NATIONAL AYUSH MISSION KERALAM

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# സ്വാസ്ഥ്യ

# SWASTHYA

## NEWS LETTER

FEBRUARY-MARCH 2026

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# സ്വാസ്ഥ്യ SWASTHYA NEWS LETTER

FEBRUARY-MARCH 2026

AYUSH

## Inside

# IRIA INAUGURATED

## A NEW ERA FOR EVIDENCE BASED AYURVEDA

The International Research Institute of Ayurveda (IRIA), a landmark initiative of the Government of Kerala, was formally inaugurated on 25 February 2026 by Sri. Pinarayi Vijayan, Hon'ble Chief Minister of Kerala. Located at Kalliad in Kannur district, the institute represents a significant milestone in Kerala's long-standing commitment to strengthen Ayurveda through rigorous research, innovation and global collaboration.

### Responding to Global Health Challenges

The establishment of IRIA marks a decisive step towards positioning Ayurveda within the framework of contemporary scientific inquiry and global public health. At a time when health systems across the world are grappling with complex challenges such as ageing populations, the increasing burden of chronic and lifestyle-related diseases, emerging infections, and environmental health risks, there is a growing recognition of the need to draw upon diverse knowledge systems to develop sustainable healthcare solutions. In this evolving global health landscape, Ayurveda - one of the world's oldest medical systems - offers a rich repository of knowledge on preventive health, personalised care and holistic wellbeing.

### From Tradition to Scientific Validation

Global relevance today requires more than just historical legacy. It demands scientific validation, systematic research and transparent knowledge generation. It is precisely in response to this need that IRIA has been conceived. Envisioned as a global centre for transdisciplinary and translational research, the institute seeks to bridge the classical wisdom of Ayurveda with modern scientific methodologies, thereby creating a credible and evidence-based foundation for the system in contemporary healthcare.


## A Comprehensive Research Ecosystem

Spread across an expansive 300-acre campus, IRIA has been designed as a comprehensive research ecosystem that integrates patient care, laboratory research, knowledge preservation and public health engagement. The institute functions as an autonomous body under the Government of Kerala, ensuring both academic freedom and strong public accountability. Its governance framework emphasises transparency, ethical standards and quality assurance in research, reflecting the state's commitment to responsible scientific advancement.

## Six Pillars of Research Excellence - The Key Departments

IRIA functions through six specialised departments that together address major research and knowledge domains of Ayurveda:

1. Department of Ayurvedic Biology and Translational Ayurveda
2. Department of Medicinal Plants and Natural Products
3. Department of Translational Drug Research in Ayurveda
4. Department of Clinical and Public Health Research
5. Department of Health Heritage, Museums and Manuscripts
6. Department of Information, Commucation and Technology Services

## Kerala's Tradition of Medical Pluralism

Kerala has long been recognised for its unique tradition of medical pluralism, where different systems of medicine coexist and complement one another within the broader public health framework. Ayurveda, in particular, has played a significant role not only as a therapeutic system but also as a philosophy of healthy living. Preventive practices, dietary guidelines, seasonal regimens and rehabilitative therapies rooted in Ayurvedic principles continue to influence health-seeking behaviour


among people across different socio-economic groups in the state.

## Bridging Knowledge Systems

Despite this rich legacy, research in Ayurveda has often remained fragmented, with limited interaction between traditional practitioners and modern scientific disciplines. This has constrained the ability of Ayurveda to engage meaningfully with global research frameworks. IRIA has been conceptualised precisely to address this gap by creating a platform where classical knowledge, clinical practice and contemporary science can interact constructively.

## Advancing Translational Ayurveda

A key highlight of IRIA is its emphasis on translational research. Ayurveda traditionally operates on principles of personalised care, prevention and the understanding of an individual's prakriti—the psychosomatic constitution shaped by biological, environmental and behavioural factors. Translating these concepts into scientifically measurable frameworks requires collaboration across multiple disciplines, including biomedical sciences, pharmacology, biochemistry, genetics, and data sciences. IRIA seeks to create precisely such a collaborative environment, enabling researchers and clinicians to jointly explore the scientific basis and therapeutic potential of Ayurvedic interventions.

## Infrastructure and Phase 1 Development

The first phase of the institute, developed with a total investment of approximately Rs. 200 crore, brings several important facilities into operation. At the heart of the campus is a 100-bedded research hospital and model patient care centre, which will function not only as a treatment facility but also as a space for systematic clinical documentation and research - based practice. The hospital

will generate real-world clinical evidence that can inform treatment protocols and contribute to the development of standardised care models in Ayurveda.

## Preserving Knowledge: Manuscript Studies

Another important component is the Manuscript Studies Centre, dedicated to identifying, preserving and digitising rare medical manuscripts and traditional texts. Kerala possesses a vast heritage of palm-leaf manuscripts and community-held medical knowledge that has accumulated over centuries. By documenting and scientifically examining these sources, IRIA seeks to transform valuable traditional knowledge into research questions and scholarly resources.

