

Ayurveda and Therapeutic Yoga in The Integrative Management of Amavata (Rheumatoid Arthritis): A Narrative Review

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ABSTRACT

This review evaluates the role of therapeutic yoga as an adjunct in managing Amavata, the Ayurvedic correlate of rheumatoid arthritis (RA), characterized by joint pain, swelling, stiffness, and systemic symptoms. Integrating evidence from Ayurvedic principles and modern medicine, the review highlights how yoga comprising gentle asanas, pranayama, meditation, and relaxation addresses both physical and psychosocial dimensions of the disease. In Ayurveda, Amavata management focuses on eliminating Ama (metabolic toxins) and balancing Vata through diet, detoxification, and lifestyle modifications. Modern medicine employs pharmacological interventions to control inflammation and modulate immune activity. Yoga bridges these approaches by improving joint flexibility, enhancing circulation, reducing stiffness, regulating inflammatory cytokines, and modulating neuroendocrine-immune pathways. Specific practices like Tadasana, Bhujangasana, and Anulom Vilom enhance musculoskeletal strength, oxygenation, and stress regulation, while mindfulness techniques improve emotional resilience. Evidence shows yoga reduces inflammatory markers (CRP, IL-6, TNF- α), lowers stress hormones, and supports pain relief. Its integration with Ayurvedic and allopathic treatments optimizes outcomes, minimizes drug dependence, and promotes holistic well-being. Safety guidelines, such as using props and avoiding overstretching during flare-ups, ensure suitability for diverse patients. Overall, therapeutic yoga emerges as a safe, cost-effective, and empowering strategy that complements conventional care, aligning with global trends toward patient-centred, multidisciplinary management of chronic inflammatory disorders like Amavata.

KEYWORDS: Therapeutic yoga, Amavata, Rheumatoid arthritis, Ayurveda, Asanas, Pranayama, Immune modulation, Integrative medicine, Holistic care.

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INTRODUCTION

Yoga therapy provides an adjunct means of managing Amavata, a disease in Ayurveda that is closely similar to rheumatoid arthritis (RA) in contemporary medicine. Amavata is marked by painful joints, swelling, stiffness, and generalized symptoms secondary to the deposition of "Ama" (toxins) and vitiating of Vata dosha. Yoga therapy, if combined with standard treatment, can relieve symptoms, enhance mobility, and improve the quality of life. Such mild asanas as Tadasana, Bhujangasana, Setubandhasana, and Shavasana help to facilitate flexibility of joints, decrease stiffness, and promote circulation (Ye et al., 2020).

“Pranayama practices such as Anulom Vilom and Bhramari help to counteract stress and enhance oxygenation, thus regulating the immune response. Relaxation and meditation help in coping with chronic pain perception and emotional stress, which are common in RA. Routine, specifically adapted yoga classes also enhance muscle strength, joint stability, and body perception without overloading inflamed joints. Research evidence indicates that yoga decreases inflammatory markers, enhances functional status, and maintains mental health in patients with RA. But it should be made conducive to the physical capabilities and disease status of the individual, ideally under the instruction of a qualified yoga therapist. Therefore, therapeutic yoga is an integrated, non-invasive, and empowering approach for the management of Amavata/Rheumatoid arthritis in addition to medical treatment (Mona Pathak, 2025).

OBJECTIVES

- To evaluate the role of therapeutic yoga in alleviating pain, stiffness, and inflammation in Amavata/Rheumatoid Arthritis.
- To examine the integration of yoga with Ayurvedic and allopathic treatments for enhanced patient outcomes.
- To identify specific asanas, pranayama, and meditation techniques beneficial for joint flexibility and stress reduction.
- To analyse scientific evidence supporting yoga's modulatory effects on immune and inflammatory responses in chronic disorders.

METHODOLOGY

This review adopts a secondary research approach, systematically collecting and analysing data from credible and authoritative existing sources. Information was gathered from peer-reviewed journals indexed in databases such as PubMed, Research Gate, Scopus, and Google Scholar, ensuring inclusion of both Ayurvedic and modern medical perspectives on therapeutic yoga for Amavata/Rheumatoid Arthritis. Repositories like Shodhganga were explored to access doctoral theses and dissertations providing region-specific insights. Standard reference books on Ayurveda, yoga therapy, and rheumatology were consulted for theoretical frameworks and classical descriptions. Government publications, health ministry reports, and guidelines from recognized medical councils were used to obtain official statistics, policies, and treatment protocols. Selection criteria emphasized relevance, scientific rigor, and publication within the last 10–15 years, though seminal older works were also included for historical context. Literature was screened to identify studies focusing on the integration of yoga with Ayurvedic and Allopathic treatments, therapeutic objectives, and documented clinical outcomes. Data was synthesized thematically to compare traditional and modern approaches, highlight evidence-based benefits, and identify gaps warranting further research. This methodology ensures a comprehensive, multidisciplinary evidence base drawn from established, verifiable sources to support critical analysis.

