

Evidence-based Traditional Medicine for Health and Well-being



A transition from *Pathy-based* Approach to *Person-centered* Integrative Health System

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Member, Lancet Citizen's Commission for India

Evidence-Based Traditional Medicine for Planetary Health and Well-being

Part 1 Inspiration and Initiatives

Part 2 Current Scenario

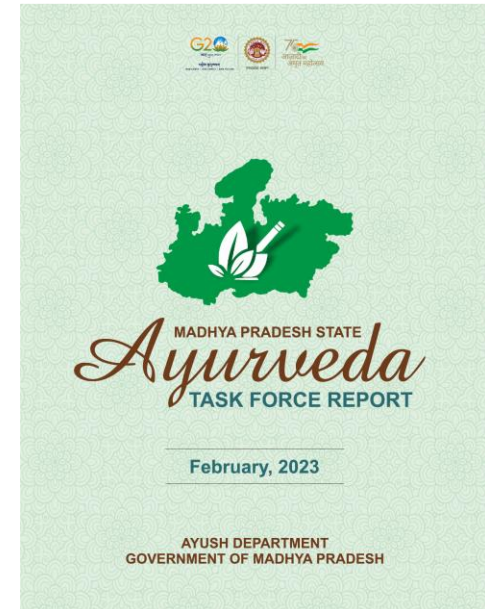
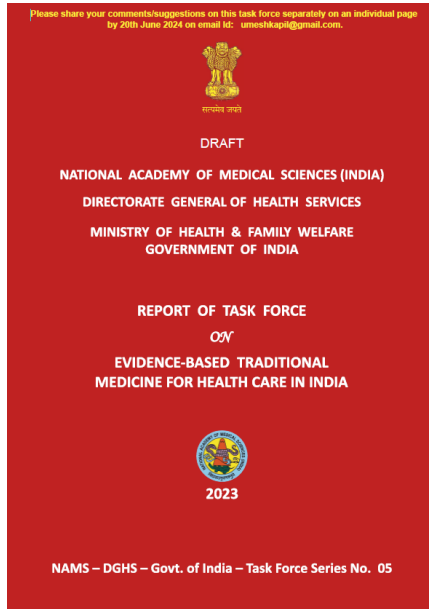
Part 3 Health, Healthcare, Medicine and Well-being

Part 4 Biomedical Research, Evidence, Ethics

Part 5 Innovation - TM, Ayurveda & Yoga

Part 6 One World One Health System

Part 7 Journal and Books



Inspiration and Initiatives

Part 1

INSPIRATION and MENTORS



MS Valiathan



R.H. Singh



M S Baghel



H R Nagendra



B.M. Hegde



Gururaj Mutalik



Ashok Vaidya



Sharadini Dahanukar



R.D. Lele

One Nation, One Health System - Special Issue

One Nation One Healthcare system: Esoteric idea or essential act?

Bhushan Patwardhan¹, Rajeshwari Singh²

Abstract

The importance of the pluralistic healthcare approach and evidence-based integration of medical systems is well recognized in various reports and policies. There is a need to bring synergy in the context of public health, medical and health education, research, clinical practice, and health administration. There is a growing consensus in favor of transforming the pathy-centric fragmented healthcare system to a people-centric integrative healthcare system in a stepwise manner near future. One Health concept is more about zoonotic and environmental considerations. We propose a One Nation One Healthcare (ONOH) system concept that tries to build on the idea that One Health prioritizes people's basic healthcare needs and brings the best from scientific experimental research and traditional experiential practices as consolidated evidence-based medicine. ONOH does not mean mixopathy or monopoly of any one system. Whether this is a utopian esoteric idea or an essential act to the best interest of people and nation for moving toward universal health coverage requires a serious dialog and action.

Keywords: Ayush, health, integration, public health, traditional medicine

Background

The World Health Organization visualizes "One Health" as an integrated, unifying approach to balance and optimize the health of people, animals, and the environment. The approach mobilizes multiple sectors, disciplines, and communities at varying levels of society to work together. However, the One Health approach is particularly relevant for controlling zoonoses, food and water safety, nutrition, pollution management, and combating antimicrobial resistance. The One Nation One Healthcare (ONOH) system tries to build on the "One Health" concept and extend it to evidence-based health care, bringing the best from the plural systems of medicine, including allopathy, traditional, complementary, and integrative medicine, in the best interest of people and nations.

India officially recognizes multiple healthcare systems and has adopted a pluralistic model concerning education, research, clinical practice, and healthcare administration. Traditionally and culturally, our communities have considered holistic health involving body, mind, and spirit stemming from the principles of prevention. The concept of health in Ayurveda is *Svasthya*, meaning the ultimate bliss at the level of body, mind, and spirit. The value of *Svasthahrita*, *Dinacharya*, and *Ritucharya* to attain *Svasthya* requires individual efforts. The natural power of the body and mind to heal is also important. Although doctors are needed to treat diseases, health needs active efforts and participation of individuals and communities to take our health into our hands!¹

In India, Ministry of Family and Health Welfare and the Ministry of Ayush (MoA) are responsible for the conventional modern medicine (allopathy) and traditional healthcare systems (Ayush), respectively.

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Vinod Paul



S K Sarin



V M Katoch

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Editorial

Transiting from pathy-based to people-centered holistic healthcare

1. Opportunity in adversity

The COVID-19 pandemic has disrupted lives of people all over the world posing an unprecedented public health emergency. The confidence in health care systems globally, has been shaken. The current standard care for clinical management of COVID-19 has limitations especially when addressing immunological and mental health problems. The test of any knowledge is not just philosophy but its ability to transform and solve real life problems. The approaches and solutions are bound to be different across knowledge systems. It is not scientific or ethical to ignore a plausible solution merely because its logic is different from a dominant knowledge system. Ignoring potential of AYUSH in the management of COVID-19 seems to be biased due to western biomedicine prejudice. However, recent trends emerging from clinical studies in different cities supported by the Ministry of AYUSH (MoA) indicate that Ayurveda and Yoga interventions can contribute to prevention as well as in improving recovery time and rate in management of COVID-19. While adhering to standards of quality, effectiveness, and safety, it is reasonable, ethical, and fair to integrate cost effective AYUSH measures for management of COVID-19. The adversity created by COVID-19 pandemic is opening an opportunity for long overdue reforms in healthcare system. It may be prudent to break disciplinary silos and transit from pathy-based system to people-centered holistic healthcare.

The Honorable Prime Minister, Shri Narendra Modi's vision for a 'New India' subsumes 'Healthy India' where its own culture, tradition and knowledge systems can make it a role model. Currently, the western biomedicine commonly known as allopathy remains the most preferred system. A vast conceptual framework and canvas of Ayurveda, Yoga, and especially a concept of *Svasthya* goes much beyond typical notion of 'medicine'. Recognizing the value of ancient insights in facilitating modern discoveries can help in reimagining integrative healthcare system for Aarogya Bharat [1]. India is being presented with a unique opportunity to create a new, globally relevant model of integrative health sciences through reforms in medical education health research, clinical practice and public health.

In the past, Bore Committee (1946) adhered to Macaulay's strategy and sidelined Indian systems of medicine (ISM) giving western biomedicine a monopoly. However, several nationalist scholars including Sir Ram Nath Chopra (1948), KN Udapa (1958), H R Nagendra (2016) and Dr Vijay Bhaskar (2019) have highlighted the need for evidence-based integration of ISM into the healthcare system. The 12th Five Year Plan (2012–2017) followed by National

Health Policy (NHP) 2017, National Education Policy (NEP) – 2020 and the National Digital Health Mission (2020) have strongly advocated the need for harnessing the potential of AYUSH systems by integrating them with mainstream healthcare.

2. National needs

The basic healthcare needs of the Indian people are i) Family Medicine ii) Primary Care iii) Disease Prevention and iv) Promotion of Public Health. To meet these needs, every Indian medical doctor needs relevant knowledge and skills drawn from Ayurveda, Yoga, and western biomedicine. To meet the Sustainable Development Goals, India needs integrative Health System (HS) to ensure equitable and universal healthcare. As a first step we must define 'integration' in the Indian context. Integration is not mere collocation, bridge courses or mixed pathy practice. The integrative healthcare system in India needs to be pivoted on her own culture, values, and ethos.

Modern scientific advances in biotechnology, diagnosis, and surgery should not be perceived as the monopoly of western biomedicine. The abilities of Ayurveda and Yoga in disease prevention, health promotion, managing psychosomatic and chronic conditions as well as improving immunity and mental health needs to be properly recognized. Only then, can they be properly adopted. A true integration should involve a spirit of mutual respect and willingness to learn from different knowledge systems, either western or eastern. People of India need affordable people-centered holistic healthcare. They need to be empowered to take care of their own health. To meet their needs, healthcare reforms are required primarily in Medical Education, Health Research, Clinical Practice and Public Health.

3. Medical education

As suggested by NEP 2020 "health care education needs to be re-envisioned so that the duration, structure, and design of the educational programs match the national priorities and actual needs of people. Basic medical education must be integrative meaning thereby that all students of allopathic system must understand basics of AYUSH and vice versa". Currently, India has two distinct streams opted by most medical graduates - one representing biomedicine leading to Bachelor of Medicine, Bachelor of Surgery (MBBS) and the other representing AYUSH doctors. The two systems offer courses with the same duration; also, their curricula have major overlaps, especially in pre-clinical and para-clinical subjects. The Indian basic medical graduate program should be able to respect our knowledge heritage, recognize

Peer review under responsibility of Transdisciplinary University, Bangalore.

<https://doi.org/10.1016/j.jaim.2020.09.005>

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15-Oct-24

Patwardhan-NAMS-PG-CME-4Oct24

Ministry of Ayush

- 5 Central Research Councils, 12 National Institutes, 2 National Commissions
- National Medicinal Plant Board, Pharmacopoeia Commission, Forum for Indian Traditional Medicine
- Ayush Research Portal, Intra Mural and Extra Mural Research Schemes, Ayush-ICMR Advanced Centre for Integrative Research, Ayush Academic Chairs
- **Ayush Centers of Excellence**





Savitribai Phule Pune University

Interdisciplinary School of Health Sciences

CENTER FOR COMPLEMENTARY AND INTEGRATIVE HEALTH - AYUSH CENTER OF EXCELLENCE

Objectives

Public Health, Policy Analysis
Advocacy

Scientific Research and
Translation

Teaching
and Training

Collaborative
Consortia

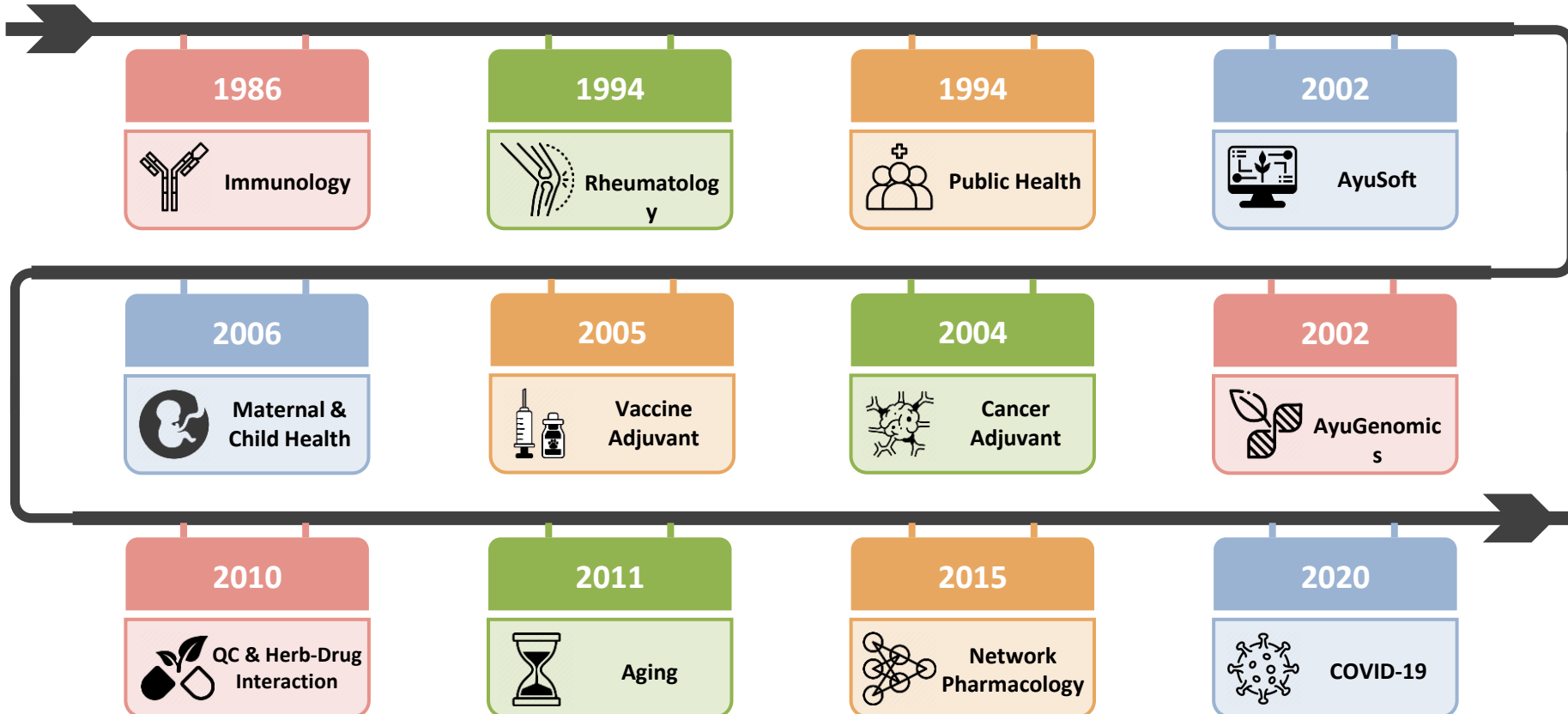




Interdisciplinary School of Health Sciences SCIENTIFIC CONTRIBUTION IN TRADITIONAL MEDICINE



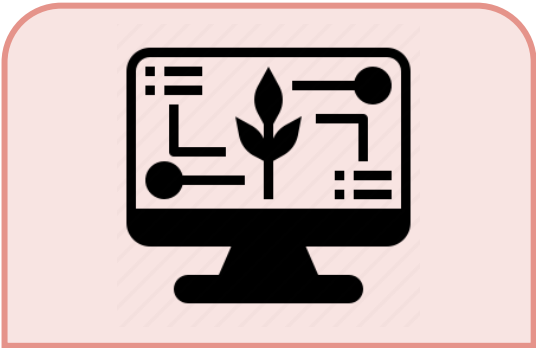
1980
MSc, PhD



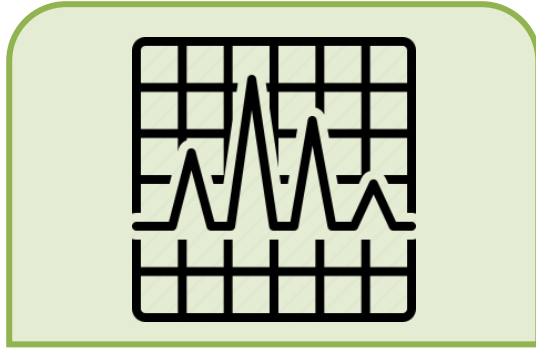


CCIH

CAPACITY BUILDING



In silico Techniques



Analytical Techniques



Yoga Research



Public Health



Publication Ethics



Epistemology



Meta-research



Health policy

Current Scenario

Part 2

आ नो भद्राः क्रतवो यन्तु विश्वतः || (Rig Ved ~1500 BCE) - *Let the noble thoughts come to me from all directions*