## Medicinal Plants and Sustainability

Complementing these initiatives is the Medicinal Plant Nursery and Research Centre, which focuses on the conservation, cultivation and scientific study of medicinal plants. Sustainable availability of quality raw materials remains a critical requirement for the growth of Ayurveda-based therapeutics. The institute therefore places significant emphasis on biodiversity conservation, agroforestry practices and ecological sustainability.

## Focus Areas: Ageing and Cancer

In its initial phase, IRIA will prioritise research on ageing and cancer, two areas that pose major challenges to health systems worldwide. With increasing life expectancy and a growing prevalence of chronic illnesses, the need for integrative care approaches has become more pronounced. Ayurveda's emphasis on preventive health, lifestyle management, long-term wellness and supportive therapies offers promising possibilities in these areas. Through systematic research and interdisciplinary collaboration, IRIA aims to explore how these principles can contribute to integrative care strategies for ageing populations and individuals living with cancer.


## Implications for Public Health

Beyond its research mandate, IRIA also holds important implications for public health policy. Kerala's health system has consistently emphasised prevention, community participation and equity. Integrating scientifically validated Ayurvedic interventions into public health frameworks can help strengthen cost-effective and culturally acceptable healthcare strategies. Evidence generated through IRIA's research is expected to inform programme design, clinical guidelines and policy development in the years ahead.

## Towards Global Leadership in Ayurveda

Looking forward, IRIA aspires to evolve into a globally recognised centre of excellence for Ayurveda research. The institute aims to foster international collaborations, contribute to peer-reviewed scientific literature and nurture a new generation of researchers capable of working across disciplinary boundaries. By bringing together Ayurvedic scholars, biomedical scientists, ecologists, social scientists and public health experts, IRIA seeks to create a vibrant intellectual environment that encourages dialogue and innovation.

## Shaping the Future of Integrative Healthcare

The inauguration of IRIA therefore marks far more than the opening of a new institution. It represents the beginning of a long-term effort to strengthen Ayurveda through evidence generation, responsible research and global engagement. Rooted in Kerala's rich traditions yet oriented towards the future, the institute embodies the belief that tradition and modern science need not exist in opposition. Instead, when brought together thoughtfully and responsibly, they can complement each other in shaping more holistic, sustainable and inclusive healthcare systems. As IRIA begins its journey, it carries with it the hope that Ayurveda - supported by rigorous research and scientific validation - will contribute meaningfully to the evolving global conversation on integrative health and the future of medicine.

# Restoring Mobility, Renewing Lives

## NPPMOMD in Kerala

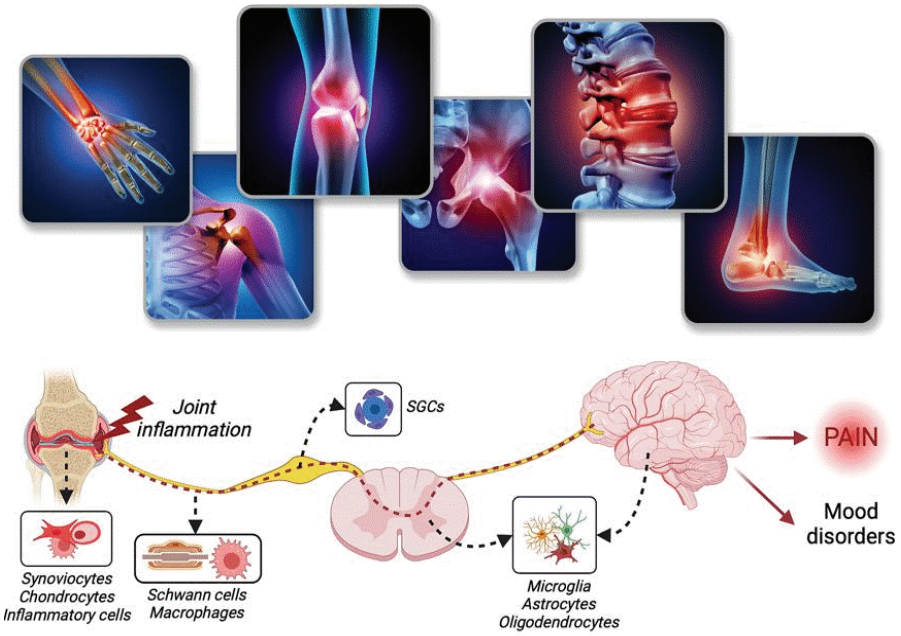
**Dr. Manju Sanilkumar**
Project Coordinator(ISM), DPMSU,
NAM Kollam

In Kerala, Ayurveda has long been an integral part of healthcare, extending beyond treatment to encompass a holistic way of living. Its principles emphasise prevention, balance, and long-term well-being, making it particularly relevant in addressing chronic conditions. Among these, musculoskeletal disorders - especially osteoarthritis - have become increasingly prevalent, affecting mobility, independence, and quality of life, particularly among adults and the elderly.