Amavata and Rheumatoid Arthritis

Amavata in Ayurveda - Amavata is a long-standing, painful illness explained in Ayurvedic literature, initially scientifically described by Acharya Madhava in Madhava Nidana. The name "Amavata" is derived from two elements Ama (undigested or unsuitably metabolized materials developed due to diminished digestion) and Vata (one of the three doshas that controls movement and nervous activity). The etiology starts with mandagni (deficient digestive fire) culminating in Ama development, which combines with exacerbated Vata dosha. This Ama circulates and accumulates in the joints (sandhi), causing stiffness, swelling, pain, and limited movement (Mishra, 2017). Eventually, systemic symptoms like fever, heaviness, and malaise are seen. Ayurvedic management focuses on correcting the cause by enhancing digestion (deepana), removing Ama (pachana), balancing Vata (snehana, swedana), and cleansing the system (shodhana therapies such as virechana and basti). Herbal preparations like Simhanada Guggulu, Rasna, Eranda Taila, and Dashamoola are usually prescribed with dietary changes to improve digestion and lower inflammation (Reena Shivsagar Mishra et al., 2023).

Rheumatoid Arthritis - Rheumatoid Arthritis (RA) is a systemic, autoimmune disorder characterized by chronic inflammation of synovial joints. It results from the immune system attacking the synovium (synovial lining) as if it were a foreign body, producing inflammation, pain, swelling, and ultimately joint deformity. The cause is not certain, but there is evidence that it is linked to genetic predisposition, hormonal influences, and environmental agents (e.g., infections, cigarette smoking). The condition more frequently affects women than men and usually develops between the ages of 30 and 50. Symptoms and signs are symmetrical joint involvement, severe morning stiffness lasting for hours, fatigue, and systemic effects on eyes, lungs, heart, and blood vessels. Diagnosis is clinical criteria, increased inflammatory markers (ESR, CRP), and rheumatoid factor (RF), and anti-CCP antibodies. Imaging like X-ray, ultrasound, or MRI detects joint erosions and synovitis (Di Matteo et al., 2023).

Correlation Amavata and Rheumatoid Arthritis - Amavata and RA bear strong clinical presentation similarities prolonged joint pain, swelling, stiffness, and extra-articular manifestations. Ama is analogous to autoimmune inflammation in RA, and Vata vitiation is equivalent to pain and mobility impairment. Both diseases are progressive and need early comprehensive treatment to avoid irreparable joint damage.

Current RA treatment centers on the use of disease-modifying antirheumatic drugs (DMARDs), biologics, NSAIDs, corticosteroids, and physiotherapy to modify disease and maintain joint function. Detoxification, enhancement of digestion, anti-inflammatory spices and herbs, and regulation of lifestyle characterize Ayurvedic treatment. Integrative strategies superimposition of contemporary pharmacology for acute management and Ayurvedic intervention for chronic systemic equilibrium are being increasingly investigated for better quality of life.

Therefore, Amavata and Rheumatoid Arthritis are two views—tradition and modernity—of a common clinical condition, sharing overlapping symptoms and complementary treatment options (Kumar, 2020).

Ayurvedic Perspective on Amavata

In Ayurveda, Amavata is a chronic, painful disorder that closely resembles rheumatoid arthritis in modern medicine. The term is derived from two Sanskrit words: Ama, meaning undigested or improperly metabolized material that acts as a toxin, and Vata, one of the three doshas responsible for movement, nerve impulses, and circulation. Amavata is characterized by joint pain, swelling, stiffness, and systemic symptoms such as fever and fatigue. It is considered a Krucchasadhya (difficult to cure) condition due to its chronic and relapsing nature (Kalal, 2024).

Etiopathogenesis (Samprapti)

According to Ayurvedic pathophysiology, Amavata results from the simultaneous aggravation of Vata dosha and accumulation of Ama. Ama forms due to impaired digestion (Agnimandya) in the gastrointestinal tract, leading to improperly processed nutrients.

When Vata is vitiated due to improper diet, lifestyle factors, or excessive physical/mental exertion it carries Ama from the digestive tract into the systemic circulation. This Ama gets lodged in the joints and soft tissues, leading to inflammation, swelling, pain, and restricted mobility. The obstruction in Srotas (body channels) further aggravates the condition (Singh, 2020).

Nidana (Causes)

Common causative factors include:

- Intake of incompatible food combinations (Viruddhahara), heavy and oily foods, or cold and stale meals.
- Irregular eating habits and suppression of natural urges.
- Sedentary lifestyle combined with excessive mental stress.
- Exposure to cold and damp environments.
- Overexertion during indigestion (Balikai, 2024).



Fig.1: Ayurvedic Treatment Ease Rheumatoid Arthritis

Sources: <https://www.nimba.in/can-ayurvedic-treatment-ease-rheumatoid-arthritis/>

Purvarupa (Prodromal Symptoms) - Before full manifestation, patients may experience loss of appetite, indigestion, generalized heaviness, fatigue, stiffness, and mild joint discomfort.