In the Age of AI, ML, VR, AR, CF, RTS, CRISPR and Space Missions

The Great Disconnect

- Anthropocene
- Environmental Catastrophes
- Pandemic, Triple Burden
- NCDs: Cancer, CAD, Obesity, Diabetes
- Aging, Stress and Mental Health
- Economic Recession and Desperation
- War & Violence
- Sexism, racism and inequities
- Safety & Efficacy Challenges

The Great Potential

- Beijing, Astana, Geneva, Gandhinagar
- UN SDGs, WHO TBG, TM Strategy
- Planetary Health and Environment
- Good Food and Nutrition
- **L**ifestyle **F**or **E**nvironment
- Well-being Economies
- Self-reliance and Decolonization
- Awareness and Awakening
- One Earth – One Family – One Future

A confluence of modern science and ancient wisdom can bridge the gap

Existential Threat of Greed

Representative Voices from the World

JAMA Network | Citations 11 | Comments 34

Viewpoint FREE

January 30, 2023

Salve Lucrum: The Existential Threat of Greed in US Health Care

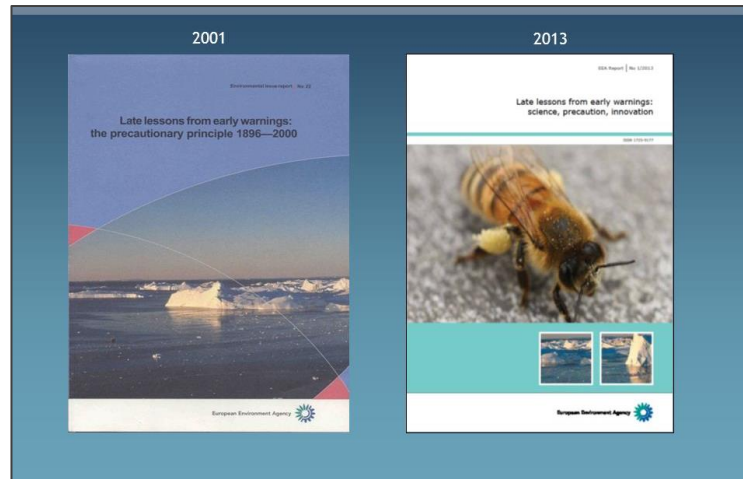
Donald M. Berwick, MD, MPP¹

► Author Affiliations

JAMA. 2023;329(8):629-630. doi:10.1001/jama.2023.0846

Forbes

Saving US Healthcare From A Disaster Worse Than Covid-19



POLITICS / JANUARY 20, 2023

The Nation.

Big Pharma Greed's Knows No Bounds

A proposal by Moderna to hike Covid vaccine costs to as much as \$130 a dose is "what corporate greed looks like."

JOHN NICHOLS SHARE

TIME

The Coming Collapse of the U.S. Health Care System



Watch Hand In Hand In

"We did not develop this medicine for Indians. We developed it for Western patients who can afford it."

"The glorification of profit is harming both care and health. Health care should not be an engine for excessive private gain."
- JAMA 30 Jan. 2023

"There has been a massive breakdown of trust: in the financial system, business leaders, politicians, media, and also scientific elites who are slowly losing public support". - Stephen Green 2009

"There is something profoundly wrong with the way we are living today. There are corrosive pathologies of inequality all around us - be they access to a safe environment, healthcare, education or clean water." EEA 2013

Who Drives Sciences ... Businesses, Profits, or People?

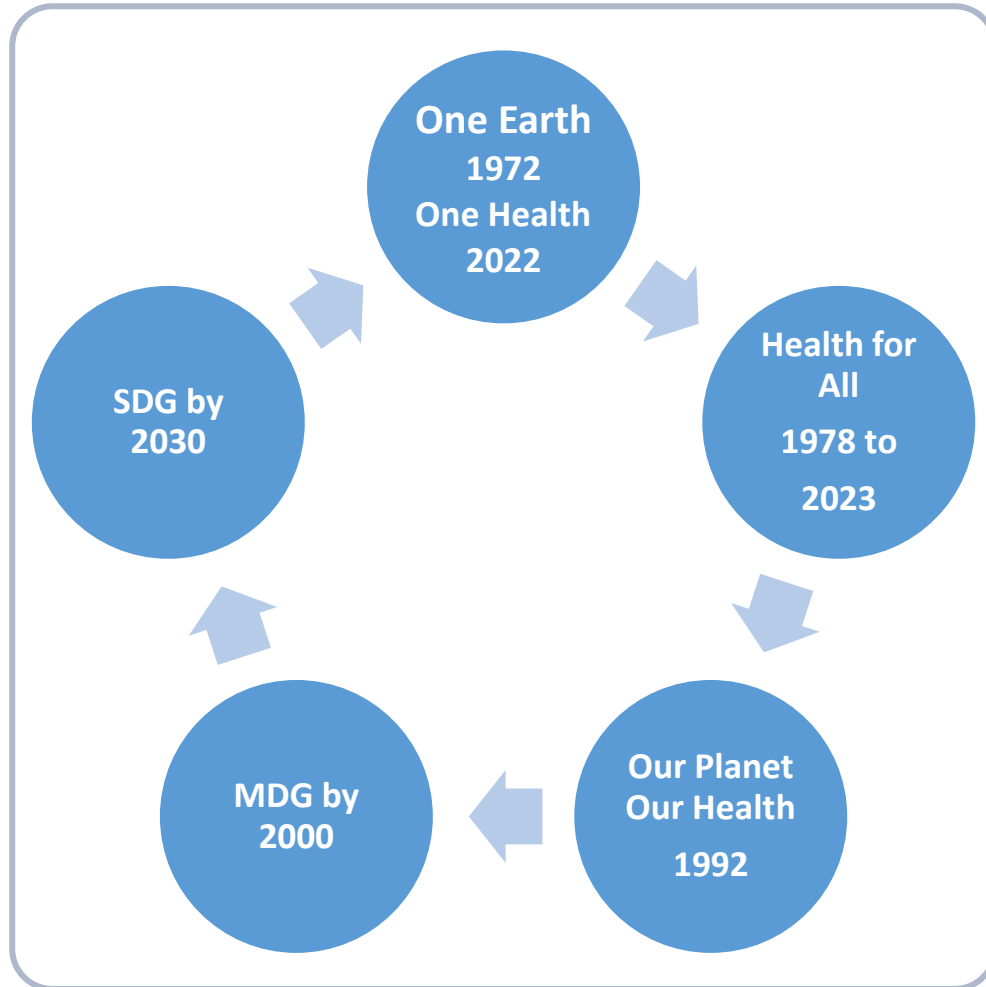
Greed - The Root Cause of Many Problems

Socioeconomic, Sustainability, Health and Well-being



PHC >>> UHC → MDGs >>> SDGs

Time to Retrospect, Reimagine, and Reform



Positive, Holistic, Public, Global, One Health



Planetary Health & Well-being

- Health should not be outsourced
- Health is not the absence of Disease/Pathology
- Healthcare is not Sickcare and Pharmaceutical Drugs
- Well-being is multi-dimensional
- Over 50% population is deprived of health services
- OPE pushes over 100 million into poverty
- UHC is about prevention, promotion, treatment, and rehabilitation not just curative services

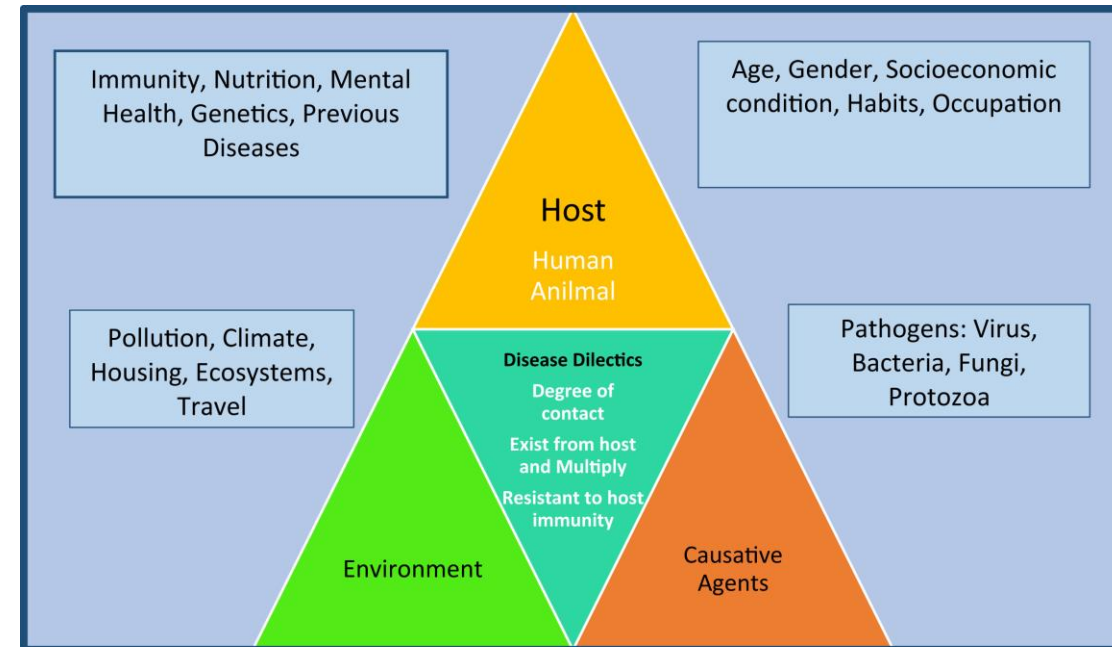
UHC is possible when healthcare is aligned to culture and traditions

Health, Healthcare, Medicine, and Well-being

Part 3

Health, Healthcare and Medicine

- Health is attained through *participatory* efforts of individuals.
- One Health is not limited to *zoonosis*
- Roots of illness may be in maternal health, malnutrition, environmental pollution,
- Diseases like hypertension, coronary heart disease, stroke, obesity, diabetes, and cancers may have *roots* in the programming adult disease in early life

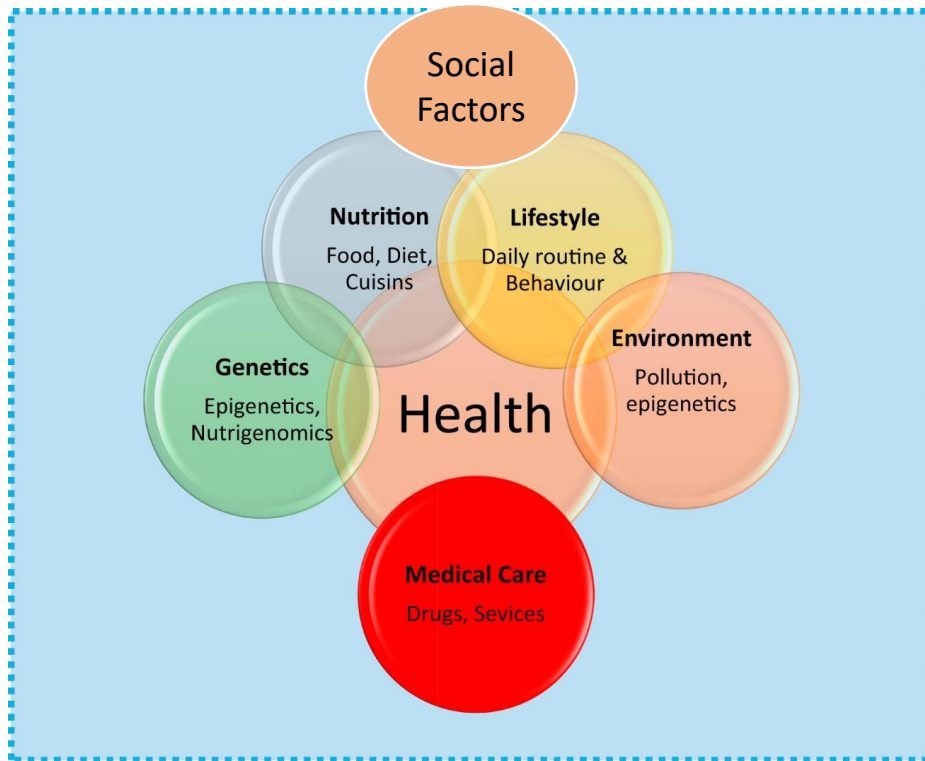


Healthcare is not equal to Medical care

Health, Well-being and Good Health?

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

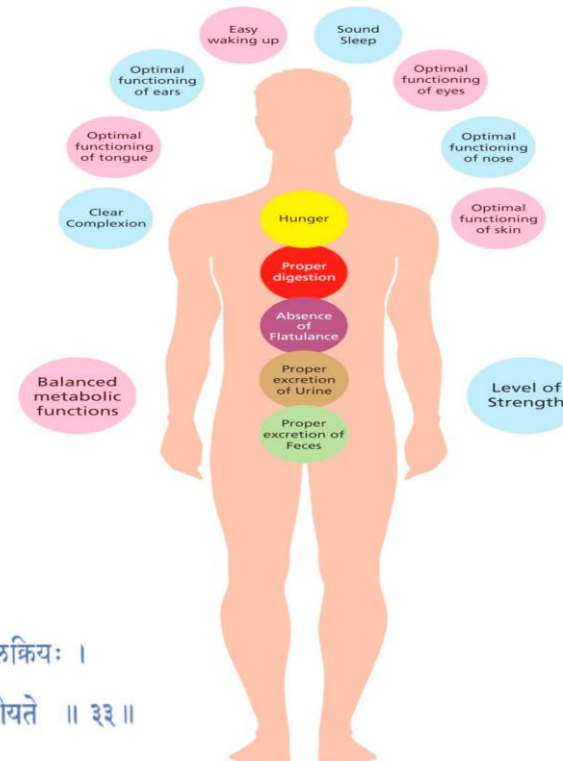
Well-being: A state of Good Health



Medicines treat diseases don't give health

Good health: ???