Despite the growing need for effective and accessible care, many individuals face challenges in managing these conditions due to limited awareness, delayed diagnosis, and inadequate access to structured, long-term treatment services. Recognising this gap, the Department of Ayurveda under the ISM framework, through the National AYUSH Mission (NAM), Kerala, implemented the National Program for Prevention and Management of Osteoarthritis and other Musculoskeletal Disorders (NPPMOMD). This initiative focuses on delivering comprehensive, outpatient-based care through Ayurveda units across government health facilities, bringing preventive, therapeutic, and rehabilitative services closer to the community and improving access to quality musculoskeletal care.

### A Comprehensive Approach to Musculoskeletal Health

The NPPMOMD programme represents a shift from a purely curative model to a more holistic framework that emphasises prevention, early detection, management, and rehabilitation. Grounded in the principles of AYUSH systems, the programme integrates pharmacological interventions with non-pharmacological approaches such as physiotherapy, yoga, dietary regulation, and lifestyle modification. The Standard Operating Procedure (SOP) developed for the programme ensures uniform implementation across the state by




clearly defining roles, responsibilities, service delivery mechanisms, and monitoring systems. Through this structured approach, the programme seeks not only to treat osteo-arthritis and related conditions but also to empower individuals with the knowledge and tools necessary for self-care and long-term health maintenance.

## Reaching Communities, Transforming Care

Implemented through AYUSH Health and Wellness Centres, dispensaries, and hospitals, the programme operates on a well-defined service delivery model. Each unit, consisting of a Medical Officer and a Multipurpose Worker, provides outpatient and inpatient services, conducts regular follow-ups, and ensures patient education. The integration of physio-therapy and yoga into routine care has been a key strength of the programme, enabling a more comprehensive approach to musculo-skeletal health. In addition to facility-based services, the programme places strong emphasis on community outreach. Weekly awareness classes, screening camps, and targeted interventions among vulnerable populations such as elderly groups, labourers, and residents of remote areas have signifi-cantly expanded the reach of services, bring-ing care closer to those who need it the most.

## Operational Units of NPPMOMD in Kerala

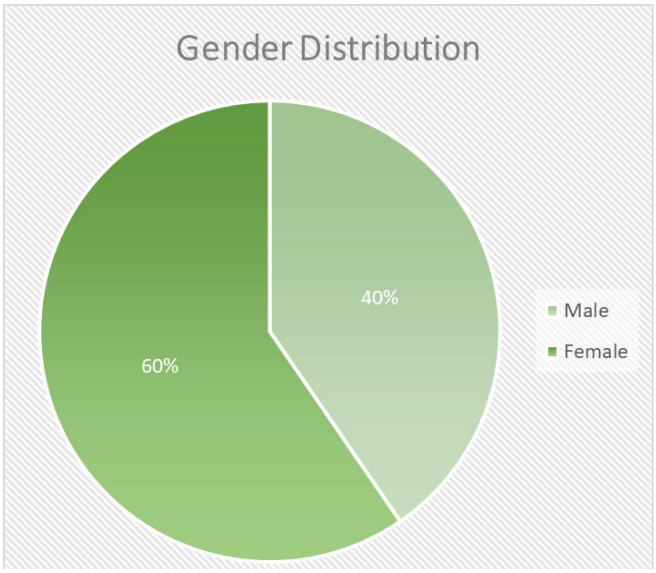
The NPPMOMD Programme was initially imple-mented through sixteen (16) units across the State of Kerala, ensuring coverage in fourteen districts, with the remaining two units estab-lished at Government Ayurveda College, Thiruvananthapuram, and Government Ayurveda College, Thrippunithura, Ernakulam district. This implementation was designed to ensure equitable geographical distribution and effective delivery of geriatric healthcare services through the Ayurvedic system of medicine.