Rupa (Symptoms) - Fully developed Amavata presents with:

- Severe pain and swelling in multiple joints.
- Morning stiffness and restricted joint movements.
- Fever, loss of appetite, thirst, and malaise.
- In chronic stages, joint deformities may occur.

Chikitsa (Management) - Ayurvedic management of Amavata is aimed at:

- Digesting and eliminating Ama (Amapachana).
- Pacifying aggravated Vata.
- Relieving inflammation and stiffness.
- Preventing recurrence.

Langhana and Swedana

- *Langhana* (lightening therapy) through fasting or light, easily digestible diets is prescribed initially.
- *Swedana* (sudation therapy) using dry heat or medicated steam helps relieve stiffness and pain by removing blockages from *Srotas*.

Shamana Chikitsa (Pacifying Treatment)

- Use of *Deepana* (digestive stimulants) and *Pachana* (digestives) such as *Trikatu* (dry ginger, black pepper, long pepper) and *Panchakola*.
- Decoctions like *Rasnadi kwatha* and *Mahayograj guggulu* for joint pain and inflammation.
- *Eranda taila* (castor oil) preparations to eliminate *Ama* and pacify *Vata*.

Shodhana Chikitsa (Purification Therapy)

Virechana (purgation) is employed after initial Ama digestion to cleanse the body.

Basti (medicated enema), particularly *Niruha* and *Anuvasana basti*, is considered highly effective in chronic cases.

Pathya-Apathya (Diet & Lifestyle)

- Warm, light, easily digestible meals such as horse gram soup and cooked vegetables.
- Avoidance of curd, cold drinks, heavy fried foods, and incompatible food combinations.
- Regular mild exercise and yoga to maintain joint flexibility.
- Protection from cold and damp environments.

From an Ayurvedic standpoint, *Amavata* is not merely a joint disorder but a systemic manifestation of impaired digestion and Vata imbalance. A holistic approach combining diet, lifestyle modifications, herbal formulations, detoxification therapies, and preventive measures is essential for long-term relief. By addressing the root cause (Ama and Vata vitiation), Ayurveda aims not just to manage symptoms but to restore balance and improve the overall quality of life (Chinthala, 2023).

Pathophysiology of Rheumatoid Arthritis in Modern Medicine

Rheumatoid arthritis (RA) is a chronic, systemic autoimmune condition mainly affecting synovial joints, resulting in chronic inflammation, progressive cartilage loss, and bone erosion. In contemporary medicine, the pathophysiology has been conceptualized as a multifactorial process of genetic predisposition, environmental stimulus, and dysregulated immune mechanisms. Genetically, human leukocyte antigen (HLA) class II alleles HLA-DR4 and HLA-DRB1 impart augmented susceptibility by facilitating abnormal antigen presentation. Environmental triggers like smoking, infections, and hormonal influences can trigger autoimmunity in people with a genetic predisposition (Guo et al., 2018). The process begins with the activation of antigen-presenting cells (APCs) that activate autoreactive T cells, which then activate B cells, macrophages, and synovial fibroblasts. The synovium is replaced with a hyperplastic, invasive tissue known as pannus, made up of proliferating fibroblast-like synoviocytes (FLS), immune cells, and new blood vessels developed through angiogenesis. This pannus proliferates and invades cartilage and bone aggressively, liberating proteolytic enzymes such as matrix metalloproteinases (MMPs) and cathepsins that break down extracellular matrix components (Akram et al., 2021). The cytokines including tumor necrosis factor-alpha (TNF- α), interleukin-1 beta (IL-1 β), and interleukin-6 (IL-6) play a role in orchestrating the inflammatory cascade, promulgating an ongoing cycle of immune activation and tissue damage. Along with local joint pathology, comorbidities such as cardiovascular disease, anemia of chronic disease, and osteoporosis result from systemic inflammation, rendering RA a condition with localized as well as systemic pathophysiological influence (Deshmukh, 2023).