Swasthya: Bliss at Body, Mind & Spirit



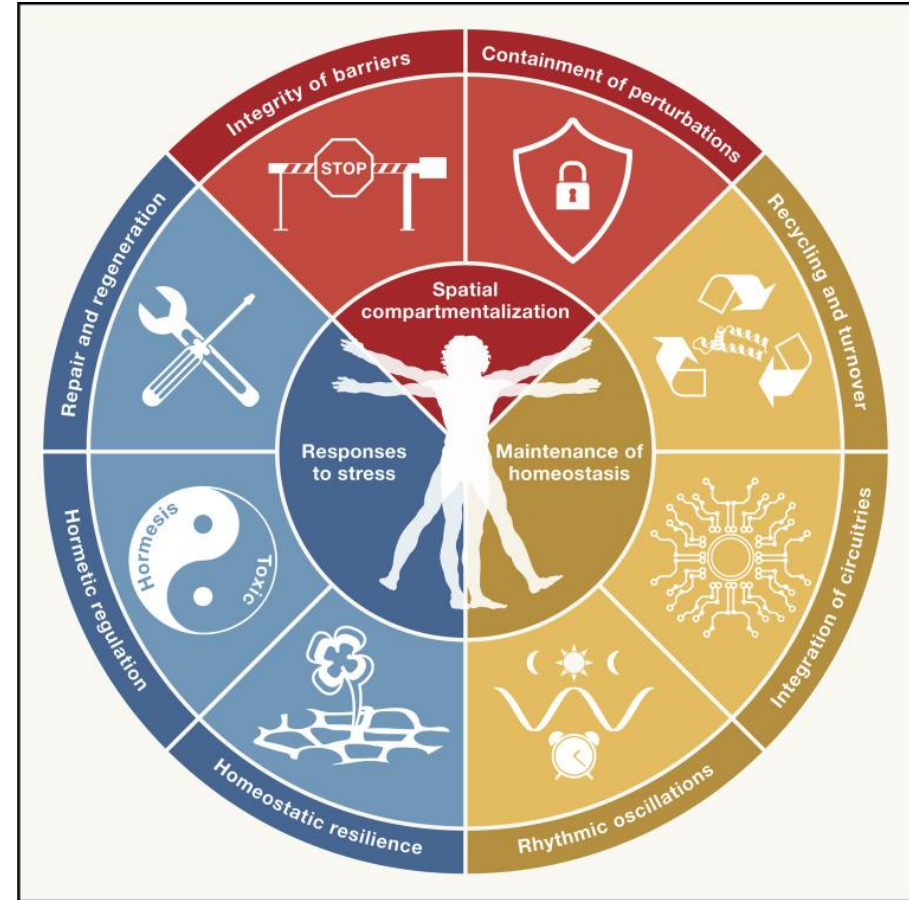
सम दोषः समाग्निश्च समधातुमलक्रियः ।
प्रसन्नात्मेन्द्रियमनाः स्वस्थ इत्यभिधीयते ॥ ३३ ॥

Health is not absence of pathology

Hallmarks of Health & Aging



Patwardhan et al, Integrative Approaches for Health
2015, AP Elsevier



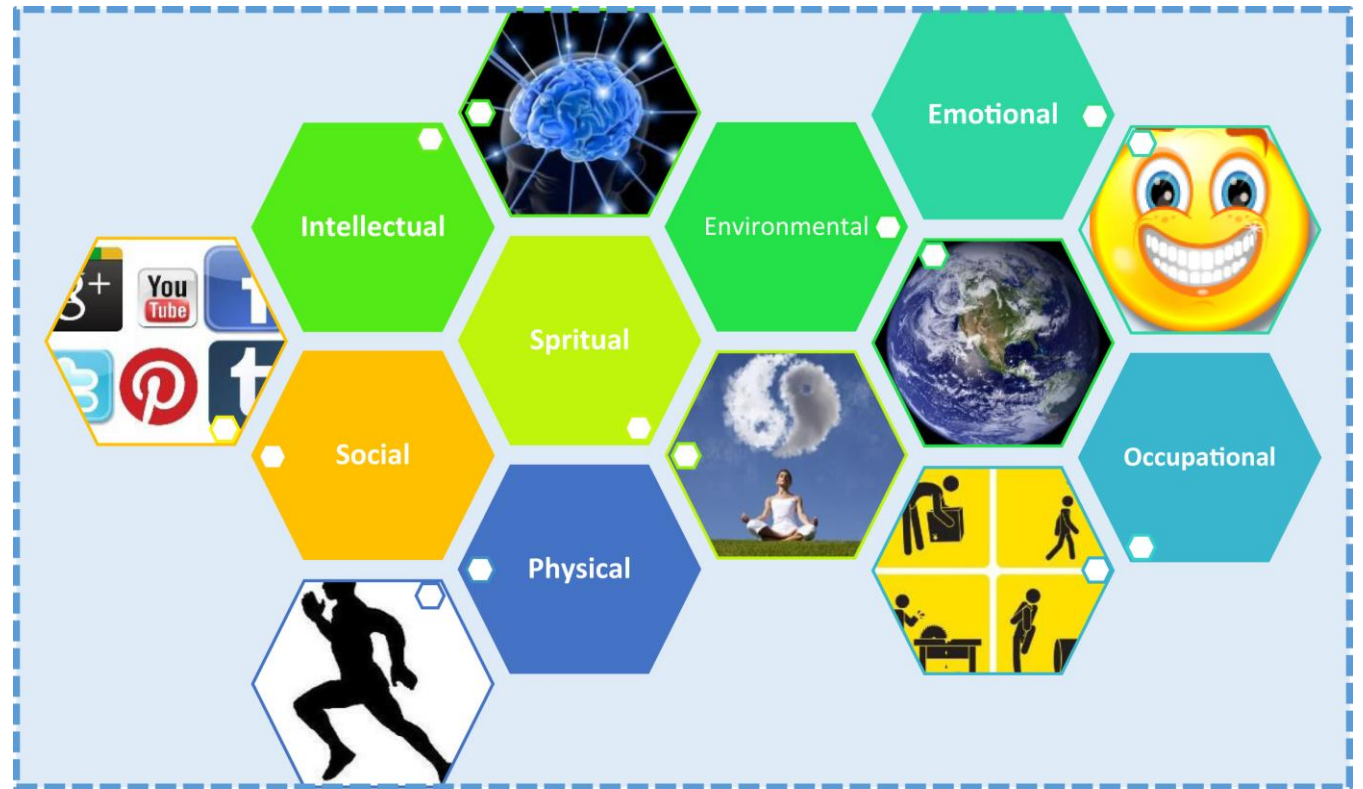
López-Otín C, Kroemer G. Hallmarks of Health. Cell.
2021, 184(1):33-63.

What is Well-being?

Quality of Life

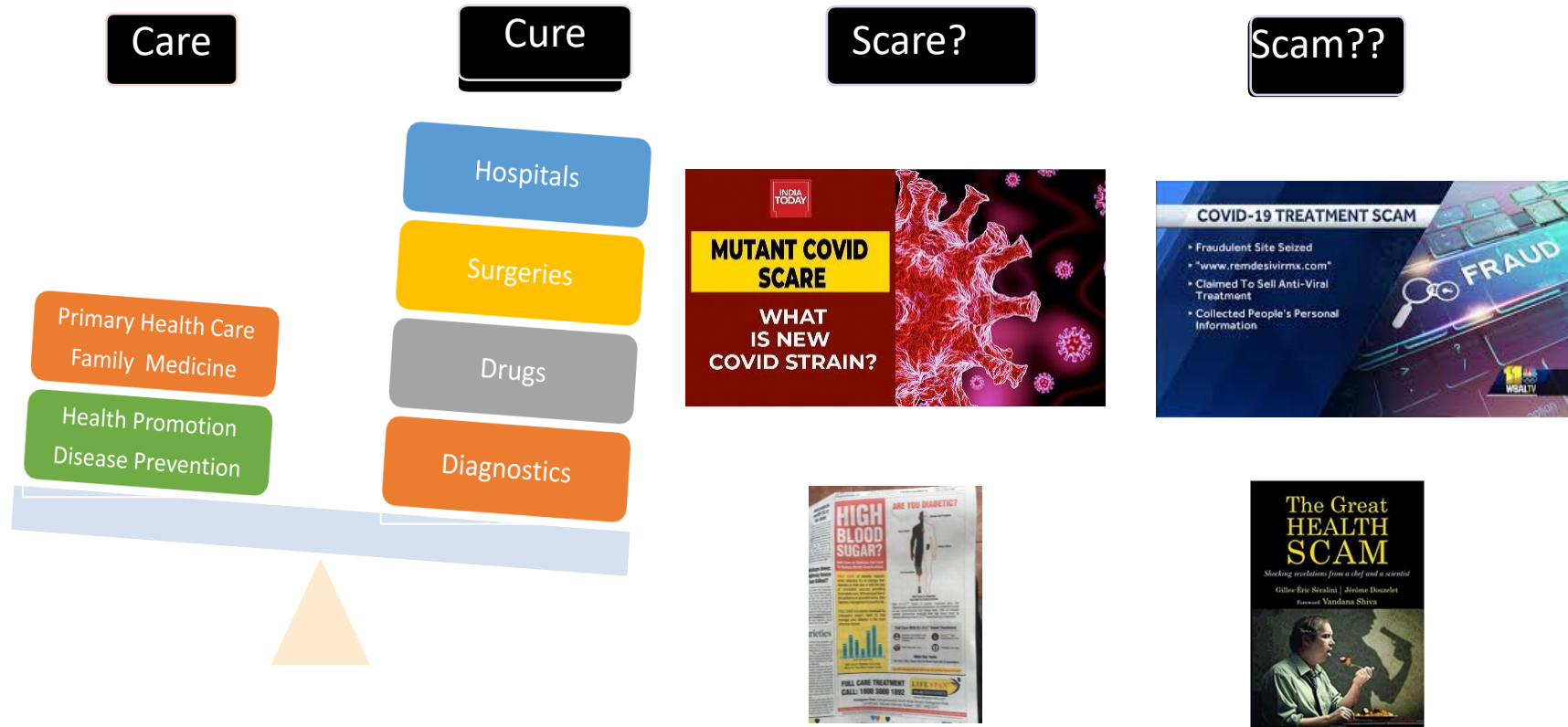


A state of being healthy and happy



Patwardhan et al, Integrative Approaches for Health 2015, AP Elsevier

Health: Care, Cure, Scare or Scam??



Epidemiological Transition - LMICs

CD >>>> NCD >>> Triple burden

- NCDs responsible for over 68% of all deaths ~10% increase from 2000
- 4 main NCDs - diabetes, cardiovascular disease, cancer, and COPD.
- Stress, Mental and Environmental reasons are leading causes of diseases
- Multi-morbidity and polypharmacy are a challenge with the growing ageing population in G20 nations
- Junk foods, red meat, sodas, and sugary drinks are already out of fashion
- Increased agrochemicals and GMOs are posing newer health risks
- Agencies like NIH, CDC, USDA, USPSTF emphasize the importance of improved nutrition, reducing calorie consumption, and increasing physical activity
- LMICs face Triple burden of CD, NCDs, Lifestyle & Environment, Unintentional injuries

Act Before It's Too Late

Extreme Specialisation and Extreme Commercialization >>> Medicalization of Society

Mental Health

CDC's Youth Risk Behavior Survey 2023

60% girl students feel hopeless
25% made a suicide plan

30% drank alcohol every month
20% experienced sexual violence

The Percentage of High School Students Who:*	2011 Total	2013 Total	2015 Total	2017 Total	2019 Total	2021 Total	Trend
Experienced persistent feelings of sadness or hopelessness	28	30	30	31	37	42	
Experienced poor mental health†	–	–	–	–	–	29	–
Seriously considered attempting suicide	16	17	18	17	19	22	
Made a suicide plan	13	14	15	14	16	18	
Attempted suicide	8	8	9	7	9	10	
Were injured in a suicide attempt that had to be treated by a doctor or nurse	2	3	3	2	3	3	

In wrong direction
 No change
 In right direction

Medical Overuse

Voices from Top Journals

- Choose wisely
- Less is more
- Too much medicine
- The right care

THE LANCET

Evidence for overuse of medical services around the world

Shannon Brownlee, MSc • Kalipso Chalkidou, MD • Prof Jenny Doust, PhD • Prof Adam G Elshaug, PhD • Prof Paul Glasziou, FRACGP • Iona Heath, FRCGP [†] • et al. [Show all authors](#) • [Show footnotes](#)

JAMA Network™

JAMA Internal Medicine

[Review](#) | [Less Is More](#)

September 9, 2019

2019 Update on Medical Overuse
A Review

Daniel J. Morgan, MD^{1,2}; Sanket S. Dhruva, MD^{3,4}; Eric R. Coon, MD⁵; et al

THE LANCET

Addressing overuse and underuse around the world

Vikas Saini • Shannon Brownlee • Adam G Elshaug • Paul Glasziou • Iona Heath

Can businesses and profits linked to the sufferings of people be sustainable?

Medical Error/ Unintentional Injury?

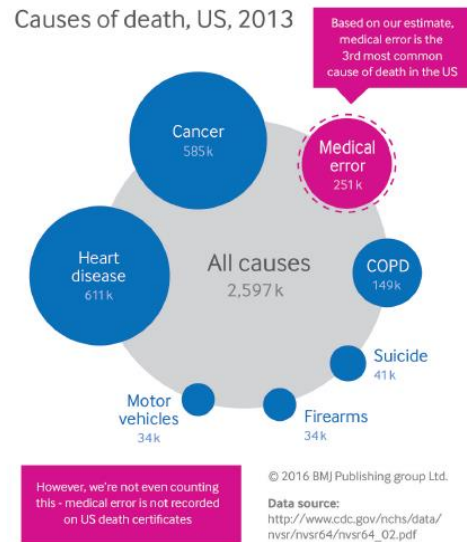


Fig 1 Most common causes of death in the United States, 2013²

BMJ 2016



Table. Number of Deaths for Leading Causes of Death, US, 2015-2020^a

Cause of death	No. of deaths by year					
	2015	2016	2017	2018	2019	2020
Total deaths	2 712 630	2 744 248	2 813 503	2 839 205	2 854 838	3 358 814
Heart disease	633 842	635 260	647 457	655 381	659 041	690 882
Cancer	595 930	598 038	599 108	599 274	599 601	598 932
COVID-19 ^b						345 323
Unintentional injuries	146 571	161 374	169 936	167 127	173 040	192 176
Stroke	140 323	142 142	146 383	147 810	150 005	159 050
Chronic lower respiratory diseases	155 041	154 596	160 201	159 486	156 979	151 637
Alzheimer disease	110 561	116 103	121 404	122 019	121 499	133 382
Diabetes	79 535	80 058	83 564	84 946	87 647	101 106
Influenza and pneumonia	57 062	51 537	55 672	59 120	49 783	53 495
Kidney disease	49 959	50 046	50 633	51 386	51 565	52 260
Suicide	44 193	44 965	47 173	48 344	47 511	44 834

^a Leading causes are classified according to underlying cause and presented according to the number of deaths among US residents. For more information, see the article by Heron.⁴ Source: National Center for Health Statistics. National Vital Statistics System: mortality statistics (<http://www.cdc.gov/nchs/deaths.htm>). Data for 2015-2019 are final; data for 2020 are provisional.

^b Deaths with confirmed or presumed COVID-19, coded to *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* code U071 as the underlying cause of death.

JAMA March 2021

Table 1 | Studies exploring the associations between patient mortality and industrial action by doctors

Strike	Action	Data source	Findings
California, USA, 1976 ^{10,11}	25-50% physicians in LA County withheld non-urgent services for five weeks	Patient transfer records from a medical alert centre established to manage fallout from the strike and LA County death lists	Overall reduced mortality
Jerusalem, Israel, 1983 ⁹	73% doctors refused to treat patients inside hospitals for four months	Death certificates filed in the Jerusalem District Health Office	No overall difference in mortality
Spain, 1999 ⁸	Junior doctors withdrew all labour for nine non-consecutive days	Emergency department records from a single hospital	No overall difference in mortality
Jerusalem, Israel, 2000 ⁹	Doctors withheld all non-urgent hospital services	Survey of Jerusalem burial societies	Reduced number of burials
Croatia, 2003 ⁷	Majority of doctors provided only weekend level of emergency care for four weeks	Mortality data from the National Bureau of Statistics	No overall difference in mortality
Limpopo Province, South Africa, 2014 ⁶	Emergency and elective services unavailable at all but one hospital in a region of 5.5 million people	Emergency department and operating theatre records from a single hospital	Increased mortality for emergency patients
United Kingdom, 2012 ¹²	Boycott of non-urgent care but participation as low as 8%	Administrative data (Hospital Episode Statistics)	No overall difference in mortality

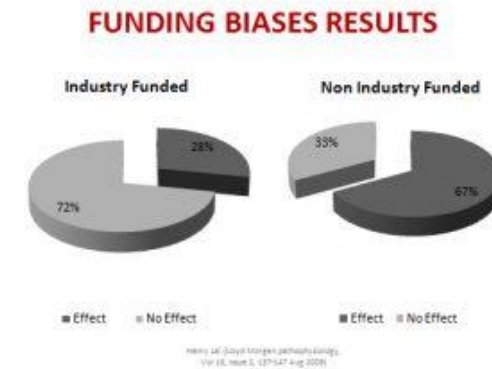
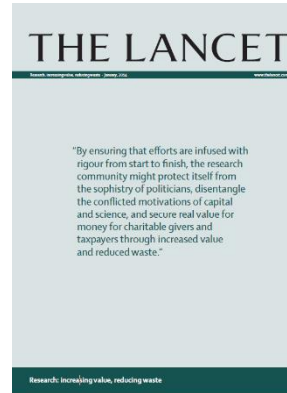
Biomedical Research, Evidence and Ethics

Part 4

Biomedical sciences have progressed ... YET

- The global crisis in health care deepening?
- Affordable and accessible health care a distant dream?
- Triple burden of diseases and epidemic of NCDs?
- Diet, Lifestyle and Socio Behavioural changes?
- Geriatric population with 2-3 chronic conditions?
- The high-tech interventions & pharmaceutical drugs myopic?
- Societal expectations about drug safety and efficacy rising?
- Disease prevention and health promotion a priority? Is

Revisiting Biomedical Research



Most Research Is Flawed; Let's Fix It

John P. A. Ioannidis, MD, DSc, June 25, 2018.