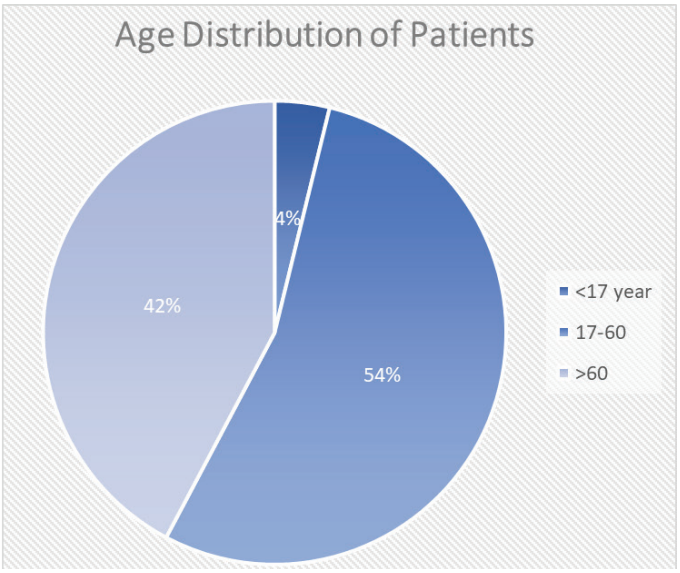
| District | Institution Name |
|---|---|
| Thiruvananthapuram | GAMH Kanjiramkulam Thiruvananthapuram |
| Kollam | GAH Kottarakara, Kollam |
| Pathanamthitta | GAH Kadampanadu, Pathanamthitta |
| Alappuzha | GAH Mavelikara, Alappuzha |
| Kottayam | GAH Pala, Kottayam |
| Idukki | GAH Annex, Paremavu, Idukki |
| Ernakulam | GAH, Aluva Ernakulam |
| Thrissur | GAH, Kodakara, Thrissur |
| Palakkad | GAH Ottapalam, Palakkad |
| Malappuram | GAH Vengara, Malappuram |
| Kozhikode | GAH, Pannikkottur, Kozhikode |
| Wayanad | TAH Sulthanbathery, Wayanad |
| Kannur | TAH Thaliparamba, Kannur |
| Kasargode | GAH Madikkai, Kasargode |
| Thiruvananthapuram | Govt. Ayurveda College TVM |
| Ernakulam | Govt. Ayurveda College Thrippunithura |
| Malappuram | VPSV AVC Kottakkal |
| Kannur | GAVC Pariyaram |
| Thrissur | Vaidyaratnam Ayurveda College |

Subsequently, in November 2025, the programme was further expanded with the establishment of three additional units at Government Vaidyaratnam Ayurveda College, Thrissur; Government Ayurveda College, Pariyaram, Kannur; and Vaidyaratnam PS Varier Ayurveda College, Kottakkal, Malappuram district.

### Impact & Outcomes : 2025-26

The impact assessment of the National Program for Prevention and Management of Osteoarthritis and Musculoskeletal Disorders (NPPMOMD) for the year 2025–2026 clearly demonstrates the programme's significant contribution to improving musculoskeletal health across Kerala. A total of 50,086 cases were managed through 16 functional units, reflecting both the high burden of osteoarthritis and the growing acceptance of AYUSH-based interventions among the population. The programme has successfully ensured continuity of care, with a balanced distribution of 26,044 new cases and 24,042 follow-up cases, indicating effective long-term management of chronic conditions.



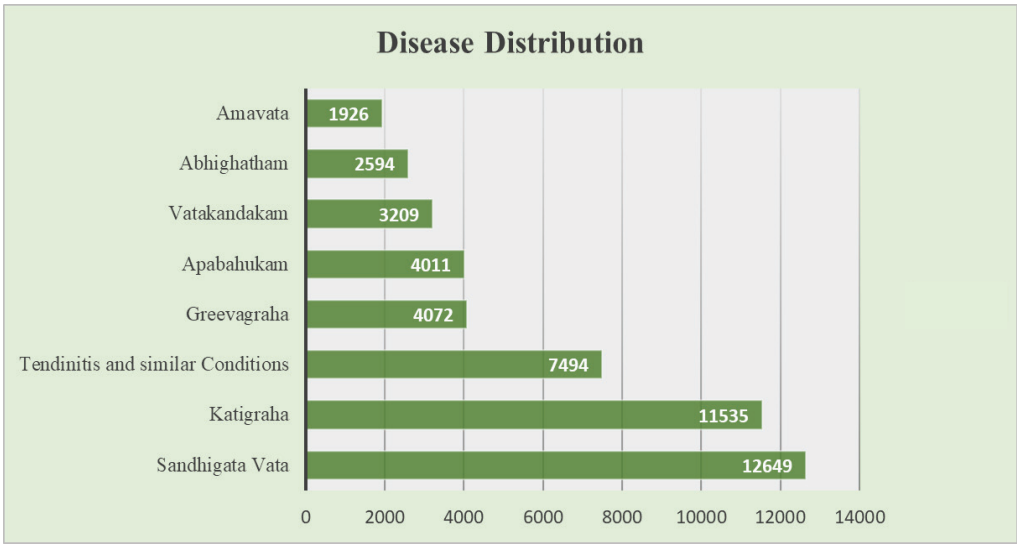

The project has shown a strong demographic reach, particularly among women and middle-aged and elderly populations, who constitute the majority of beneficiaries. Female participation accounts for 60%, indicating a higher disease burden as well as greater health-seeking behaviour among women.

The age-wise distribution further reveals that a substantial proportion of beneficiaries belong to the working-age group and elderly population, emphasising the programme's role in improving productivity as well as promoting healthy ageing.

From a clinical perspective, the programme effectively addressed a wide range of musculoskeletal conditions. Sandhigata Vata and Katigraha account for the majority of cases, indicating a high burden of joint and low back disorders. Tendinitis and similar conditions also contribute a significant share. Neck and shoulder conditions such as Greevagraha and Apabahukam form a moderate proportion, while Vatakandakam, Abhighatham, and Amavata represent comparatively fewer cases. Overall, the trend highlights the predominance of chronic, Vata-related disorders requiring focused management and rehabilitation.