Immunopathogenesis of Rheumatoid Arthritis

The immunopathogenesis of RA centers on the disruption of immune tolerance and the induction of chronic synovial inflammation. One critical initiating factor is the presentation by APCs to CD4+ T helper (Th) cells of citrullinated peptides altered by peptidylarginine deiminase enzymes. It is highly correlated with the production of anti-citrullinated protein antibodies (ACPAs), a defining biomarker for RA. Activated Th1 and Th17 cells secrete interferon-gamma (IFN- γ) and interleukin-17 (IL-17), which activate and recruit macrophages and neutrophils, amplifying the inflammation (Firestein & McInnes, 2017). Macrophages are pivotal effector cells, secreting TNF- α , IL-1 β , and IL-6, further activating synoviocytes and chondrocytes, leading to joint destruction. B cells not just secrete autoantibodies like ACPAs and rheumatoid factor (RF) but also function as APCs, perpetuating T-cell activation. The synovial environment is enriched with pro-inflammatory cytokines, chemokines, and growth factors, resulting in the immigration of additional immune cells and the proliferation of the pannus. Angiogenesis, which is promoted by vascular endothelial growth factor (VEGF), provides a steady supply of inflammatory mediators and nutrients to the synovium (Disler et al., 2019). Osteoclastogenesis is increased by receptor activator of nuclear factor kappa-B ligand (RANKL), secreted by activated T cells and synovial fibroblasts, causing focal bone destruction. Abnormal regulation of regulatory T cells (Tregs) and impaired apoptosis of activated immune cells lead to the maintenance of the inflammatory response. In reality, RA immunopathogenesis is an intricate balance between the innate and adaptive immune response with feedback loops between immune cells and synovial tissue that generate a chronic, self-perpetuating inflammatory process (Imboden, 2009).

Progression of Joint Damage and Systemic Manifestations

If untreated or poorly controlled, RA evolves in stages mirroring increasing joint and systemic involvement. Initially, synovial inflammation leads to swelling, redness, and pain, usually symmetrical and involving small joints of the hands and feet. With chronicity, relentless pannus growth invades cartilage, resulting in thinning and fragmentation, which become clinically evident as limited range of motion and joint deformities like ulnar deviation, swan-neck deformities, and boutonnière deformities. Bone erosion occurs due to osteoclast activation, with consequent irreversible damage to the structure seen on imaging studies. In the end stage, fibrous or bony ankylosis can develop, causing profound disability. Outside the joints, systemic features are prevalent as a result of generalized inflammation and immune complex deposition. Rheumatoid nodules, hard subcutaneous masses most commonly located over extensor surfaces, are the best-known extra-articular manifestation (Kim & Suh, 2020). The cardiovascular system is significantly impaired; chronic inflammation enhances atherosclerosis, making myocardial infarction and stroke more likely. Pulmonary manifestations can be interstitial lung disease, pleuritis, or pulmonary nodules. Hematologic involvement includes anemia of chronic disease and, exceptionally, Felty's syndrome, which is characterized by splenomegaly and neutropenia. Ocular involvement in the form of scleritis and episcleritis is also seen and may result in loss of vision if not treated. Vasculitis, despite being less frequent in the current era of aggressive treatment, affects small and medium-sized vessels, resulting in skin ulcers, neuropathies, and organ ischemia. The continuous systemic inflammation of RA is responsible for generalized fatigue,

weight loss, and osteoporosis, the latter being accelerated by both disease activity and corticosteroid treatment (Radu & Bungau, 2021). With the use of contemporary disease-modifying antirheumatic drugs (DMARDs) and biologic agents against defined immune mechanisms, disease progression may be effectively arrested, decreasing both joint damage and systemic complications. Yet, the therapeutic window of opportunity for best intervention is small, so stress must be placed upon early diagnosis and intensive therapy in order to maintain joint function and prevent subsequent long-term disability (Wu et al., 2022).

Role of Yoga in Chronic Inflammatory Disorders

Chronic inflammatory diseases, including rheumatoid arthritis, inflammatory bowel disease, psoriasis, asthma, and systemic lupus erythematosus, are defined by long-term activation of the immune system, resulting in long-term tissue damage and functional loss. These diseases usually occur as a combination of genetic susceptibility, environmental factors, and lifestyle elements that disrupt immune homeostasis. Over the past two decades, growing scientific evidence has highlighted the therapeutic role of yoga in managing these disorders, not merely as a physical exercise but as a holistic mind–body intervention. Yoga, which combines physical postures (asanas), breathing practices (pranayama), and meditative techniques, exerts a multi-dimensional effect on the body's stress and inflammatory responses (Estevao, 2022). By augmenting parasympathetic activity and downregulating sympathetic overdrive, yoga lowers stress-induced cortisol release, a major source of systemic inflammation. Yoga also promotes gentle mobilization of joints, enhanced muscle tone, and augmented circulation, which can assist in reducing stiffness and swelling observed in inflammatory disorders. Clinical trials have found that daily practice of yoga can result in appreciable decreases in pro-inflammatory cytokines like TNF- α , IL-6, and CRP, together with augmentation of pain perception, fatigue, and quality of life. In addition, the focus on mindfulness and body awareness promotes improved coping mechanisms, decreasing psychological morbidity from chronic illness and enabling long-term disease control (Djalilova et al., 2019).

