

REVIEW ARTICLE

Harnessing Yoga Nidra for Cognitive Wellness in Post-Cancer Care: A Concise Review

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ABSTRACT

Cognitive impairment, often described as “chemo brain,” is a common but under addressed issue among cancer survivors. Yoga Nidra (YN), a deeply restorative guided meditation, may offer a promising, non-invasive therapeutic pathway to enhance cognitive function and overall quality of life. This commentary explores the neurophysiological mechanisms of YN, its accessibility, and emerging evidence supporting its application in survivorship care. Greater incorporation of YN into clinical and home-based cancer recovery programs could provide substantial benefits in cognitive restoration and psychosocial well-being.

KEYWORDS

• Yoga Nidra • Cancer survivorship • Cognitive impairment • Chemo brain • Neuroplasticity

INTRODUCTION

With advancements in oncological treatments, the number of cancer survivors has steadily increased over recent decades. However, survivorship is often accompanied by long-term sequelae that impact quality of life. Cancer survivors often face a complex array of challenges long after treatment ends. Among these, cognitive impairments colloquially

termed “chemo brain” have gained increasing recognition.¹ Characterized by memory lapses, difficulty concentrating, and mental fatigue, these symptoms can significantly impair quality of life and hinder reintegration into daily activities.^{1,2} As survivorship rates increase globally³, there is a pressing need to explore integrative approaches that not only alleviate physical symptoms but also restore cognitive

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well-being. YN, a lesser-known but powerful yogic practice, may offer a novel, non-invasive path toward cognitive restoration.^{4,5}

Cognitive dysfunction in cancer survivors is multifactorial, influenced by chemotherapy, radiation, hormonal therapy, and psychological stress.^{1,2} Conventional treatments for cognitive deficits are limited, often focusing on pharmacological interventions or cognitive behavioral therapy, which may not be accessible or effective for all.⁶ This gap has spurred interest in complementary and integrative medicine, particularly mind-body interventions that promote neuroplasticity, stress reduction, and emotional balance.^{7,8}

YOGA NIDRA: ORIGINS AND OVERVIEW

YN, or “yogic sleep,” is a guided meditation technique traditionally rooted in the tantric practices of ancient India. It is described in traditional yogic texts such as the Upanishads and later refined by yogis such as *Swami Satyananda Saraswati*. It involves systematic rotation of consciousness through different parts of the body, breath awareness, visualization, and the cultivation of a deep inner resolve (*sankalpa*). The practice induces a hypnagogic state, a place between wakefulness and sleep, allowing access to the subconscious mind and facilitating neurophysiological restoration. Conducted in a state between wakefulness and sleep, it facilitates deep relaxation by systematically guiding individuals through body scans, breath awareness, and visualization.⁵ YN is practiced in a supine position, making it particularly suitable for cancer survivors who may be experiencing fatigue, pain, or reduced mobility. This practice activates the parasympathetic nervous system, reduces sympathetic overdrive, and has been shown to down regulate the hypothalamic-pituitary-adrenal (HPA) axis all mechanisms that may counteract cognitive fatigue and stress-induced cognitive impairment.^{8,9} Neuroimaging studies have suggested that such meditative states can enhance connectivity in brain regions responsible for attention and memory processing, including the prefrontal cortex and hippocampus, although direct evidence from YN specific research remains limited.

SCIENTIFIC EVIDENCE SUPPORTING YOGA NIDRA

Emerging research underscores the benefits of YN in populations experiencing stress, anxiety, and trauma. A study by Kumar *et al.* (2019) found significant improvements in attention and memory in college students practicing YN over eight weeks.¹⁰ In a randomized controlled trial involving breast cancer patients, Rani *et al.* (2021) reported reductions in perceived stress and enhancements in cognitive functioning following a structured YN intervention.⁴ Though limited, such evidence highlights the potential of this practice as a supportive therapy for cancer survivors. Further investigations have also indicated that YN can improve sleep quality, emotional regulation, and even immune function, all of which are closely tied to cognitive resilience.