Interview at [Medscape](#)

Meta-Research Innovation Center at Stanford (**METRICS**)



Most scientific studies are incremental to prior evidence not disruptively innovative and non-reproducible.

[Physiological Reviews January 2023](#)



Stop this waste of people, animals and money

Predatory journals have shoddy reporting and include papers from wealthy nations, find [David Moher](#), [Larissa Shamseer](#), [Kelly Cobey](#) and colleagues.

Predatory journals are easy to please. They seem to accept papers with little regard for quality, at a fraction restricted mainly to the developing world. In one famous sting, a journalist for *Science* sent a purposely flawed paper to 140 presumed Our evidence disputes this view. We spent 12 months rigorously characterizing nearly 2,000 biomedical articles from more than 200

[Nature, 549, 7 September 2017](#)

Biomedical Research Focus

Immunity & Inflammation, Food & Nutrition, Lifestyle & Behavioural Modification, Mental Health & Stress Management, Health Technology & Medical Humanities

Not Just

Drugs, Diagnostics, Therapeutics

Focus on Planet, Person, Promotion, Prevention, Prognosis

Focus on Physiology over Pharmacology

Focus on Health & Well-being over Medicine & Treatments

Cause No Harm!

Let the Food be our Medicine
NOT make Medicine our Food

- People can be informed and empowered to take care of their own health
- Health supplements, and nutraceutical products cannot be of much use for attaining, and maintaining health
- The nutra industry should not go on the same path of the drug industry—replacing the medicalization, with the supplementalization of society



Natural Foods Vs Supplements

- There is growing evidence to support the importance of fresh, and natural foods.
- The USPSTF recommends against the use of beta carotene or vitamin E supplements for the prevention of cardiovascular disease or cancer.

IAMA | US Preventive Services Task Force | **RECOMMENDATION STATEMENT**

Vitamin, Mineral, and Multivitamin Supplementation to Prevent Cardiovascular Disease and Cancer

US Preventive Services Task Force Recommendation Statement

Original Investigation | Geriatrics

Effect of Vitamin D₃ and Omega-3 Fatty Acid Supplementation on Risk of Frailty: An Ancillary Study of a Randomized Clinical Trial

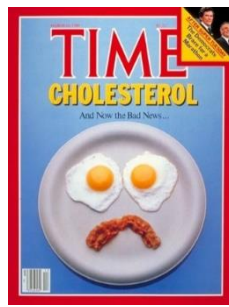
Ariela R. Orkaby, MD, MPH; Rimma Dushkes, PhD; Rachel Ward, PhD; Luc Djousse, MD, ScD; Julie E. Buring, ScD; I-Min Lee, MBBS, ScD; Nancy R. Cook, ScD; Meryl S. LeBoff, MD; Olivia I. Okereke, MD, SM; Trisha Copeland, MS, RD; JoAnn E. Manson, MD, DrPH

- “the present evidence is insufficient to recommend for, or against multivitamins to prevent chronic disease.” [NIH](#)
- “multivitamin supplements may be useful but there is no evidence that they are effective in preventing chronic disease.” [The Academy of Nutrition and Dietetics](#)
- “current evidence does not support the use of dietary supplements for the prevention of cancer.” [The American Cancer Society](#)
- “dietary supplements are not recommended for cancer prevention”, a balanced diet, with a variety of foods is better. [The American Institute for Cancer Research](#)
- “healthy persons should receive adequate nutrients by eating a variety of foods, rather than supplementation.” [The American Heart Association and The American Academy of Family Physicians](#)
- Many systematic reviews, and meta-analysis studies have NOT been able to provide convincing evidence that antioxidants such as beta-carotene, vitamin A, vitamin C, vitamin E, and selenium, or their combinations prevent gastrointestinal cancers.

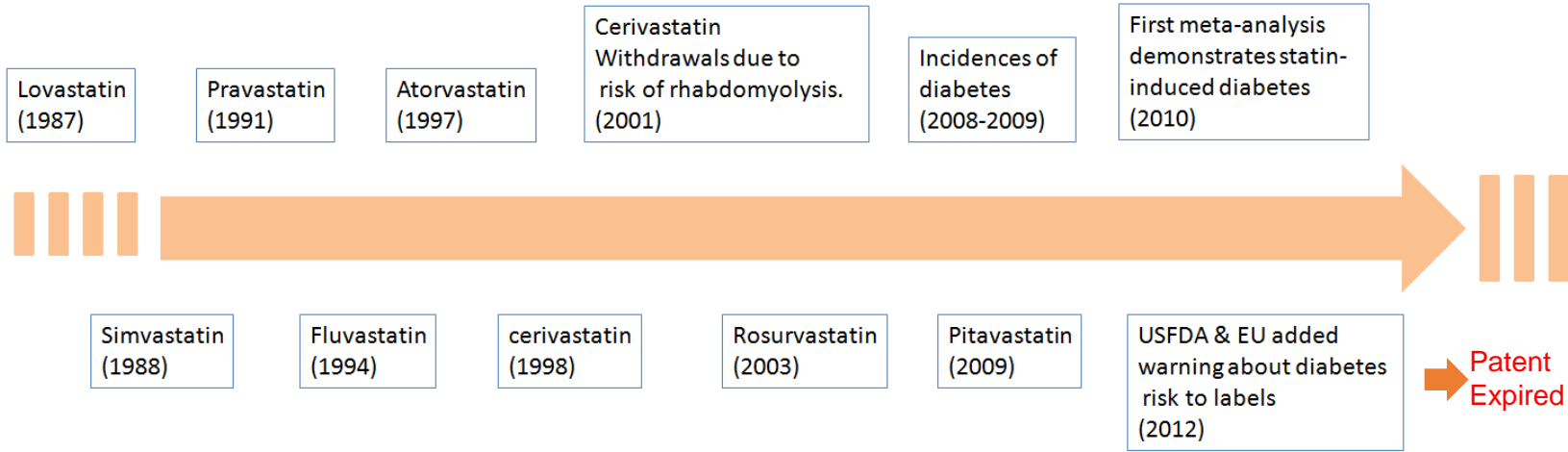
Bjelakovic G, Nikolova D, Gluud LL, Simonetti RG, Gluud C. Antioxidant supplements for prevention of mortality in healthy participants and patients with various diseases. [Cochrane Database of Systematic Reviews](#). 2008.

Ncube TN, Greiner T, Malaba LC, Gebre-Medhin M. Supplementing lactating women with puréed papaya and grated carrots improved vitamin A status in a placebo-controlled trial. [The Journal of Nutrition](#). 2001 p. 1497-502.

1984



Eggs, Butter & Statin Story



2014

High Level Evidence – Low Level Ethics ???



Integrative Approaches for Health: Biomedical Research, Ayurveda and Yoga, Chapter 4-4

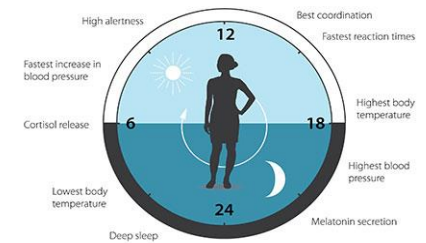
Research and Innovation

Part 5

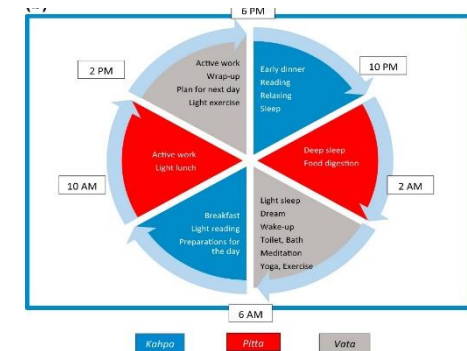
Nobel Prizes 2015-2018

- 2015 Youyou Tu, Chinese Academy of Traditional Medicine (**Reverse Pharmacology**)
- 2016 Dr Yoshinori Ohsumi for medicine for research on autophagy (**Fasting**)
- 2017 Jeffrey Hall, Michael Rosbash and Michael Young for research on biological rhythms (**Dinacharya, Ritucharya**)
- 2018 James Allison and Tasuku Honjo for Cancer treatment by immune regulation (**Rasayana therapy**)

Science
Joseph Bass, et al.
Science 330, 1349 (2010)
DOI: 10.1126/science.1195027



15.3. Vaidya AB *et al*, Chronobiology of Ischaemic Heart Disease Events: Relevance of Ancient Insights in Human Life-Style, *J Asso Physicians India* 1999; Vol 47(6)629-630.



Traditional Knowledge - Sources of Innovation

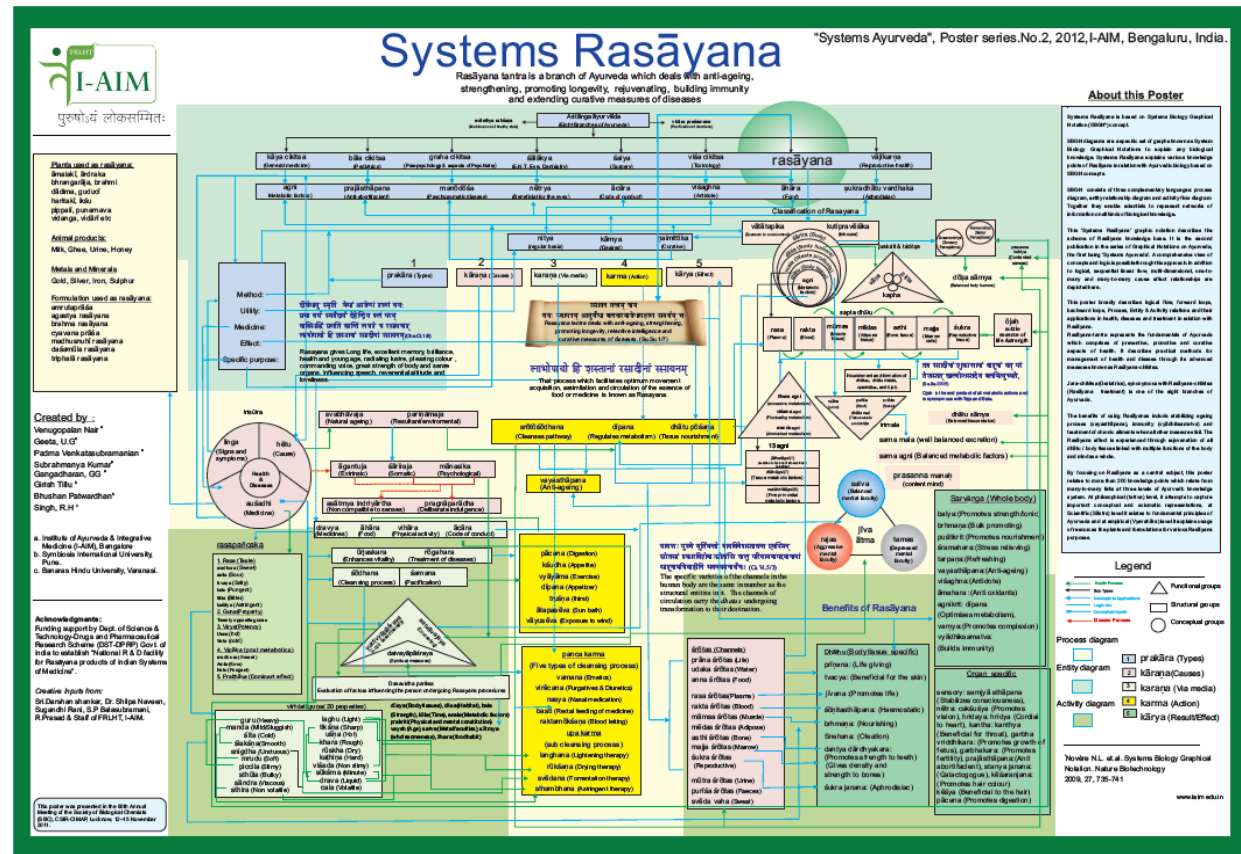
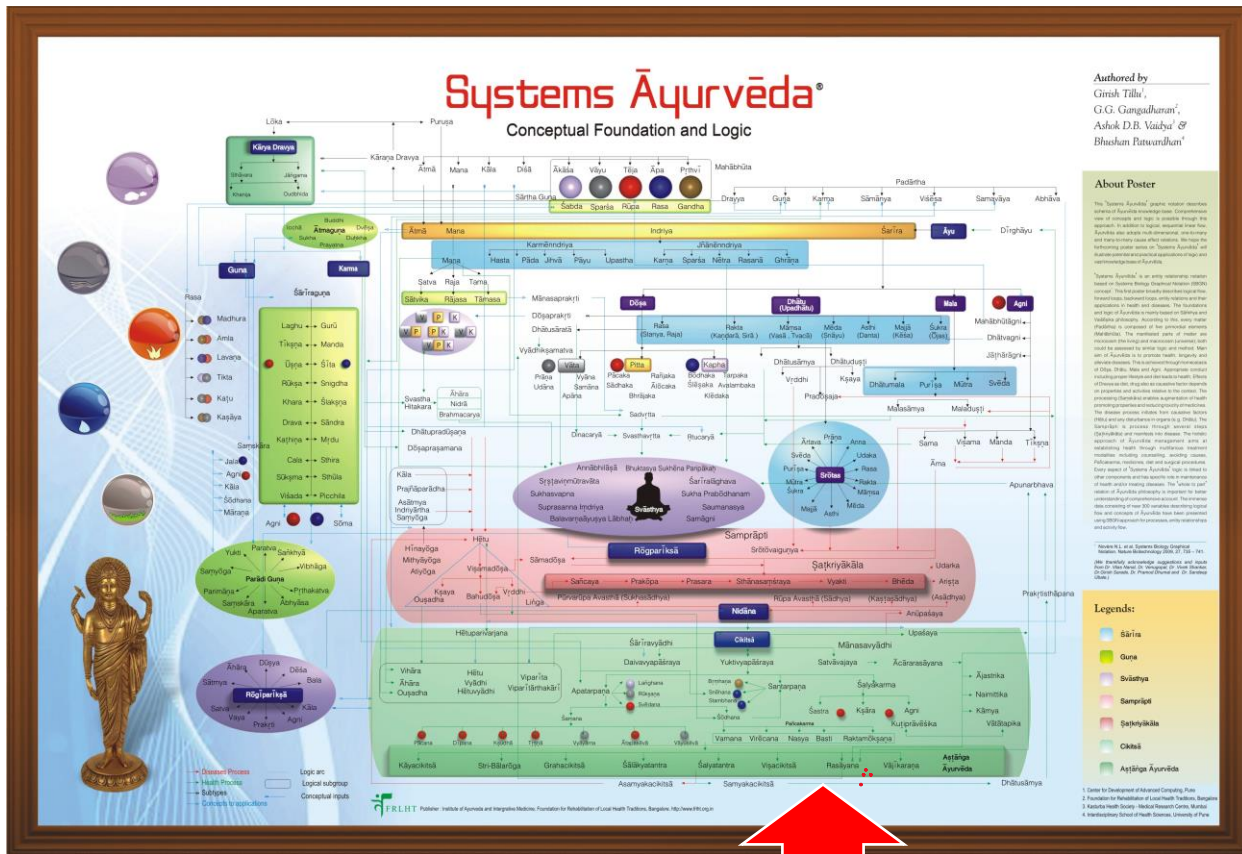
Examples: Ayurveda & Yoga