Understanding the Pathophysiology of Inflammation - Inflammation is an intrinsic defensive process of the immune system, which is activated in reaction to injury, infection, or noxious stimuli. In acute conditions, it is crucial to clear infections, destroy damaged cells, and initiate tissue healing. But when inflammation persists as a chronic state, the process changes from protective to pathological. The pathophysiology consists of persistent activation of immune cells like macrophages, T lymphocytes, and neutrophils to produce a cascade of pro-inflammatory mediators like cytokines, chemokines, and prostaglandins. Sustained activation of transcription factors like NF- κ B and AP-1 maintains the chronic expression of inflammatory genes. This chronicity breaks the tissue architecture, induces fibrosis, and results in chronic organ dysfunction. Chronic inflammation is also associated with oxidative stress, mitochondrial damage, and disrupted neuroendocrine regulation, producing a self-reinforcing cycle of immune activation and tissue injury (Alharbi et al., 2023).

In diseases like rheumatoid arthritis, autoreactive immune cells are directed against synovial joints, causing cartilage destruction and bone loss. In systemic inflammatory diseases, this disease process spreads from the original location to include cardiovascular, metabolic, and nervous systems. The hypothalamic-pituitary-adrenal (HPA) axis and autonomic nervous system are both involved in modulating inflammation, but under chronic stress, their dysregulation potentiates immune imbalance. Knowledge of these mechanisms is critical to investigate complementary therapies such as yoga, which can step into the inflammatory cascade at various points, from modulation of stress to immune regulation (Mendes et al., 2018).

Yoga as a Modulator of Immune and Endocrine Responses - Yoga's action on the immune and endocrine systems is mediated by neurophysiological mechanisms, stress hormone control, and epigenetic changes. Practice stimulates the vagus nerve, stimulating parasympathetic activity and increasing the cholinergic anti-inflammatory pathway, inhibiting excessive cytokine production. With regulated breathing patterns, yoga maximizes oxygen use, minimizes oxidative stress, and stabilizes autonomic function. On the endocrine side, yoga has a broad influence on the HPA axis by reducing baseline cortisol levels and enhancing the rhythmic secretion of melatonin and other regulatory hormones. These effects not only decrease systemic inflammation but also boost immune surveillance and tissue repair processes (Arora & Bhattacharjee, 2008).

Yoga also modulates immune cell distribution and function and increases the ratio of regulatory T cells (Tregs) responsible for maintaining immune tolerance and preventing autoimmunity. In addition, research has indicated that yoga decreases markers of oxidative damage and enhances anti-inflammatory cytokine levels such as IL-10, indicating a move towards an anti-inflammatory immune status. By incorporating physical postures with awareness, yoga decreases sympathetic nervous system hyperactivity, which is typically responsible for abetting inflammatory disease. The meditation components strengthen areas of the brain that include the prefrontal cortex and anterior cingulate cortex, both of which are implicated in emotional regulation and thus have indirect effects on immune functioning through Psychoneuroimmunological mechanisms. The net result is better-balanced immune response, decreased chronic load of stress, and better endocrine equilibrium. With these multidimensional advantages, yoga is an effective adjunctive therapy in chronic inflammatory conditions, as it has the ability to treat both the physiological and psychosocial dimensions of disease progression (Gopal et al., 2011).



Fig.2: Yoga and its impact on chronic inflammatory autoimmune arthritis

Sources: <https://www.imrpess.com/journal/FBE/13/1/10.2741/873/htm>

Therapeutic Objectives of Yoga in Amavata Management

Amavata, as defined by Ayurveda, is very much similar to the clinical picture of rheumatoid arthritis, with characteristics of inflammation, stiffness, swelling of joints, and generalized weakness. In Ayurvedic pathology, the etiology is said to be the deposition of Ama (toxins from incomplete metabolism) because of derangement of Agni (fire of digestion), compounded by Vata vitiation, resulting in deposition of toxins within the joints. Yoga, as a holistic therapeutic strategy, is crucial in facilitating Amavata management by confronting both the systemic imbalance and the musculoskeletal manifestations. The overall therapeutic goals are designed to decrease Ama, normalize Agni, enhance mobility, and alleviate pain. These goals complement Ayurvedic principles but integrate the physical, mental, and emotional advantages of Yogic practice (Srirampant, 2015).

Reducing Ama Accumulation and Enhancing Agni - The initial and prime aim in Amavata management is to reduce the creation and depositing of Ama and revive the digestive and metabolic ability (Agni). Yoga enables this by certain asanas, pranayama, and kriyas that stimulate digestion, enhance circulation, and enkindle internal cleansing (Joshi et al., 2023).

Soothing twist poses like Ardha Matsyendrasana and abdominal toning exercises like Pavanamuktasana assist in enhancing peristalsis, nutrient absorption, and elimination of metabolic wastes. Practice of cleansing techniques (Shatkarmas) like Kapalabhati and Agnisar Kriya on regular basis increases digestive fire and hence toxin formation is less likely. Pranayama exercises like Bhastrika and Nadi Shodhana increase oxygenation, enhance metabolism, and stabilize the autonomic nervous system, indirectly enhancing digestive efficiency. Yoga helps regulate Agni to break the vicious circle of Ama formation, thereby preventing inflammation at its origin. Additionally, the present awareness during practice promotes healthier eating behavior and stress reduction, which are of particular importance in regulating the formation of Ama (Khader, 2025).