MECHANISMS OF COGNITIVE RESTORATION

YN promotes parasympathetic dominance, reducing cortisol levels and alleviating chronic stress a key contributor to cognitive impairment.¹¹ Chronic stress is known to affect hippocampal volume and disrupt neurotransmitter balance, both of which are implicated in cognitive dysfunction. By modulating the hypothalamic-pituitary-adrenal (HPA) axis, YN helps restore physiological balance. The practice may also influence the default mode network (DMN), which is associated with mind-wandering and self-referential thinking. Dysregulation of the DMN has been linked to attention deficits and cognitive inefficiencies. YN appears to stabilize this network, thereby enhancing attentional control.¹²

Furthermore, YN enhances sleep quality, which is closely linked to cognitive performance. Improved sleep consolidates memory and facilitates the glymphatic clearance of neurotoxins, processes essential for brain health.¹³ Sleep disturbances are commonly reported among cancer survivors, and interventions that improve sleep may have downstream effects on cognition. On a biochemical level, YN has been shown to modulate the secretion of melatonin and serotonin, neurochemicals crucial for mood regulation and sleep cycles. Elevated melatonin levels not only enhance sleep quality but also

possess antioxidant properties, potentially protecting against oxidative stress-induced neuronal damage. These effects collectively support the restoration of neural circuits implicated in attention, memory, and executive functioning.

CLINICAL AND PRACTICAL IMPLICATIONS

YN is cost-effective, easily scalable, and requires minimal physical exertion. Its integration into cancer rehabilitation programs could provide survivors with an accessible tool for cognitive and emotional support. Implementation may involve group sessions, digital apps, or recordings supervised by certified instructors. Hospitals and cancer centers could collaborate with certified yoga therapists to incorporate YN into survivorship care plans. Patient feedback from existing programs often highlights increased mental clarity, improved sleep, and enhanced coping skills. Including YN as a supportive therapy may also reduce reliance on pharmacological interventions for anxiety, depression, and insomnia, which are frequently prescribed to survivors experiencing cognitive issues.

Healthcare providers must also consider cultural and individual preferences, offering flexible delivery modes and multilingual resources to maximize reach. Digital health platforms can expand access, particularly for those in rural or underserved areas. Moreover, telehealth integration of YN sessions can be beneficial for immunocompromised patients or those facing mobility constraints. Incorporating YN into cancer survivorship care also presents opportunities for peer support. Group sessions allow participants to share experiences and develop a sense of community, which has been shown to enhance emotional well-being and treatment adherence. Facilitating peer-led discussions following YN practice may amplify its psychosocial benefits.

However, more robust randomized controlled trials are needed to establish standardized protocols and quantify long-term cognitive benefits. Collaboration among oncologists, psychologists, neuroscientists, and yoga therapists is essential for translating research into practice. Institutional support for practitioner training and awareness programs will further enhance clinical integration. Policy implications should also be considered.

Integrative health guidelines must recognize YN as a viable supportive care modality. Accrediting bodies and insurance providers may be encouraged to support coverage of such services under survivorship benefits, especially if long term cost savings related to reduced medication use and improved functional outcomes can be demonstrated.

CONCLUSION

YN holds significant promise as a complementary approach to address cognitive deficits in cancer survivors. By promoting deep relaxation, enhancing sleep, and modulating neurocognitive function, it offers a pathway to holistic recovery. As survivorship care evolves, incorporating evidence-based mind-body practices like YN could enrich the quality and effectiveness of post-cancer rehabilitation. With further research, strategic implementation, and interdisciplinary collaboration, YN has the potential to become a staple in integrative oncology care. Its gentle, adaptable nature makes it a feasible option for large scale deployment across clinical settings. When paired with patient education, caregiver involvement, and multidisciplinary support, YN can empower survivors to reclaim cognitive vitality and improve overall quality of life. Future studies should continue to explore its longitudinal effects, biological markers of change, and the potential for synergy with other lifestyle interventions such as nutrition and physical activity.

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