## Strengthening Community Outreach

One of the most notable achievements of **NPPMOMD** is its strong community outreach component. During the reporting period, 291 awareness classes and 118 medical camps were conducted, benefiting 19,654 individuals. Awareness activities accounted for nearly 68.6% of outreach efforts, indicating a clear




No. of Awareness Classes

**291**

No. of Beneficiaries in Awareness Classes

**13199**

No. of medical camps conducted

**118**

No. of beneficiaries in Medical camps

**6046**

emphasis on preventive health education and early detection. These initiatives have significantly improved community awareness, encouraged early care-seeking behaviour, and enhanced accessibility of services, especially among underserved populations.

## Improving Quality of Life

The programme has also demonstrated measurable improvements in patient outcomes and satisfaction. A large majority of beneficiaries reported positive treatment outcomes, with most experiencing noticeable improvement within a short duration of care.

The structured approach involving patient education, lifestyle modification, physiotherapy, and yoga has contributed to improved quality of life, reduced pain, and enhanced mobility. Furthermore, the affordability of services has ensured inclusivity, with most patients accessing care at minimal cost, thereby reducing the economic burden associated with chronic musculoskeletal conditions.

## Conclusion

The **NPPMOMD** programme has evolved into a comprehensive, patient-centred public health model, effectively integrating prevention, treatment, and rehabilitation. By strengthening service delivery at both institutional and community levels, the programme has significantly improved access to care, enhan ced patient satisfaction, and contributed to better health outcomes. The success of NPPMOMD underscores its potential as a scalable and sustainable model for addressing the growing burden of osteoarthritis and musculoskeletal disorders, not only in Kerala but across the country.

# DIGITAL HEALTH, AI & AYUSH

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The advancement of digital health and artificial intelligence (AI) in AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy) is rapidly reshaping the medicine and helping the health care the best way. AYUSH systems emphasize individualized care, polyherbal formulations, and complex multimodal interventions (diet, lifestyle and therapies).

AI and digital health can accelerate science by (a) converting traditional textual knowledge into machine-readable formats, (b) discovering patterns in heterogeneous clinical and molecular data, and (c) delivering personalized decision support and quality assurance across supply chains.

## Major application areas

### *Digitization and knowledge preservation*

Projects that digitize classical treatises and create structured knowledge bases (ontologies, terminologies) are foundational. AI/NLP (natural language processing ) converts Sanskrit/vernacular textual knowledge into searchable, indexed and standardized repositories there by enabling text mining, cross-referencing of herbs, formulations and indications. National and institutional efforts (including Traditional Knowledge Digital Library (TKDL)-like initiatives and Ayush Grid components) have focused on making traditional knowledge machine-readable.

### *Prakriti classification and Ayurgenomics (precision AYUSH)*

One major promise is integrating Ayurvedic constitutional types (Prakriti) with genomics, metabolomics and clinical data — "Ayurgenomics." Machine learning models trained on multi-omic datasets and clinical phenotypes can test hypotheses about genetic correlates of prakriti, enable risk stratification and guide personalized lifestyle/therapy recommendations. Several peer-reviewed reviews and original studies outline frameworks and early findings


supporting correlations between prakriti and genomic markers.

***Clinical decision support systems (CDSS) and diagnosis***

AI/ML models (classification, clustering, explainable models) are being developed to support Ayurvedic diagnosis (e.g., dosha imbalance, prakriti) and to triage or stratify patients for integrated care. Examples include ML-based CDSS for Ayurvedic management of gestational diabetes and pilot systems for pattern recognition in homeopathy. Early studies report feasibility and potential to standardize assessments, though large external validations are still limited.

***Drug discovery & formulation optimization***

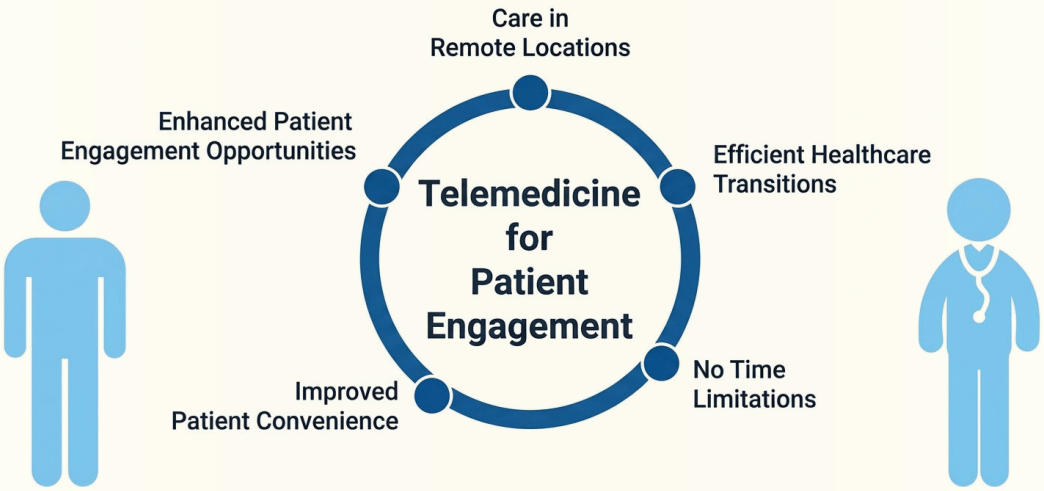
AI accelerates phytochemical profiling, target prediction, and optimization of multi-ingredient herbal formulations using in silico screening, network pharmacology, and ML models that predict interactions and safety signals. These approaches can reduce cost/time for preclinical evaluation and suggest mechanistic hypotheses that can be tested experimentally.