- Innovations through basic concepts... Prakriti, Dosha, Rasa, Guna, Agni, Srotasa, Ama, Ojas ... Ayurgenomics, AyuSoft,.... Circadian rhythm, Biological clock
- Innovations through Interventions ...Rasayana, Vajikaran, Vayasthapan, Kayakalpa..... Regenerative medicine, Stem cells, Longevity, Rejuvenation.... Cancer Immune therapy
- Innovations through ProcessesPanchakarma, Fasting, ... Detox process, Disease Prevention, Autophagy
- Innovations through Food and Medicine.... Ashwagandha, Brahmi, Guduchi, Nisha, Amalaki..... Reverse pharmacology, New drug discovery.....
- Innovations through services... Abhyanga, Swasthya.....New Model for Affordable Public Health

Systems Ayurveda

Source of Innovation and New Research Ideas

4 Classic Books - 230 Knowledge points - 25000 Sutras - Systems Biology Graphical Notation Framework



Ayurveda-led Innovations

Longevity, Genomic stability, Senescence, Stem cells

In Vivo Effects Of Traditional Ayurvedic Formulations in *Drosophila melanogaster* Model Relate with Therapeutic Applications

Vidya Dhruvdi¹, E. M. Anandan², Rajesh S. Mony², T. S. Muralidharan³, M. S. Vallathan⁴, Mousumi Muttuak⁵, Subhash C. Lakshika^{6*}

Abstract
 Ayurveda represents the traditional medicine system of India. Since mechanistic details of therapy in terms of concepts and principles, it is necessary to examine effects of the whole Ayurvedic formulations rather than their "active" components as done in most current studies.
Methods: We tested two different categories of formulations, a Rasayana (Amalaki/Rasayana or AR) on herbal derivative and a Therapeutic (Anardana or AT) an immunomodulatory derivative of rasayana, for effects on longevity, development, fecundity, stress tolerance, and longevity related marker (drosophelin growth factor) levels of *Drosophila melanogaster* using at least 200 larvae of each group.
Results: A 5.5% weight/bodyweight supplement of AR or AT affected life history and other physiological traits in distinct way. While the size of salivary glands, heart size, and hemolymphatic of larval and adult with AR supplemented food improved significantly following feeding either of the two formulations, the median life span and stress tolerance improved only with AR. Feeding on AT or AT supplemented food improved fecundity differently. Feeding of larvae and adults with AR increased fecundity while the same with AT had opposite effect. On the contrary feeding larvae on control food and adults on AR supplement had no effect on fecundity but a comparable region of feeding on AT-supplemented food improved fecundity. AT feeding did not cause heavy fecundity.
Conclusions: The present study with two Ayurvedic formulations reveals formulation specific effects on several parameters of the fly's life, which seem to generally agree with their recommended human usage in Ayurvedic practice. Thus, *Drosophila* with its very rich genetic tool and well understood developmental pathway promises to be a very good model for examining the subtle and intricate basis of the effects of different Ayurvedic formulations.

Mechanisms of Ageing and Development
 Contents lists available at ScienceDirect
 www.elsevier.com/locate/mad

Studies on the molecular correlates of genomic stability in rat brain cells following Amalakisrayana therapy

Unakanta Swain^{1*}, Kiran Kumar Sinha², Ushaari Boda³, Suresh Pothani⁴, Nappan V. Giridharan⁵, Manikula Rajithan⁶, Kalluri Subba Rao^{6*}

Abstract
 Amalaki Rasayana (AR) is one of the most widely used Ayurvedic formulations. It is known to possess antioxidant, anti-inflammatory, and neuroprotective properties. The present study was designed to investigate the molecular correlates of genomic stability in rat brain cells following AR therapy. AR was administered to rats for 14 days. The levels of oxidative DNA damage markers (8-OHdG and 8-oxo-dGTP) and the levels of DNA repair enzymes (OGG1 and MMR1) were measured in the brain cells. AR treatment significantly reduced the levels of oxidative DNA damage markers and increased the levels of DNA repair enzymes. These findings suggest that AR therapy may protect against oxidative DNA damage and maintain genomic stability in rat brain cells.

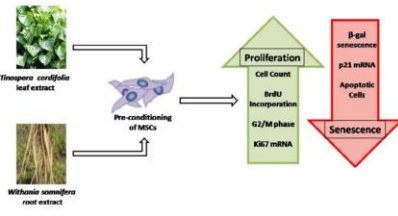


Table 1: Rasayanas and Dhātu

Specific Rasayana	Dhātu	Corresponding biological expression	Appropriate form
Tinospora cordifolia	Rasa	The nourishing food portion absorbed after digestion, plasma	Decoction
Piper longum	Rakta	Blood	Decoction, Asava
Asparagus racemosus	Mamsa	Muscles	Medicated ghee, avaleha
Terminalia chebula	Meda	Adipose tissue	Decoction, Asava, avaleha
Commifera mukul	Asthi	Bones	Medicated ghee oil, medicated milk, avaleha
Bacopa	Maja	Marrow and nervous system	Medicated ghee, avaleha
Withania somnifera	Shukra	Interstitial cells, epithelial lining, sperm, ovum	Medicated ghee, avaleha

Improved longevity

genomic stability

inhibit senescence

Stem cell differentiation

Panchakarma treatment modulated immune responses by regulating pro-inflammatory cytokines, immunoglobulins and functional properties of T-cells. These changes were associated with a reduction in the body weight which was maintained even after three months. **Indian J Med Res. 2015;142(1):53-62.**

- PGM1 gene plays an important role in energy production
- Genome-wide SNP analysis on 262 males has shown PGM1 gene functions are predominant in Pitta prakriti

SCIENTIFIC REPORTS

OPEN Genome-wide analysis correlates Ayurveda Prakriti

Received: 22 June 2015
 Accepted: 10 October 2015
 Published: 19 October 2015

Periyasamy Govindaraj¹, Shaikh Nizamuddin¹, Anugula Sharath¹, Vusukamella Jyothi¹, Harish Reddy¹, Rita Ravali¹, Jayakrishna Nayak¹, Balakrishna K Bhat¹, B. V. Prasanna¹, Pooja Shintre¹, Mayara Sule¹, Kalpana S. Joshi¹, Arish P. Dedge¹, Ramachandra Bharadwaj¹, G. G. Gangadhara¹, Sreekumar Nair¹, Puthiya M Gopinath¹, Bhushan Patwardhan¹, Paturu Kandiah¹, Kaparattu Satyamoorthy¹, Marthanda Varma Sankaran Valiathan¹ & Kumarasamy Thangaraj¹

The practice of Ayurveda, the traditional medicine of India, is based on the concept of three major constitutional types (Vata, Pitta and Kapha) defined as "Prakriti". To the best of our knowledge, no study has convincingly correlated genomic variations with the classification of Prakriti. In the present study, we performed genome-wide SNP (single nucleotide polymorphism) analysis (Affymetrix, 6x) of 262 well-classified male individuals (after screening 3455 subjects) belonging to three Prakriti. We found 52 SNPs ($p < 1 \times 10^{-7}$) were significantly different between Prakritis, without any confounding effect of stratification, after 10⁶ permutations. Principal component analysis (PCA) of these SNPs classified 262 individuals into their respective groups (Vata, Pitta and Kapha) irrespective of their ancestry, which represent by power in categorization. We further validated our finding with 207 Indian population samples with known ancestry. Subsequently, we found that PGM1 correlates with phenotype of Pitta as described in the ancient text of Charaka Samhita, suggesting that the phenotypic classification of India's traditional medicine has a genetic basis and its Prakriti-based practice in vogue for many centuries resonates with personalized medicine.

Journal of Ethnopharmacology

Contents lists available at ScienceDirect

Journal homepage: www.elsevier.com/locate/jep

Dosha phenotype specific Ayurveda intervention ameliorates asthma symptoms through cytokine modulations: Results of whole system clinical trial

Kalpana S. Joshi^{1*}, Tanuja M. Nesari², Arish P. Dedge¹, Vikram R. Dhupal¹, Sushant A. Shengule³, Maithili S. Gadgil⁴, Sundeep Salvi⁵, Marthanda Varma Sankaran Valiathan¹

¹Department of Biotechnology, Shaheed College of Engineering, University of Pune, Pune, Maharashtra, India
²Department of Therapeutics, Siddh-Ayurved Mahavidyalaya, Pune, Maharashtra, India
³Department of Pulmonary Medicine, Chhatrapati Shahu Maharaj Medical Institute, Pune, Maharashtra, India
⁴School of Life Sciences, Mangal University, Mangal, Karnataka, India

JCR: Journal of Clinical Rheumatology

Practical Reports on Rheumatic & Musculoskeletal Diseases

Articles & Issues | Collections | Blog | For Authors | Journal Info

ORIGINAL ARTICLES

Double-Blind, Randomized, Controlled, Pilot Study Comparing Classic Ayurvedic Medicine, Methotrexate, and Their Combination in Rheumatoid Arthritis

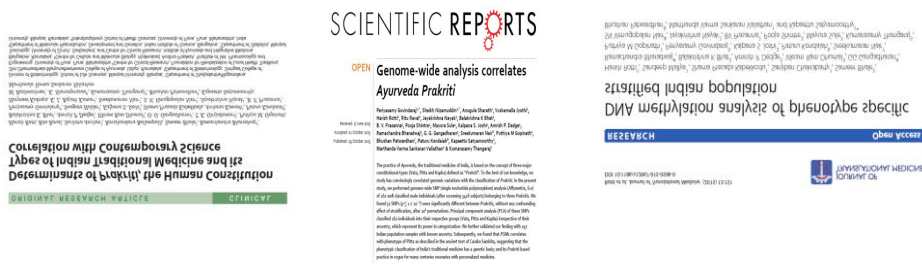
Furst, Daniel E. MD¹; Venkataraman, Manorama M. PhD²; McGann, Mary MPH, MSW¹; Manohar, P. Ram MD (Ayurveda)³; Booth-LaForce, Cathryn PhD¹; Sarin, Reshmi MD (Ayurveda)⁴; Sekar, P.G. MBBS^{5*}; Raveendran, K.G. BAMS⁶; Mahapatra, Anita MD¹; Gopinath, Jidesh BS⁷; Kumar, P.R. Krishna BAMS⁵

Ministry of Ayush Collaborating Network CCRAS, AIIA, NIA, ITRA and other INIs

Reverse Pharmacology
Ayurvedic Pharmacoepidemiology,
AyuSoft, AyuGenomics, Network Pharmacology,
Rasayana for Vaccines and Therapeutic
Adjuvants led by SPPU group

Ayurvedic Biology
A national project to study basic principles
under science initiatives in Ayurveda

- Doshha Prakriti
- Genomics & Epigenetics
- Panchakarma
- Rasayana
- Bhasma
- Whole system studies
- Stem cells
- Microbiome



Proc Indian Natl Sci Acad 82 No. 1 March 2016 pp. © Printed in India. DOI: 10.16943/ptmsa/2016v81i1/48376

Ayurvedic Biology: The First Decade**
M S VALLATHAN*
National Research Professor, Manipal University, Manipal 576 104, India
(Delivered on 29 December 2015)

In the long history of India, few events were more transformational than its encounter with the West, which spared no aspect of human endeavor in the country. European – especially British – influence became so pervasive, and at once so profound, in India's polity, jurisprudence, communication, literature, science and medicine that it has become a part of the Indian reality today. The story of the European encounter with India in the field of medicine is unique in so far as European medicine came to occupy the space of main stream while Ayurveda continues to exist side by side and enjoys popularity. Since independence, Government policy has encouraged "integration" of the two systems with debatable results.

Exploring the signature gut and oral microbiome in individuals of specific Ayurveda prakriti
TRIMALAPURA VIJAYANA SHALINI¹, APOORVA JNANA², SITARAM JAIDEEP SIBIRANANI¹, ANKIT SINGH TANWAR^{3,4}, ANGELA BRAND^{4,5}, THEJAS SREEPATHY MURALI¹, KANAPURU SATYANARAYAN^{1,6} and G G GANGADHARAN^{1,6}
¹Ramiah India Specialty Ayurveda Restoration Hospital, Bangalore, India
²Department of Biotechnology, Manipal School of Life Sciences, Manipal Academy of Higher Education, Manipal, India
³Department of Public Health Genomics, Manipal School of Life Sciences, Manipal Academy of Higher Education, Manipal, India
⁴United Nations University – Maastricht Economic and Social Research Institute on Innovation and Technology, Maastricht, The Netherlands
⁵Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, The Netherlands
⁶Department of Cell and Molecular Biology, Manipal School of Life Sciences, Manipal Academy of Higher Education, Manipal, India
*Corresponding author (Email: vallys@vallys@gmail.com)

Innovative Methodology

Whole system trials & E-tongue



Dosha phenotype specific Ayurveda intervention ameliorates asthma symptoms through cytokine modulations: Results of whole system clinical trial

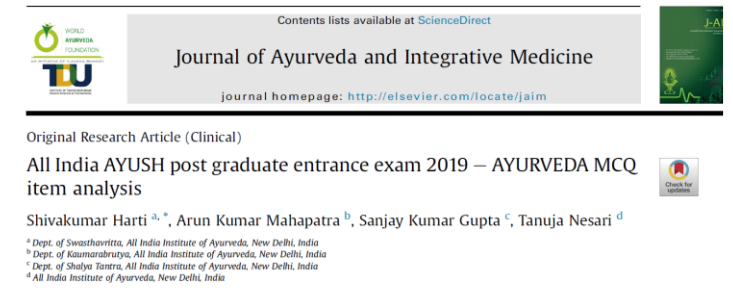
Kalpana S. Joshi^{a,*}, Tanuja M. Nesari^b, Amrith P. Dedge^b, Vikram R. Dhupal^b, Sushant A. Shengule^a, Maithili S. Gadgil^a, Sundeep Salvi^c, Marthanda Varma Sankaran Valiathan^d

^a Department of Biotechnology, Sitabgaon College of Engineering, University of Pune, Pune, Maharashtra, India
^b Department of Divyagyan, Shiksha Ayurved Mahavidyalaya, Pune, Maharashtra, India
^c Department of Pulmonary Medicine, Chest Research Foundation, Pune, Maharashtra, India
^d School of Life Sciences, Manipal University, Manipal, Karnataka, India

6 month Ayurveda treatment - significant reduction in IgE, Eosinophils, improved lung function & reduction in Th2 circulating cytokines