Fig.3: Agni: The Fire of Life in Ayurveda

Sources: <https://www.amrutayurved.com/sangavi/latest-update/agni-the-fire-of-life-in-ayurveda-in-ayurveda/35>

Improving Mobility and Reducing Pain Symptoms - Amavata significantly interferes with joint flexibility, muscle power, and functional mobility. Stiffness and pain commonly discourage moving, which may result in further decline. Yoga's therapeutic goal in this case is to carefully recover joint range of motion, relax muscular tension, and enhance functional ability without worsening symptoms. Gradual, controlled movements in postures like Tadasana, Bhujangasana, and Marjariasana enhance circulation of synovial fluid, which supplies the cartilage with nutrients and removes metabolic wastes, decreasing stiffness. Careful stretching

preserves elasticity of muscles and contracture prevention, while weight-bearing postures tighten supporting muscles around involved joints (Kan et al., 2016).

Pain relief is obtained through enhanced circulation, decreased inflammation, and stimulation of the body's own pain-modulating system. Relaxation methods such as Shavasana and Yoga Nidra quiet the nervous system, decreasing pain perception and accompanying stress. Integration of the mind and body also helps to end the vicious cycle in which pain produces inactivity, causing further stiffness. In encouraging smooth, sustained movement, yoga not only relieves present symptoms but also facilitates long-term functional independence in patients with Amavata. The twofold therapeutic goals restoring metabolic homeostasis and enhancing physical function therefore act synergistically to control the disease in a comprehensive manner (Neha et al., 2024).

Yoga Asanas for Joint Flexibility and Pain Reduction

Yoga is widely recognized as a therapeutic approach for improving joint flexibility, reducing stiffness, and alleviating chronic pain, particularly in conditions like Amavata (Rheumatoid Arthritis). The gentle stretching, mindful movement, and synchronized breathing in yoga help enhance the range of motion, increase synovial fluid circulation, and relax the muscles surrounding the joints. Unlike high-impact exercises, yoga provides a low-strain method to strengthen supportive tissues, improve balance, and promote overall mobility. By integrating restorative poses and gradual stretching, patients can minimize the risk of exacerbating joint damage while fostering relaxation, which reduces pain perception through neuromuscular modulation (Haaz & Bartlett, 2011).

Recommended Gentle and Restorative Postures - When practicing yoga for joint health, the focus should be on gentle, restorative asanas that maintain comfort and prevent strain. Examples include:

- Tadasana (Mountain Pose): Improves posture, aligns the spine, and activates stabilizing muscles without overloading the joints.
- Bhujangasana (Cobra Pose): Mild back extension that strengthens spinal muscles, enhances flexibility, and opens the chest without excessive wrist or shoulder strain.
- Balasana (Child's Pose): A restorative posture that relaxes the back and hips, relieves tension, and supports joint decompression.
- Supta Baddha Konasana (Reclined Bound Angle Pose): Opens the hip joints and promotes relaxation of surrounding muscles.
- Marjariasana–Bitilasana (Cat–Cow Stretch): Alternating spinal flexion and extension to lubricate vertebral joints and improve mobility.
- Viparita Karani (Legs-Up-the-Wall Pose): Enhances blood circulation and eases lower limb swelling without joint stress.

Props like bolsters, cushions, and yoga straps should be used liberally to provide support and ensure postures are accessible, especially for individuals with limited mobility. Short, frequent sessions are often more effective than prolonged practice for those with chronic joint pain (Büssing et al., 2012).

Safety Considerations for Inflamed Joints

- Practicing yoga with inflamed or arthritic joints requires careful modification to prevent flare-ups and discomfort. Key safety guidelines include:
- Avoid Overstretching: Joints affected by inflammation are more vulnerable to injury; movements should stay within a pain-free range without forcing flexibility.
- Support with Props: Use blocks, bolsters, or chairs to minimize strain on sensitive areas and ensure stability in standing or balancing poses.
- Slow, Controlled Movements: Transition gently between postures to avoid sudden pressure on inflamed joints.
- Mind Breath Awareness: Deep, slow breathing enhances relaxation and reduces muscle guarding around painful joints.
- Warm-Up Gradually: Gentle joint rotations and light stretches before asanas prepare tissues and prevent stiffness.
- Modify During Flare-Ups: On days with increased pain or swelling, choose fully supported, restorative poses over active stretches.
- Medical Guidance: Individuals with severe or unstable joint conditions should seek clearance from a healthcare provider before starting a yoga routine.

By following these precautions and focusing on restorative asanas, yoga can be a sustainable tool for improving joint flexibility and reducing pain without risking further inflammation or injury (Manjunath, 2024).