***Quality control, supply chain integrity & adulteration detection***

Computer vision, spectroscopy + ML, and metabolomic fingerprinting help authenticate raw botanicals, detect adulteration and verify geographic origin — crucial for the safety and efficacy of AYUSH medicines. Recent institute-level work has produced AI-assisted methods with high accuracy for detecting adulteration and species identification.

***Remote care, telemedicine & patient engagement***

Digital platforms and mobile apps integrate symptom logging, wearable data, teleconsultation and AI-driven triage to extend AYUSH services at scale. Integration with national digital health frameworks enables record




portability, outcome tracking and analytics for population health.

## Technologies and methods in use

- ***Natural Language Processing (NLP):*** tokenization, named-entity recognition and ontology mapping applied to classical texts and clinical notes.

- ***Supervised & Unsupervised Machine Learning:*** classification of prakriti, clustering of symptom patterns, stratification for treatment.

- ***Deep Learning & Computer Vision:*** plant/leaf recognition, chromatogram and spectral analysis for authentication.

- ***Multi-omics & Network Pharmacology:*** integrating genomics, transcriptomics, metabolomics with herbal constituent networks.

- ***Explainable AI (XAI):*** needed to present mechanistic or rule-like explanations for recommendations in AYUSH contexts.

- ***Edge AI & Handheld Devices:*** portable spectrometers or scanners that use on-device ML for field authentication of botanicals.

## Regulatory, ethical & safety considerations

- ***Data privacy & interoperability:*** Integration with national digital health frameworks (NDHM/NDHB) must ensure patient consent, privacy, and secure data handling when AYUSH records are digitized and used for ML.

- ***Clinical safety & validation:*** AI systems that recommend therapies must be rigorously validated, with human-in-the-loop oversight and post-deployment monitoring (pharmacovigilance for herbal products).

- ***Bias and generalizability:*** Models trained on narrow populations may perform poorly across different ethnicities, languages, or regional practice patterns — careful external validation and fairness audits are essential.

- ***Intellectual property & traditional knowledge protection:*** Digitization must respect community rights and avoid biopiracy; initiatives that document and protect TK (Traditional Knowledge Digital Library approaches) are relevant.

## Challenges to scaling AI in AYUSH

- ***Data standardization and ontologies:*** Lack of standardized terminologies for AYUSH

- ***Quality & volume of labeled data:*** Large, well - annotated multi - modal datasets (clinic + labs + omics) are scarce.

- ***Evidence generation:*** Need for pragmatic trials, registries and reproducible pipelines to move from pilot to practice.

- ***Interdisciplinary workforce:*** Bridging traditional practitioners, clinicians, data scientists and regulators requires training and collaborative platforms.

- ***Regulatory clarity:*** AI tools for diagnosis/therapy must fit into medical device / health software regulatory frameworks adapted for AYUSH contexts.

## Practical roadmap & recommendations

- Create interoperable AYUSH EHR templates mapped to standard ontologies (link to NDHM/NDHB) so AYUSH data can be used for ML while preserving semantics.

- Establish curated multi-center registries (clinical + outcomes + biospecimens) for priority conditions (e.g., metabolic disorders, musculoskeletal problems, mental health) to power high-quality ML studies.

- Prioritize explainability & clinician-centric design — use XAI methods and deploy AI as decision support (not replacement), with clear documentation of intended use and limitations.

- Invest in fieldable QA tools (handheld spectrometers + on-device ML) for botanical authentication to protect supply chains and patients.

- Support cross-disciplinary training programs that pair AYUSH clinicians with data scientists; provide funding incentives for reproducible research and multi-site trials.

- ***Regulatory & ethical governance:*** co-develop guidance for AI tools in AYUSH with regulators (Ministry of AYUSH, CDSCO, NDHM stakeholders), including validation standards and post-market surveillance.

## Future directions

- Hybrid clinical trials that test AI-augmented AYUSH interventions alongside modern medical care, collecting digital biomarkers and patient-reported outcomes.

- Scaled Ayurgenomics cohorts combining genomics, metabolomics and lifestyle data to build robust predictive models for disease risk and therapy response.

- Global collaboration and data commons to enable comparative studies across traditional systems (e.g., Ayurveda and Traditional Chinese Medicine) while protecting IP and community rights.

- AI-assisted personalized prevention packages (diet, yoga and lifestyle) delivered via mobile health platforms integrated into national digital health ecosystems.