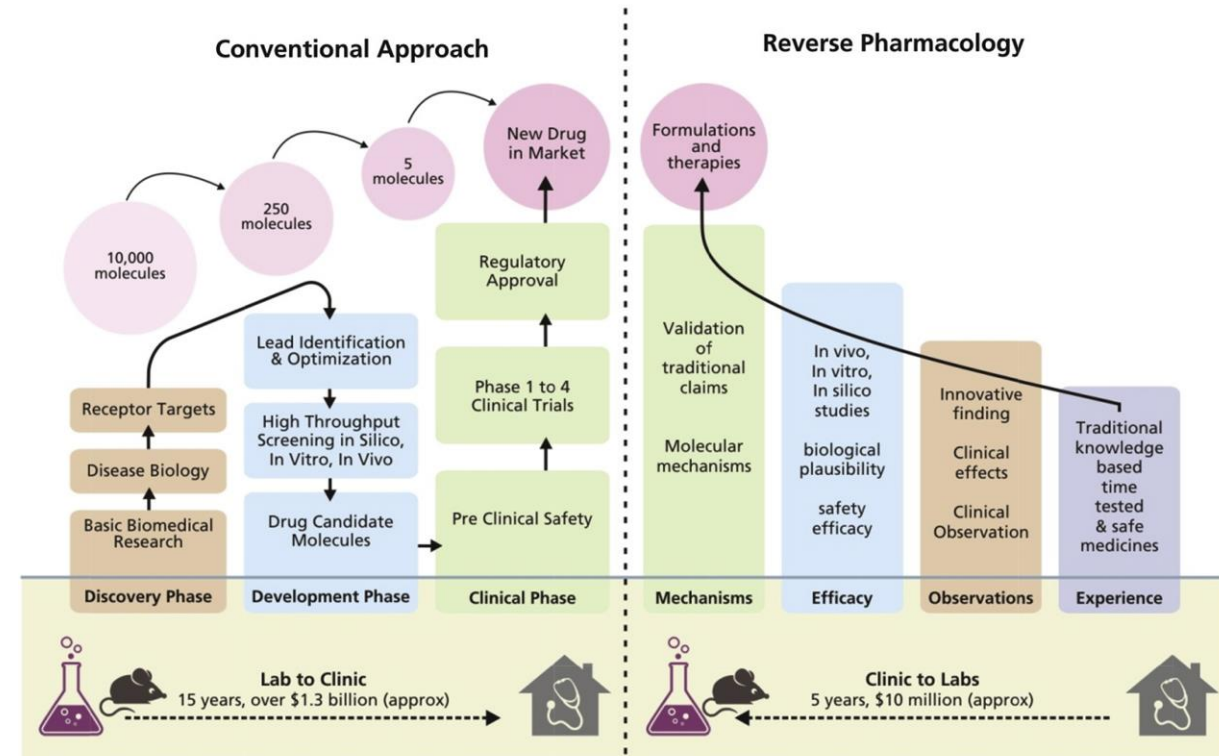
A double-blind, randomized, placebo-controlled whole system trial showing equivalence with MTX



E-tongue for studies on medicinal plants and Ayurveda concept of Taste (Rasa)

Drug Discovery & Innovation Deficit

- More Drugs withdrawn than New Drugs Discovered
- The most common reasons are Hepatic, hematologic, cardiovascular toxicity and carcinogenicity.
- Failure at the end of the pipeline
- Decline of NCEs and emergence of NMEs, Biologics
- Increased development costs
- One Target to Multitarget Strategy

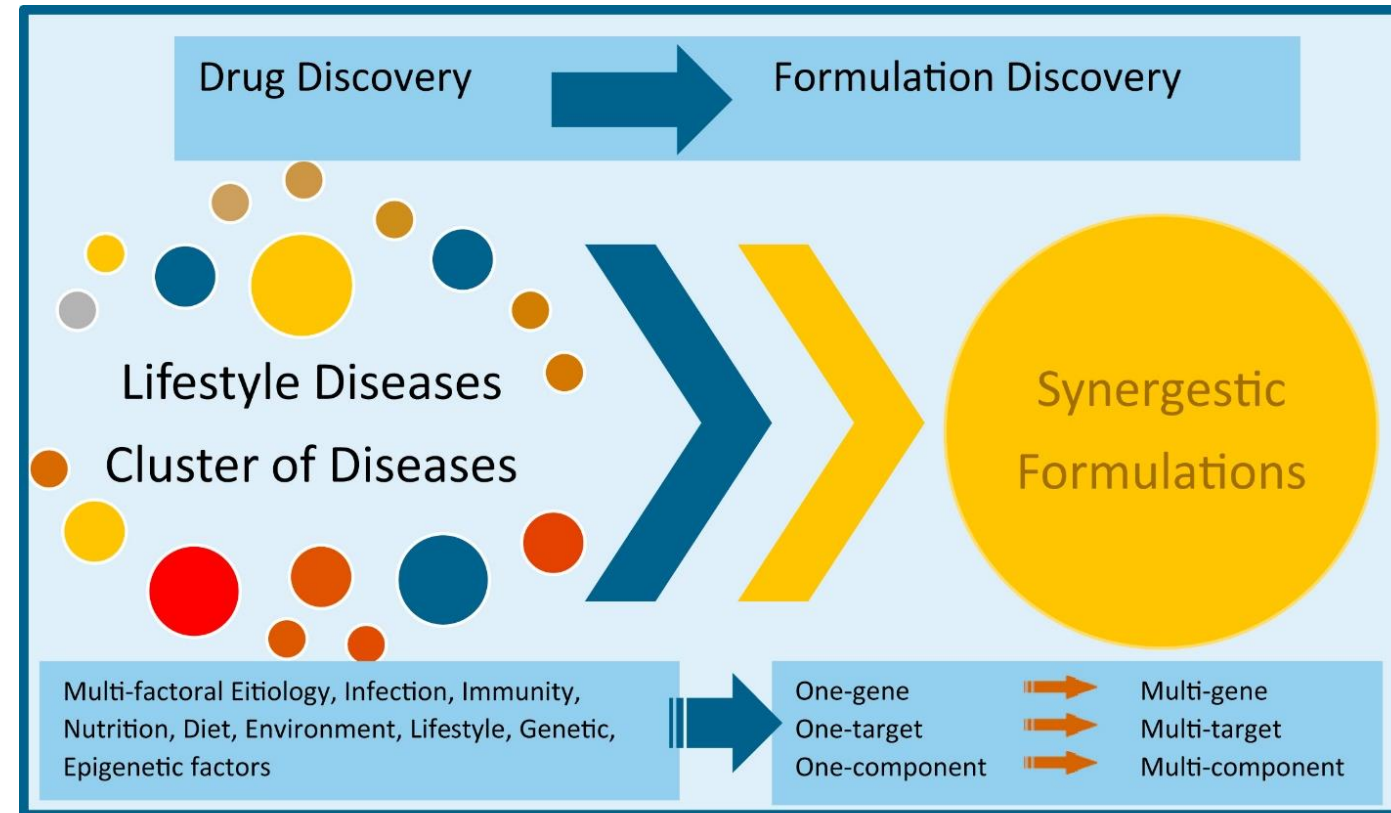
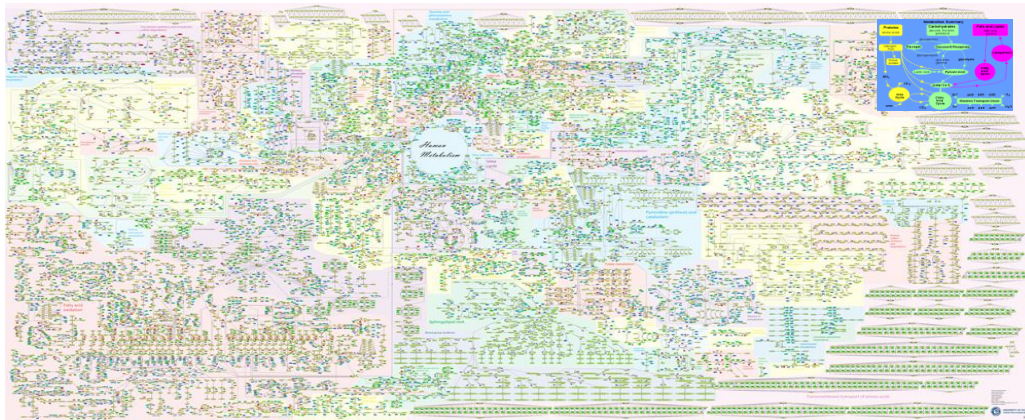


- **Conventional approaches:** Duration: 10-15 years \$ 1-3 bn
- **Reverse pharmacology approach:** Duration: 5-8 years \$ 1-5 mn
- **Examples:** Reserpine, Metformin, Taxol, Artemisinin etc

Most NCDs/ Lifestyle Disorders are Polygenic Syndromes

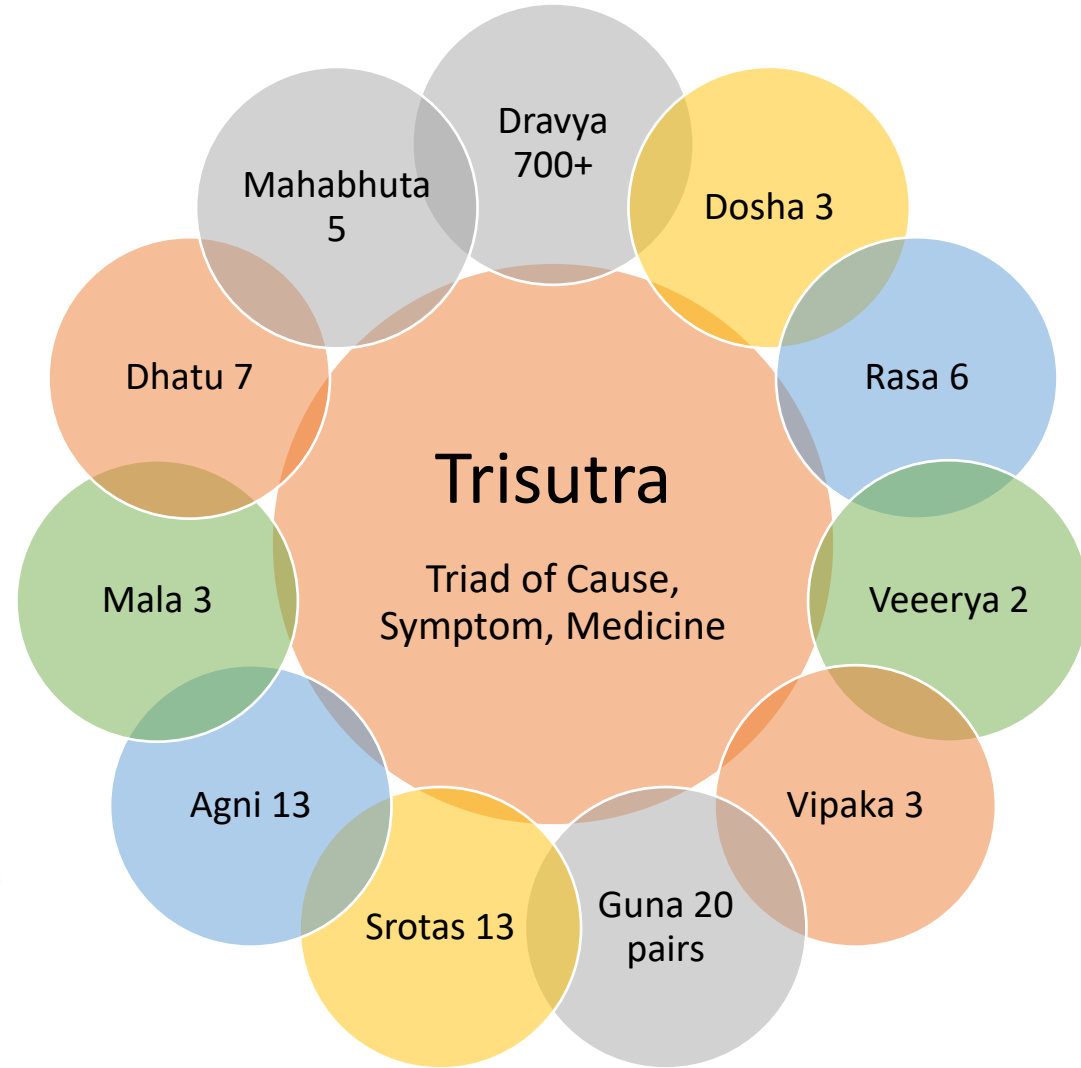
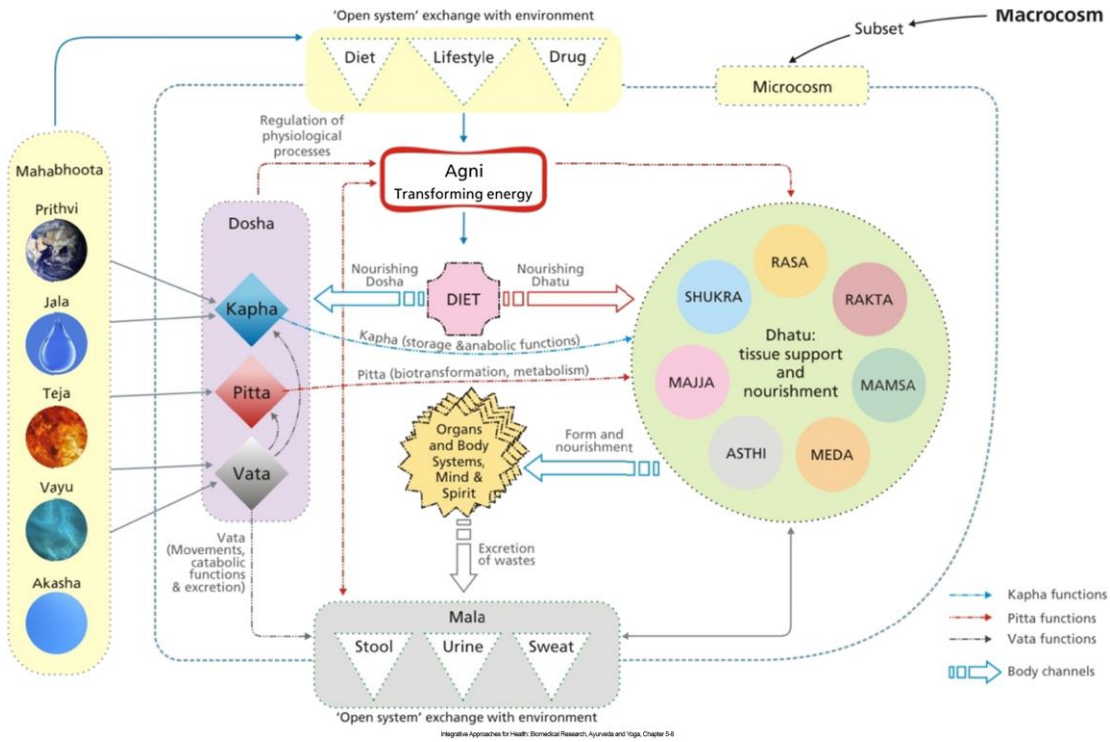
Need Multi-target Holistic Approach

Google Map of Human Metabolic Networks



Integrative Approaches for Health: Biomedical Research, Ayurveda and Yoga, Chapter 9-4

Key to Personalised Medicine Omics??