Pranayama Techniques for Reducing Inflammation and Stress

Pranayama, yoga's science of regulated breathing, has a great role in controlling chronic inflammation and stress disorders. According to scientific research, low oxygenation and stress have the potential to activate inflammatory processes by stimulating the hypothalamic-pituitary-adrenal (HPA) axis and enhancing oxidative stress. By conscious breathing, pranayama increases oxygen supply, enhances blood flow, and induces parasympathetic nervous system dominance, which together decreases inflammation markers like C-reactive protein and pro-inflammatory cytokines. Anulom Vilom (alternate nostril breathing), Bhramari (humming bee breath), and Kapalabhati (cleansing breath) are especially beneficial in soothing the mind and decreasing physiological load of stress (Jayawardena et al., 2020).

Breathing Exercises to Increase Oxygenation and Perfusion - Pranayama methods allow for rhythmical, diaphragmatic breathing that enhances alveolar ventilation and arterial oxygenation. Techniques like Bhastrika (bellows breath) and Ujjayi breathing with exhalations are prolonged to increase lung capacity, enhance arterial oxygenation, and cause vasodilation, thus improving peripheral circulation. Increased circulation provides effective delivery of nutrients and oxygen to tissues and removal of metabolic end products, decreases cellular stress, and enhances healing in inflammation. Enhanced oxygenation also enhances mitochondrial function, which is central to reducing oxidative damage a significant contributor to chronic inflammation (Dwijendra, 2021).

Regulation of Stress Hormones by Regulated Breathing - Chronic stress increases cortisol and adrenaline levels, not only affecting mood but also stimulating systemic inflammation. Regulated breathing during pranayama stimulates the vagus nerve, moving the body from a "fight-or-flight" sympathetic state into a "rest-and-digest" parasympathetic state. Slowing and rhythmic breathing rhythms like Sama Vritti (symmetrical breathing) and Nadi Shodhana decrease heart rate variability and inhibit overactivation of the HPA axis. This results in measurably decreased circulating cortisol, lower inflammatory cytokines, and an evened-out hormonal balance. With prolonged practice, pranayama enhances emotional strength, decreases anxiety, and sustains a healthier immune state, making it a useful adjunct therapy in inflammation and stress management (Tsigos et al., 2000).



Fig.4: Yoga helps to improve various health parameters related to immunity

Sources: <http://bmccomplementmedtherapies.biomedcentral.com/articles/10.1186/s12906-022-03666-2>

Meditation and Mind-Body Connection in Autoimmune Disorders

Autoimmune diseases, including rheumatoid arthritis, lupus, and multiple sclerosis, result from the body's immune system mistakenly attacking its own tissues. New research emphasizes the major role played by the mind-body relationship in treating these diseases. Meditation, an integral mind-body intervention, assists in control of the body's stress response, affecting hormonal equilibrium, immune modulation, and overall health. Through stimulation of the parasympathetic nervous system, meditation decreases chronic stress, a recognized autoimmune flare trigger. Meditative habits can increase pain tolerance, build emotional strength, and promote optimism factors directly linked to improved disease management (Sharma, 2024)."

Mindfulness Practices for Emotional Regulation - Mindfulness meditation focuses on non-judgmental perception of thoughts, feelings, and bodily sensations. Emotional stress in autoimmune patients frequently exacerbates symptoms and affects treatment response. Mindfulness techniques, including awareness of breath, body scan, and guided imagery, enable one to identify stressors and react calmly instead of acting impulsively. This enhances emotional control by reducing cortisol levels and stabilizing mood. Research has demonstrated that mindfulness is able to decrease anxiety, depression, and fatigue in patients with autoimmune diseases, enhancing quality of life. These practices increase emotional resilience over time, allowing the patients to deal more effectively with the challenges of chronic illness (Nobakht et al., 2022).

Reducing Autoimmune Flare-Ups through Mental Calmness - Mental calmness induced by meditation has a direct effect on physiological functions associated with autoimmune flare-ups. Stress activates pro-inflammatory pathways, elevating pro-inflammatory cytokines, which can flare up symptoms. Meditation decreases such inflammatory markers, enhancing immune system control. Methods like transcendental meditation, loving-kindness meditation, and yoga nidra promote deep relaxation, reducing musculature tension and sleep quality both critical for minimizing the frequency of flare-ups. Regular practice also fosters neuroplastic changes within the brain's stress-response regions, rendering individuals less reactive to stimuli. This body-mind synchrony decreases the risk of relapse, enhances medical treatment, and supports long-term disease stability (Moreno, 2024).