# Ayurveda for Relief from Chronic Inflammatory Diseases

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Chronic inflammation is a long lasting, dysregulated, and destructive immune response that persists for weeks to years. Chronic inflammation is also associated with many different diseases including cancer, cardiovascular diseases, diabetes, diseases affecting bone strength, asthma etc. Diseases associated with chronic inflammatory conditions account for approximately 60% of all deaths in India. Statistics indicate that about 195 million Indians (that is 1 in every 6 citizens) are adversely affected by arthritis-related pain. This has a serious impact on the health and well-being of people. Chronic respiratory and kidney diseases, inflammatory bowel disease, Asthma are all very common among Indian population. Chronic inflammation is a condition which switches on many molecular markers; hence it often adversely affects multiple systems resulting in numerous diseases. Although many drugs are available for these conditions, most of them have been reported to cause side effects in the long run and has been withdrawn from the market. This is where, Ayurveda, a pharmacopeia based on phytoconstituents and herbal preparations, marks a major contribution.

Ayurveda is a traditional practice aimed to attain health and well-being through medicinal plants and healthy life-style practices. Since, chronic inflammation arises from a complex interplay of poor diet, sedentary and stressful lifestyle, smoking and alcohol consumption, chronic infections, obesity, gut microbiome imbalance and lack of sleep, maintaining a healthy lifestyle along with ayurvedic treatment can significantly benefit the affected community.

## Ayurvedic Perspective on Chronic Inflammation

Ayurveda is mainly based on the principle of Tridosha – Vata, Pitta and Kapha.The primary step in ayurvedic treatment includes analysing these three doshas and recommending

suitable decoctions or herbal preparations to balance these doshas. A balance in Tridosha brings health and a state free of illness. Imbalance in Vata, Pitta and Kapha varies greatly among people. Hence, Ayurvedic practitioners have been making use of personalised-medicines for bringing better care to the patients. Ayurveda focuses on holistic approach, by giving equal importance to the mind, body and spirit for mental, physical and spiritual well-being. Ayurvedic formulations were very effective in the treatment of different classes of diseases connected with chronic inflammation. It includes autoimmune diseases like Rheumatoid arthritis which mainly affects joints, inflammatory bowel disease and hepatitis affecting gut and liver respectively, metabolic diseases like diabetes, obesity, respiratory disorders including Asthma, bronchitis, Neurological conditions such as Alzheimer's disease and Parkinson's diseases.

## Key Medicinal Plants for Chronic inflammatory conditions

The medicinal plants are the most important factor of Ayurveda, Unani and Siddha. Some plants that are of particular importance in treating chronic inflammatory diseases include turmeric (*Curcuma longa*), holy basil (*Ocimum sanctum*), and neem (Azadirachta indica) etc. The bioactive component of turmeric, curcumin, has been reported to have tremendous therapeutic properties. The anti-inflammatory, antioxidant, and anticancer activities of curcumin are well established through numerous research works. Turmeric is a common ingredient in most of the Indian cuisine and curcumin present in it is reported to decrease the impact of arthritis, diabetes and certain types of cancers. Damage caused by free radicals may be reduced by the consumption of turmeric. This is one of the most extensively studied plants for its protective effect on chronic inflammatory diseases. *Adhatoda vasica* is another well-known plant utilized in Ayurveda as well as Unani system of

medicinal practices. Vasicine and vasicinone are the biologically active constituents from this plant. Numerous studies have revealed that *Adhatoda vasica* has immense medicinal properties and is therapeutically effective against many diseases like bronchitis, asthma, cough and arthritis. The plant is very effective in suppressing a large number of molecular markers that leads to chronic inflammatory diseases. Further studies in mice models have demonstrated its therapeutic effects. *Ezhilam Pala (Alstonia scholaris)* is a traditionally valuable medicinal plant with immense role in the Ayurveda, Homoeopathy, Unani and Siddha medicinal systems to cure chronic inflammatory diseases. The bioactive constituents from *Alstonia scholaris* are mainly three alkaloids - picrinine, vallesamine and scholaricine. These play an important role in inducing anti-inflammatory and analgesic effects. The study was also conducted in mice models to confirm the efficacy obtained in other tests. Similarly, many different plants were studied and extensively used in Ayurvedic preparations. The efficacy of these formulations for their therapeutic effect is proven over time again and again.