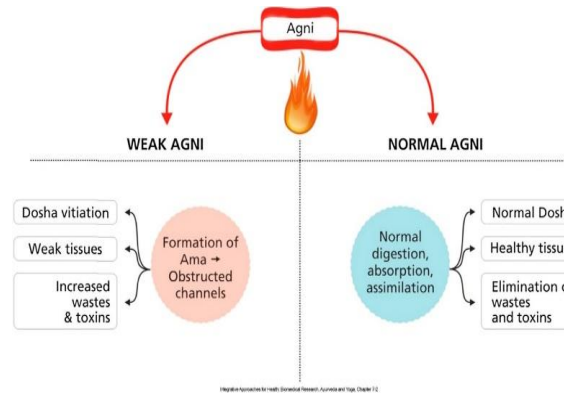
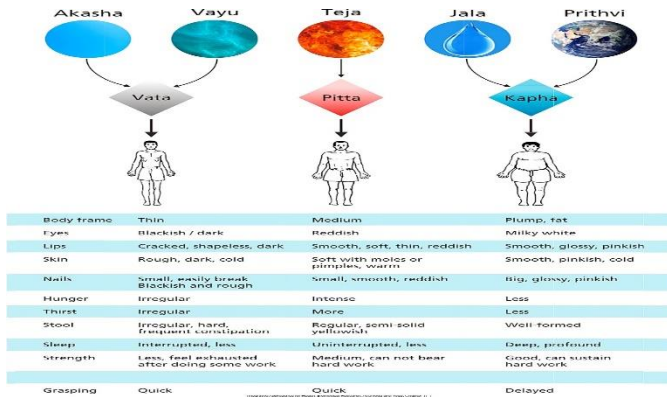


Dasha Vidha Pariksha: A comprehensive diagnosis on 10 factors
The permutations of these variables make every person a unique entity

The Epistemology and Language are Different

Concepts of Anatomy and Physiology are Different

5000 BC much before the understanding of atoms, molecules



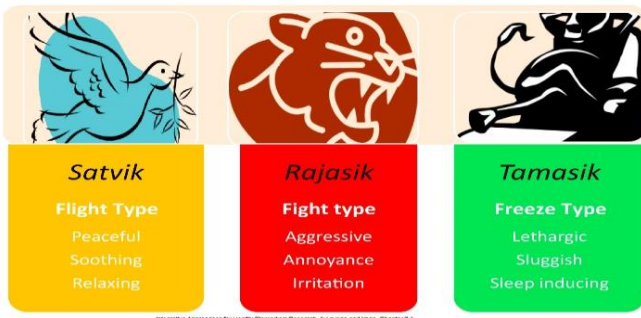
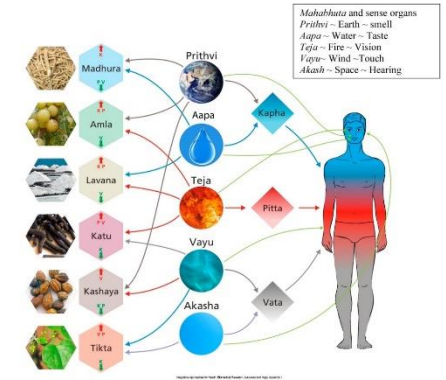
Guna: the Ontology of Ayurveda

Guna template for expression of physiological and pharmacological properties:

Guru	Manda	Sheeta	Ushna	Snigdha	Shikha	Sandra	Mruudu	Sthira	Sthula	Picchil
Laghu	Tikshna	Ushna	Ruksha	Khara	Drava	Kathina	Sara	Sukshma	Vishada	

|| शरीरजानां दोषाणां क्रमेण परमौषधम् ... तैलं घृतं मधु ||

Guru	Manda	Sheeta	Ushna	Snigdha	Shikha	Sandra	Mruudu	Sthira	Sthula	Picchil	Vata X Sesame oil
Laghu	Tikshna	Ushna	Ruksha	Khara	Drava	Kathina	Sara	Sukshma	Vishada		
Guru	Manda	Sheeta	Ushna	Snigdha	Shikha	Sandra	Mruudu	Sthira	Sthula	Picchil	Pitta X Cow Ghee
Laghu	Tikshna	Ushna	Ruksha	Khara	Drava	Kathina	Sara	Sukshma	Vishada		
Guru	Manda	Sheeta	Ushna	Snigdha	Shikha	Sandra	Mruudu	Sthira	Sthula	Picchil	Kapha X Honey
Laghu	Tikshna	Ushna	Ruksha	Khara	Drava	Kathina	Sara	Sukshma	Vishada		



nature biotechnology

End of the interlude?

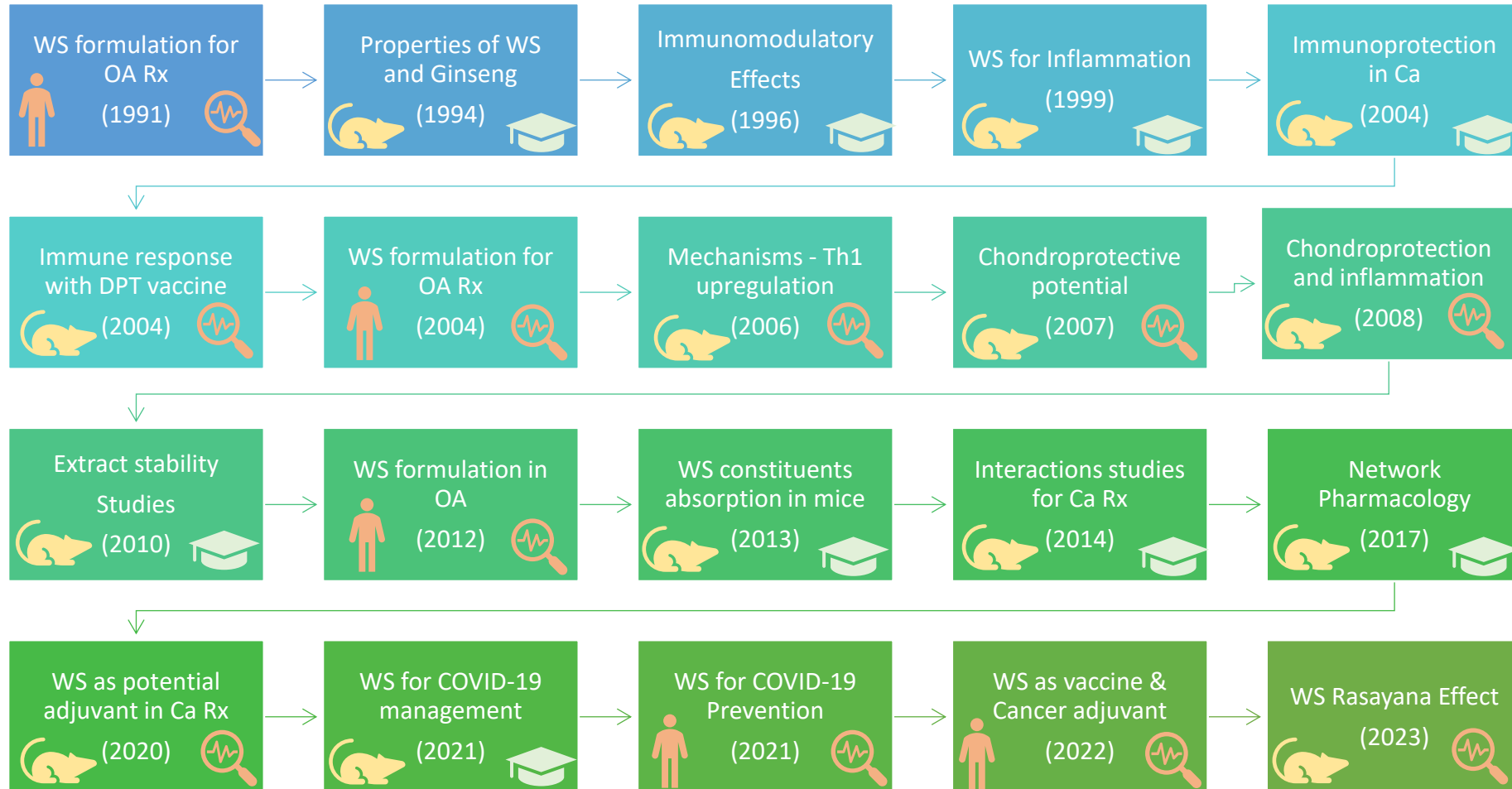
"In one way, you could say all the genetic and molecular biological work of the last 60 years could be considered a long interlude... We have come full circle—back to the problems left behind unsolved. How does a wounded organism regenerate exactly the same structure it had before? How does the egg form the organism? In the next 25 years, we are going to have to teach biologists another language... I don't know what it's called yet; nobody knows..."
Sydney Brenner



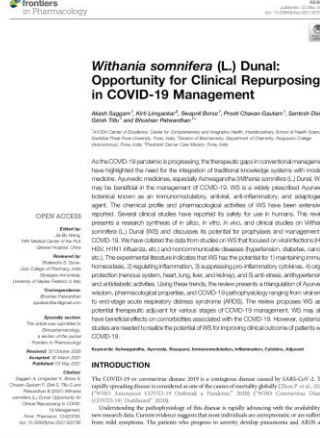
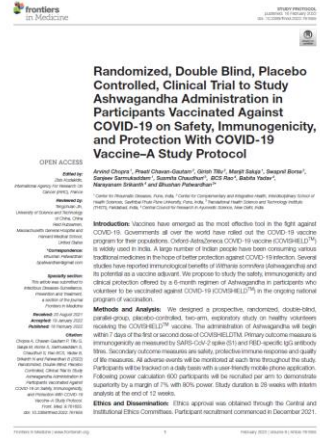
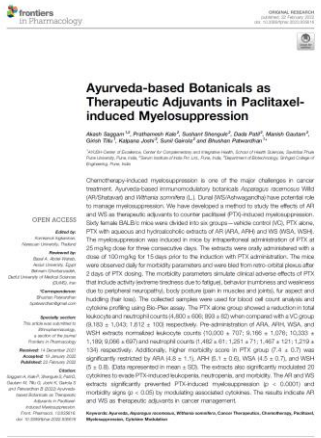
Inspiration to Innovation???

Example of Innovation

Three Decades Ashwagandha Research @ SPPU



Three Decades of Ashwagandha 1994 - 2024



Ashwagandha Towards A Blockbuster

Three Decades of Research 1994-2024 and Journey Continues.....



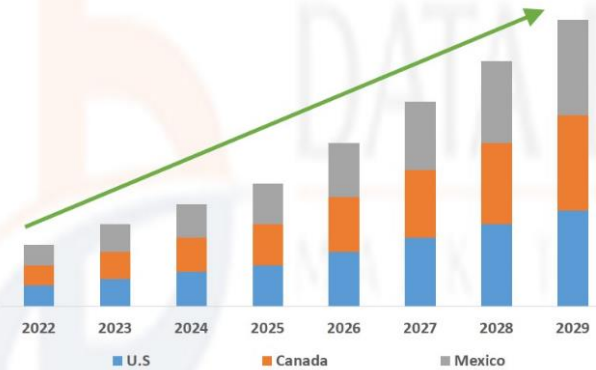
Journal of Ethnopharmacology 44 (1994) 131–135



A comparative pharmacological investigation of Ashwagandha and Ginseng

Anuradha Grandhi^a, A.M. Mujumdar^b, Bhushan Patwardhan^{*c}

North America Ashwagandha Market is Expected to Account for USD 39.20 Million by 2029



DMCA Protected © Data Bridge Market Research- All Rights Reserved. Source: Data Bridge Market Research Market Analysis Study 2022

North America Ashwagandha Market, By 2029

2022

2029

DATA BRIDGE MARKET RESEARCH



Emerging Opportunity

Food, Nutrition and Lifestyle Medicine

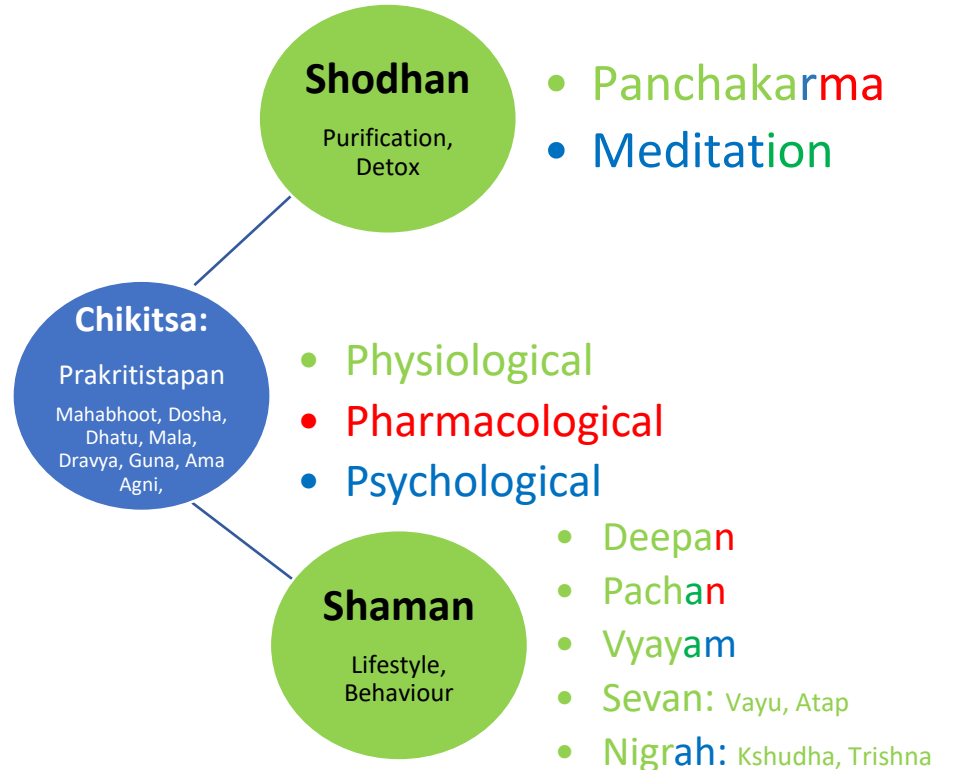
- PM's Nutrition Initiative and Lifestyle For Environment as flagship programs. The Ministry of Ayush guidelines,
- 'The Eat Right Movement' to improve public health.
- The United Nations has announced 2016-2025 as a Decade of Action on Nutrition.
- The UN FAO declared October 16th, as the 'World Food Day'
- COP26 at Glasgow served local vegetable-based seasonal food from Scotland.