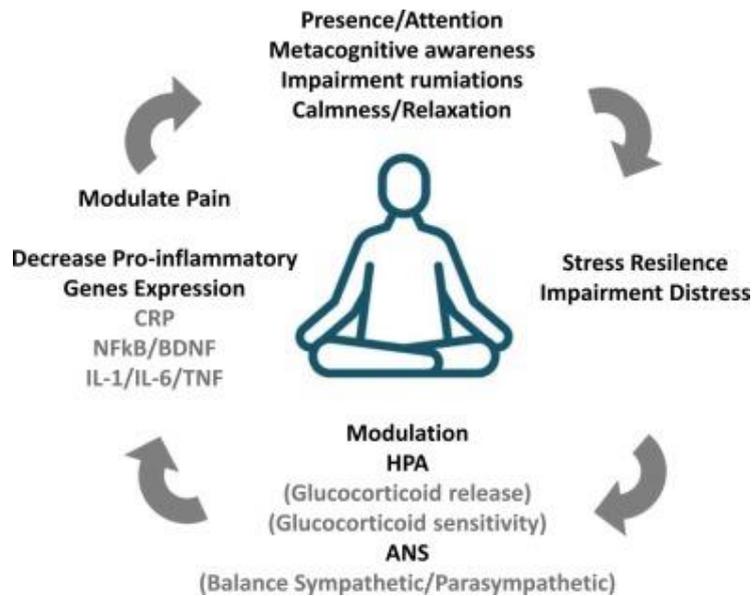


Fig.5: Modulation of inflammatory response and pain by mind-body therapies as meditation

Sources: <https://www.sciencedirect.com/science/article/pii/S2949834123000351>

Integration of Yoga with Ayurvedic and Allopathic Treatments

Yoga, combined with Ayurvedic and Allopathic therapies, provides a synergistic method of treatment for chronic diseases like Amavata (Rheumatoid Arthritis). Ayurveda treats it through detoxification, dosha balancing, and rejuvenation of digestive health through herbal formulations, Panchakarma, and dietary control, whereas Allopathy treats it with pharmacological means to suppress pain, inflammation, and autoimmune activity. Yoga fills the gap between the two by increasing physical flexibility, mental toughness, and physiological equilibrium. This integrated care not only treats symptoms but also tackles causative factors, resulting in enhanced quality of life (Sushma et al., 2022).

Complementary Role in Pain and Inflammation Management - In Ayurvedic practice, yoga poses such as Tadasana, Bhujangasana, and Vrikshasana enhance joint mobility and circulation to eliminate ama (inflammation-causing toxins). From the Allopathic point of view, consistent practice of yoga enhances parasympathetic activity, lowers cortisol levels, and regulates inflammatory cytokines and decreases pain perception. Controlled breathing (pranayama) and relaxation therapies supplement both Ayurvedic anti-inflammatory plant products (such as Ashwagandha and Guggul) and Allopathic drugs such as NSAIDs or DMARDs, possibly lowering their dosage and side effects (Kala2, 2019).

Improvement in Treatment Outcomes with Holistic Care - Holistic synthesis of Yoga with Ayurveda and Allopathy improves patient compliance, minimizes relapse rates, and ensures mental well-being. For example, Ayurvedic treatments purify and nourish tissues, Allopathy offers immediate symptomatic relief, and Yoga enhances musculoskeletal strength and mental lucidity, thereby maintaining long-term benefits. Mindfulness meditation enables stress reduction, which is imperative in autoimmune diseases where stress precipitates flare-ups. Research shows that patients receiving integrative care have improved functional mobility, reduced inflammatory markers, and increased emotional stability when compared to those who receive single-modality treatment. This leads to the holistic approach being in line with the international movement toward patient-centered, multidisciplinary treatment to guarantee physical, mental, and emotional well-being are taken care of in an equal way (Sunil Kumar Verma, Minakshi Pandey, 2024).

CONCLUSION

In conclusion, the systematic review underscores that therapeutic yoga offers a safe, effective, and holistic adjunct to conventional management of *Amavata* (Rheumatoid Arthritis), addressing both the physiological and psychosocial dimensions of the disease. By integrating gentle *asanas*, *pranayama*, meditation, and relaxation techniques, yoga facilitates joint flexibility, reduces stiffness, and modulates inflammatory processes while enhancing mental resilience and emotional well-being. The Ayurvedic perspective emphasizes correcting the root cause *Ama* accumulation and *Vata* imbalance through lifestyle, diet, and detoxification, while modern medicine targets immune modulation and inflammation control through pharmacotherapy. Yoga bridges these paradigms by enhancing metabolic efficiency, strengthening supportive musculature, and regulating neuroendocrine-immune interactions, thereby reducing pain perception and inflammatory markers. Furthermore, when integrated with Ayurvedic detoxification therapies and allopathic medications, yoga improves treatment adherence, minimizes drug dependence, and supports long-term remission by preventing flare-ups.

The review highlights evidence that yoga positively influences cytokine profiles, lowers stress hormones, and fosters patient empowerment through self-management skills. Safety considerations, such as modifications for inflamed joints and

gradual progression, ensure suitability for diverse patient populations. This integrative approach aligns with global trends in patient-centered care, emphasizing not only symptom relief but also functional restoration, psychological stability, and enhanced quality of life. Overall, therapeutic yoga when personalized and supervised emerges as a non-invasive, cost-effective, and empowering strategy for *Amavata*/RA management, complementing existing medical systems and offering a sustainable pathway toward improved health outcomes and holistic well-being.

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