## Ayurvedic Management

The herbal formulations in Ayurveda basically work on balancing Agni, eliminating Ama, and restoring Doshas. Lightening therapy like Langhana, detoxification by Panchakarma and Amapachana, strengthening by Deepana and repair and immunomodulation through Rasayana therapy form the core of ayurvedic treatment procedures. Proper diet, lifestyle, and Panchakarma form the foundation of Ayurvedic management for treating chronic inflammatory diseases. Diet and Lifestyle for Modulating Inflammation. Diet plays a central role in the modulation of chronic inflammation

through Ayurveda. Whole plant-based foods that are rich in antioxidants, polyphenols, fiber, vitamins, and minerals are heavily recommended as they can reduce oxidative stress and support a healthy gut microbiome. Healthy fat sources such as ghee, extra-virgin olive oil and coconut oil and omega-3–rich foods like flaxseed, chia seeds, walnuts, and fatty fish are inevitable for anti-inflammatory properties. Turmeric, ginger, garlic, cumin, coriander, fennel etc. have potent immune modulatory actions. Adequate fiber intake is also necessary for improving gut health, regulating blood sugar, and reducing inflammation. Lean protein, probiotics and prebiotics are also essential for tissue repair, metabolic and immune function.

***Integrative Approach: Ayurveda and Modern Medicine***

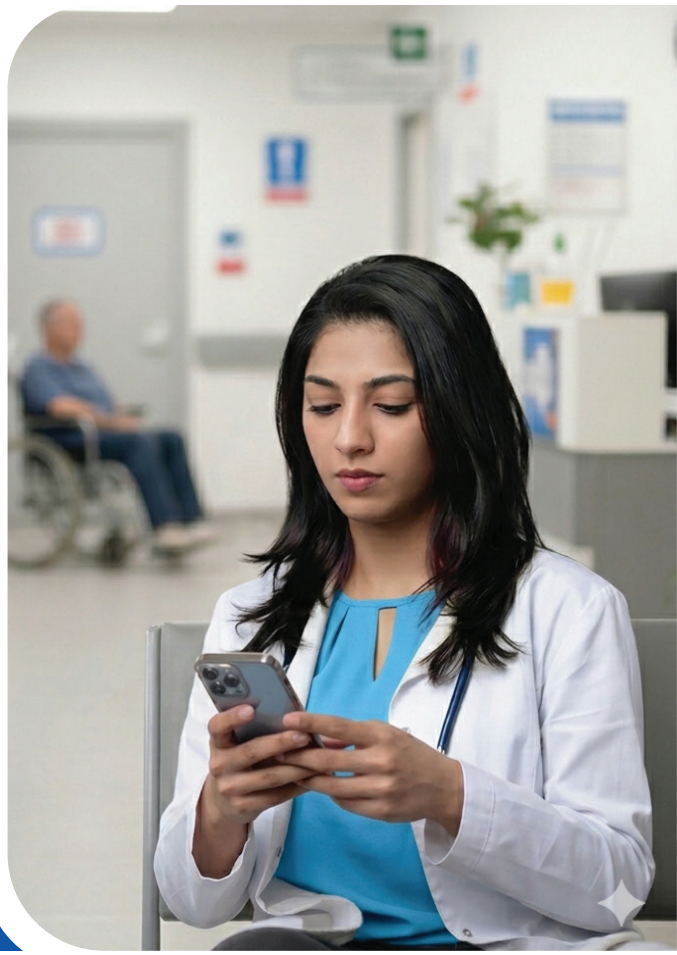
Modern biomedical interventions can be used for diagnosis; however drugs like NSAIDs can cause serious side effects in the long run. Hence, combining them with ayurvedic formulations is a good alternative for attaining immediate relief. Traditional medical systems such as Unani and Siddha offer detailed conceptual frameworks for understanding chronic inflammation. Both systems integrate humoral imbalance, digestive impairment, toxin accumulation, lifestyle errors, and environmental influences as core determinants of chronic inflammatory states. Their holistic approach emphasizes prevention, purification, dietary correction, and restoration of internal equilibrium. Integrative treatment protocols combine the precision of modern diagnostics with the holistic corrective therapies of Ayurveda, Unani, and Siddha, supported by yoga, mind-body practices, and anti-inflammatory nutrition. This multidimensional approach not only controls symptoms but corrects the root causes of chronic inflammation, offering sustainable and comprehensive health outcomes.

Chronic inflammation requires a multidimensional approach addressing biochemical, metabolic, behavioural, and psycho-emotional factors. Integrative treatment protocols draw from modern biomedical insights and AYUSH wisdom to create safe, sustainable, and holistic strategies that reduce inflammation, restore tissue balance, and improve long-term health outcomes.

GOVERNMENT OF KERALAM-DEPARTMENT OF AYUSH
NATIONAL AYUSH MISSION KERALAM

# Empowering AYUSH Learning

## Anytime, Anywhere



National AYUSH Mission Keralam - Learning Management System (LMS) introduces a suite of Massive Open Online Courses (MOOCs) designed for AYUSH professionals and the general public.

## Our courses at a glance

1. **Introduction to Dietetics & Yoga for improving Gut Health**
2. **Certificate course on Palliative care (English)**
3. **Certificate course on Palliative care (Hindi)**
4. **Certificate course on Ayurvedic Maternal Care**
5. **Certificate course on Infertility Management through Ayurveda**
6. **Certificate course on Introduction to Ayurvedic Psychiatry**
7. **Certificate course on Introduction to Eye care through Ayurveda**

Successful Participants will receive a government- approved **Certificate of Completion** upon completion of the course.

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