatment Protocol:

The patient underwent a three-month integrative treatment approach:

#### Ayurvedic Management:

- **Herbal Formulations:**
  - *Ashwagandha* (*Withania somnifera*) – 500 mg BID
  - *Brahmi* (*Bacopa monnieri*) – 250 mg BID
  - *Guduchi* (*Tinospora cordifolia*) – 500 mg BID
  - *Shatavari* (*Asparagus racemosus*) – 500 mg BID
- **Panchakarma Therapy:**
  - *Abhyanga* (therapeutic oil massage) using *Mahanarayana Taila*

- *Shirodhara* (continuous pouring of medicated oil over the forehead)
- *Basti* (medicated enema) with Dashamoola decoction (alternate days for 10 days)

#### Dietary Modifications:

- *Sattvic* diet rich in whole grains, seasonal fruits, leafy greens, and nuts.
- Avoidance of caffeine, processed foods, and refined sugars.
- Hydration with herbal teas (Tulsi, Brahmi, and Ginger infusion).
- Early dinner, incorporating warm milk with turmeric.

#### Yogic Therapy<sup>[4]</sup>:

- **Pranayama:** Bhramari, Anulom Vilom, and Ujjayi (15 min/day).
- **Asanas:** *Bhujangasana*, *Dhanurasana*, and *Viparita Karani* (20 min/day).

- **Meditation:** 20 minutes of mindfulness meditation before sleep.

#### Observation & Results:

The patient showed remarkable improvement following *Ayurvedic*, *dietary*, and *yogic* interventions. Hemoglobin levels increased (10.5 to 13.2 g/dL), inflammation markers decreased (ESR: 28 to 12 mm/hr, CRP: 12 to 4.5 mg/L), and lipid profile normalized. Hormonal balance improved, with cortisol rising (8.2 to 12.5 µg/dL) and TSH normalizing (5.8 to 3.2 µIU/mL). Fatigue and sleep quality improved significantly (FSS: 6.8 to 3.2, PSQI: 14 to 6), and WHO-QOL score increased (42 to 78). The resolution of fatty liver changes further supports metabolic recovery. These results highlight the effectiveness of an integrative approach in managing chronic fatigue syndrome (CFS) and enhancing overall well-being.

**Table 1: Before and After Treatment Results**

Parameter	Before Treatment	After Treatment
Haemoglobin (Hb) (g/dL)	10.5 (Low)	13.2 (Normal)
Erythrocyte Sedimentation Rate (ESR) (mm/hr)	28 (Elevated)	12 (Improved)
C-reactive protein (CRP) (mg/L)	12 (Elevated)	4.5 (Normal)
Total Cholesterol (mg/dL)	220 (High)	185 (Normal)
LDL (mg/dL)	145 (High)	110 (Near Normal)
HDL (mg/dL)	38 (Low)	50 (Improved)
Triglycerides (mg/dL)	180 (High)	140 (Normal)
Serum Cortisol (µg/dL)	8.2 (Low)	12.5 (Normal)
Thyroid-Stimulating Hormone (TSH) (µIU/mL)	5.8 (Borderline High)	3.2 (Normal)

Parameter	Before Treatment	After Treatment
Ultrasonography (USG) of Abdomen	Mild fatty liver changes	No fatty liver changes
X-ray Cervical Spine	Mild cervical spondylosis	No significant changes
Fatigue Severity Scale (FSS) (out of 7)	6.8 (Severe Fatigue)	3.2 (Improved Energy Levels)
Pittsburgh Sleep Quality Index (PSQI) (out of 21)	14 (Poor Sleep)	6 (Better Sleep Quality)
WHO Quality of Life (WHO-QOL) Score (out of 100)	42 (Low QOL)	78 (Significant Improvement)

These after-treatment values suggest significant improvements in inflammation markers, lipid profile, hormonal balance, fatigue levels, sleep quality, and overall well-being following Ayurvedic, dietary, and yogic management.

The patient reported a 70% improvement in energy levels, improved sleep quality, and better cognitive function within three months.

### Discussion

Chronic Fatigue Syndrome (CFS) arises from hormonal imbalances, inflammation, metabolic dysfunction, and lifestyle factors. In this case, the patient's low hemoglobin, elevated inflammatory markers, dyslipidemia, adrenal fatigue, and borderline hypothyroidism required a holistic, root-cause approach rather than symptomatic treatment.

A combined *Ayurvedic*, dietary, and yogic intervention was chosen to address these imbalances:<sup>[1]</sup>

- *Panchakarma* detoxification eliminated toxins and improved metabolism.
- *Rasayana* therapy with *Ashwagandha*,

*Brahmi*, and *Guduchi* restored energy, reduced stress, and enhanced immunity.<sup>[2]</sup>

- Dietary modifications corrected nutritional deficiencies, inflammation, and lipid imbalance.
- Yoga and *pranayama* improved HPA axis function, circulation, and sleep quality.
- Herbal sleep support (*Tagara*, *Jatamansi*) and a structured routine (*Dinacharya*) regulated circadian rhythms.

Post-treatment, the patient's fatigue, inflammation, lipid profile, sleep, and quality of life showed significant improvement, confirming the effectiveness of this integrative approach in managing CFS and promoting long-term well-being.

### Conclusion

This case study highlights the successful management of chronic fatigue syndrome using *Ayurvedic* interventions, dietary modifications, and yoga therapy. The significant reduction in inflammatory markers, hormonal balance, and subjective improvement in fatigue levels reinforce the effectiveness of this integrative approach. Future randomized

controlled trials with larger cohorts are recommended to establish standardized treatment guidelines.[1]

**Conflict of Interest:** None

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