Food is Medicine JAMA 2023

“Let food be thy medicine and medicine be thy food” Hippocrates

Swasthavritta Dinacharya and Ritucharya



One World – One Health System (Integrative)

Part 6

Example: Covid-19

Opportunity in Adversity

Dwindling monopoly

- Exposed the inadequacy and incompetence of healing systems
- Brought Modern and Traditional Medicine to the same level-playing field
- Universal Health Coverage is Global Priority Agenda
- Paved way for pragmatic integration. Both have strengths and weaknesses
- Modern Medicine has no proven safe, affordable interventions to improve innate immunity
- Yoga and TM can help improve physical and mental status, immunity and resilience

Existential crisis

- Origin and spread of virus is still a mystery
- Both Rich and Poor countries are affected
- Initial strategies mostly based on empirical data
- Serious problem of reliable, authentic data
- No definitive treatment as of now
- Vaccine availability is improving so as the concerns on safety, efficacy, affordability, availability
- Contradictory claims, exploitation, Politics
- Massive breakdown of trust

“My basic nature is to convert adversity into opportunity” ... Narendra Modi



AYUSH RESOURCES APP AND REPOSITORY



AYUSH Sanjivani App

15M Health seekers data captured

75K Physicians utilized AYUSH for prophylaxis

85% AYUSH users for COVID-19 prevention

63% Improvement in wellbeing & health status

Expanding Horizons of Age-Old Traditional Knowledge of Ayurveda with
AYUSH Sanjivani App

- To generate data on acceptance & usage of AYUSH measures & its impact on prevention of COVID-19
- Provide AYUSH advisories related to immunity boosting measures
- Promote AYUSH knowledge for larger good of the global community
- To develop AYUSH interventions & solutions; to reach out to target of 50 lakh people

Download Now! Dated: 9 May 2020

आयुष मंत्रालय
Ministry of Ayush

Ayush Clinical Case Repository

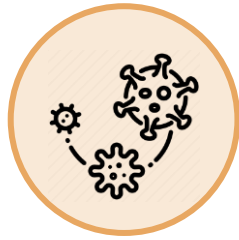
Ayush Grid एक कला एकता ये जोर

Home About Us FAQs Published Cases Contact Us Sign Up Sign In



IMMUNOMODULATION

COVID-19 ADJUVANT



Viral Load Prevention

- **Inhibition** of host **receptor**
- Antioxidant property to maintain **oxidative balance**
- Improvement in **Th1 cell response**
- Enhancing **immune cell functioning**

Patwardhan. Curr Sci. 2020;118(8):1158-60.



Immune-homeostasis

- **Balancing** immune cell **activities**
- **Mitigation** of cytokine **storm**
- **Downregulation** of **inflammatory** markers
- **Prevention** of **pyrexia**

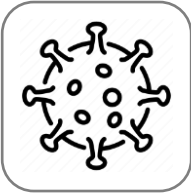
Saggam. Front Pharmacol. 2021;12:623795.



Organ Protection

- **Prevention** of inflammation-induced **organ failure**
- **Inhibition** of pulmonary **fibrosis**
- Neuro-, renal- and cardio-**protection**
- **Normalizing** sex hormones

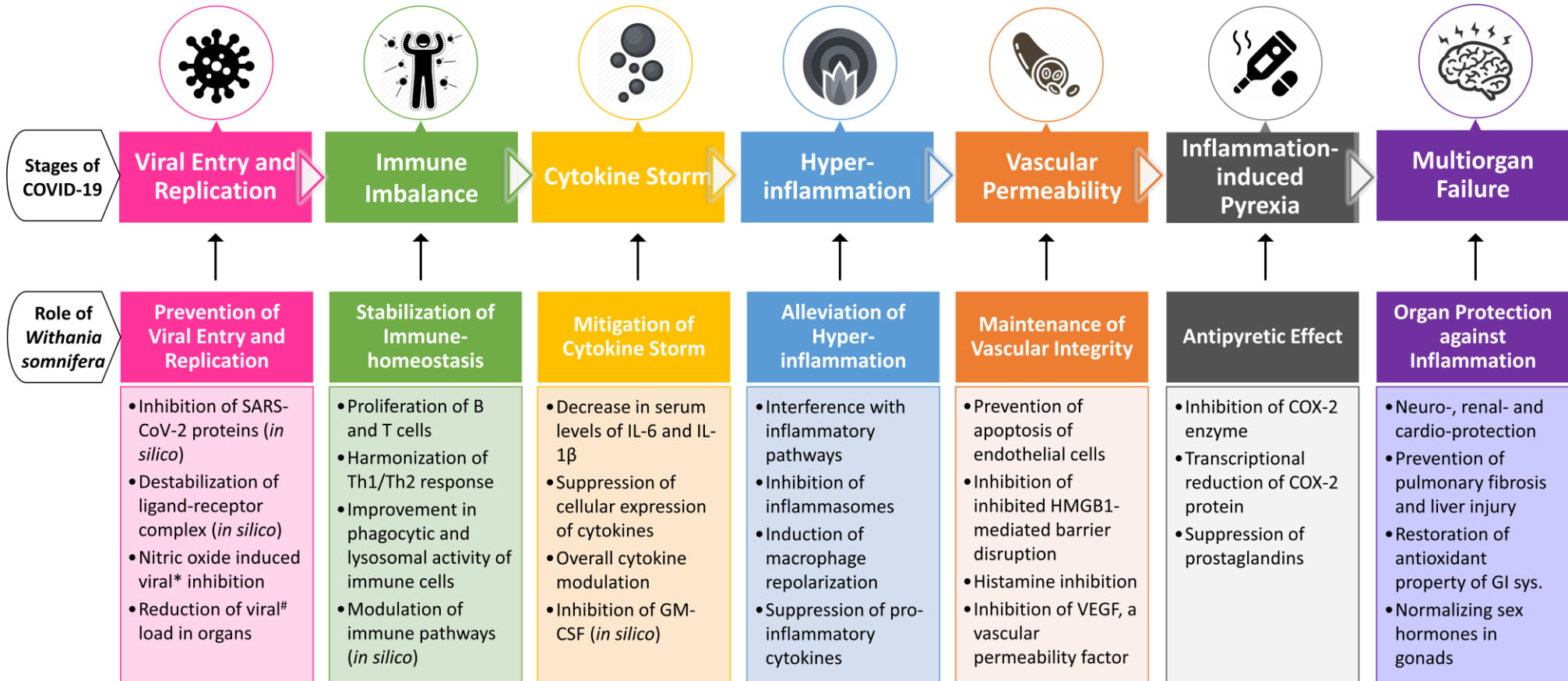
Borse. PLoS One. 2021;16(6):e0248479



IMMUNOMODULATION COVID-19 ADJUVANT



Probable Role of Ashwagandha in COVID-19

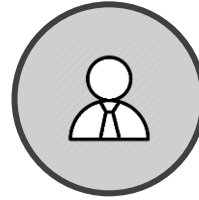


Saggam. Front Pharmacol. 2021;12:623795.

* infectious bursal disease virus; # chicken anaemia virus



AYUSH IN COVID-19 INTERVENTIONS AND STUDIES



Interventions

- **Ayurveda-** AYUSH 64, Kabasura Kudineer, Guduchi, Pippali, Yashti, Ashwagandha, Shunthi, Sanshamani Vati
- **Industry Products-** Anu Tail, Sudarshan Vati, Ayush Kwath, Chyavanprash
- Homeopathy, Unani, Siddha, Sowa Rigpa, Yoga

Clinical Studies

 126 Studies

 1,30,000 Participants

 150 Sites

Prophylaxis

(42 Studies)

Therapy

(50 Studies)

22 RCTs

Prospective	Retrospective
Observational	Population-based

30 RCTs

Prospective	Retrospective
Observational	Open Label

Preclinical Studies

- **Immunomodulation-** innate and adaptive
- **Pharmacology-** anti-inflammatory effect, cytotoxicity
- **Anti-viral Activity-** Syrian hamster model
- **Co-morbidities-** obesity, IR, pulmonary and blood
- **Toxicity Studies-** CNS, CVS, respiratory studies
- **In-vitro-** PK studies

A-66, Y13, U8, S13, H26 Robust Protocols, GCP, CTRI, DSMB, CROs, External Audits



AYUSH IN COVID-19

Multicentre-Double Blind RCT



Ashwagandha as Adjuvant to COVID-19 Vaccine



1200 Sample size



7 Collaborators



Study sites: CRD-Pune, CCRAS
institutions and THSTI



Approved by CEC/IECs



Study registered in CTRI



Protocol in Frontiers in Medicine



AYUSH TASK-FORCE FOR COVID-19 PUBLICATIONS



Publications: AYUSH in COVID-19

30

Online Preprints

25

Journal Publications

37

Under Peer Review

frontiers
in Pharmacology

REVIEW
published: 03 May 2021
doi: 10.3389/fphar.2021.623795

Check for updates

Withania somnifera (L.) Dunal: Opportunity for Clinical Repurposing in COVID-19 Management

Akash Saggam¹, Kirti Limgaokar², Swapnil Borse¹, Preeti Chavan-Gautam¹, Santosh Dixit³, Girish Tillo¹ and Bhushan Patwardhan^{1*}

¹AYUSH Center of Excellence, Center for Complementary and Integrative Health, Interdisciplinary School of Health Sciences, Savitribai Phule Pune University, Pune, India, ²Division of Biochemistry, Department of Chemistry, Ferguson College (Autonomous), Pune, India, ³Preparatory Cancer Care Mission, Pune, India

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JACM

Public Health Approach of Ayurveda and Yoga for COVID-19 Prophylaxis

Girish Tillo, PhD¹, Sarika Chaturvedi, PhD², Arvind Chopra, MD³ and Bhushan Patwardhan, PhD¹

Editor's Note: National governments are deeply divided over whether traditional, complementary and integrative practices have value for human beings relative to COVID-19. We witness a double standard. Medical doctors explore off-label uses of pharmaceutical agents that may have some suggestive research while evidence that indicates potential utility of natural products, practices and practitioners is often dismissed. In this Invited Commentary, a long-time JACM Editorial Board member Bhushan

PLOS ONE

RESEARCH ARTICLE

Ayurveda botanicals in COVID-19 management: An *in silico* multi-target approach

Swapnil Borse^{1*}, Manali Joshi^{2,3*}, Akash Saggam^{1,3*}, Vedika Bhat⁴, Safal Wallia², Aniket Marathe⁵, Sneha Sagar^{6*}, Preeti Chavan-Gautam^{1*}, Aboli Girme⁵, Lal Hingorani⁶, Girish Tillo¹

¹ AYUSH-Center of Excellence, Center for Complementary and Integrative Health, Interdisciplinary School of Health Sciences, Savitribai Phule Pune University, Pune, India, ² Bioinformatics Centre, Savitribai Phule Pune University, Pune, India, ³ Serum Institute of India Pvt. Ltd., Pune, Maharashtra, India, ⁴ Department of Pharmaceutical Chemistry, L. J. Institute of Pharmacy, Sakhej, Ahmedabad, India, ⁵ Pharmanza Herbal Pvt. Ltd., Anand, Gujarat, India

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Complementary Therapies in Medicine 62 (2021) 102768

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Complementary Therapies in Medicine

journal homepage: www.elsevier.com/locate/ctim

Short Communication

Withania somnifera as a safer option to hydroxychloroquine in the chemoprophylaxis of COVID-19: Results of interim analysis

Arvind Chopra¹, Narayanam Srikanth², Bhushan Patwardhan^{3,4,5,6*}, AYUSH CCRAS Research Group^{2,3,4}

¹ Centre for Rheumatic Diseases, Pune, India
² Central Council for Research in Ayurvedic Sciences, New Delhi, India
³ Savitribai Phule Pune University, Pune, India

Journal of Ayurveda and Integrative Medicine 12 (2021) 227–228

Contents lists available at ScienceDirect

Journal of Ayurveda and Integrative Medicine

journal homepage: <http://elsevier.com/locate/jaim>

Editorial

Significance of AYUSH: India's first line of defence against COVID-19

Globally, the COVID-19 pandemic has created a huge turmoil and an existential crisis and most countries are experiencing unprecedented challenges related to healthcare, social, political and economic systems. As the pandemic situation in India was improving after the massive disruptions caused by COVID-19, the second wave arrived. WHO reports indicate that India is now home to nearly 43% of the global new cases of COVID-19 and the numbers continue to soar exponentially as this goes to print. States collect a burden of the global COVID-19 deaths, the undertaken a joint effort wherein over 33,000 AYUSH doctors have been trained to offer COVID care. Under this cascade model, subsequently, about 66,000 AYUSH personnel have been trained through the 'igit.gov.in' platform. These are only a small portion of the huge AYUSH resource pool consisting over 800,000 registered practitioners spread across 900 medical colleges, 4000 hospitals, 50,000 beds, 11 national institutes and 27,200 dispensaries all over the country. It will certainly be prudent to utilize this strength. Adequate resources need to be deployed to enable AYUSH facilities to offer

frontiers
in Pharmacology

ORIGINAL RESEARCH
published: 14 October 2021
doi: 10.3389/fphar.2021.746729

Effect of Prophylactic Use of Intranasal Oil Formulations in the Hamster Model of COVID-19

Zaigham Abbas Rizvi¹, Manas Ranjan Tripathy¹, Nishant Sharma², Sandeep Goswami¹, N Srikanth³, J. L. N. Sastry⁴, Shalindara Mani⁵, Milan Surjit⁶, Amit Awasthi⁷ and Madhu Dikshit^{8*}

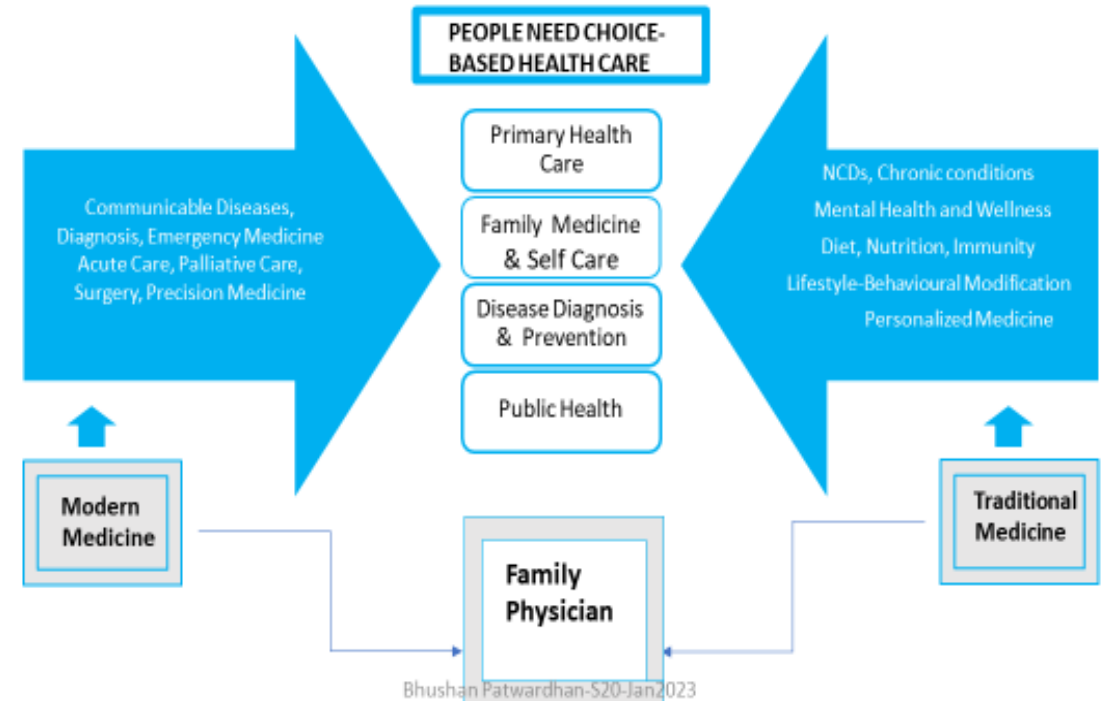
¹Immunobiology Laboratory, Infection and Immunology Centre, Translational Health Science and Technology Institute, NCR-Biotech Science Cluster, Faridabad, India, ²Infection and Immunology Centre, Translational Health Science and Technology Institute, NCR-Biotech Science Cluster, Faridabad, India, ³DGSI/CI, Central Council for Ayurvedic Sciences, New Delhi, India, ⁴CEO-National Medicinal Plants Board, Ministry of AYUSH, New Delhi, India, ⁵Non-communicable Disease Centre, Translational Health Science and Technology Institute, NCR-Biotech Science Cluster, Faridabad, India

SDG Priorities for Health & Well-being

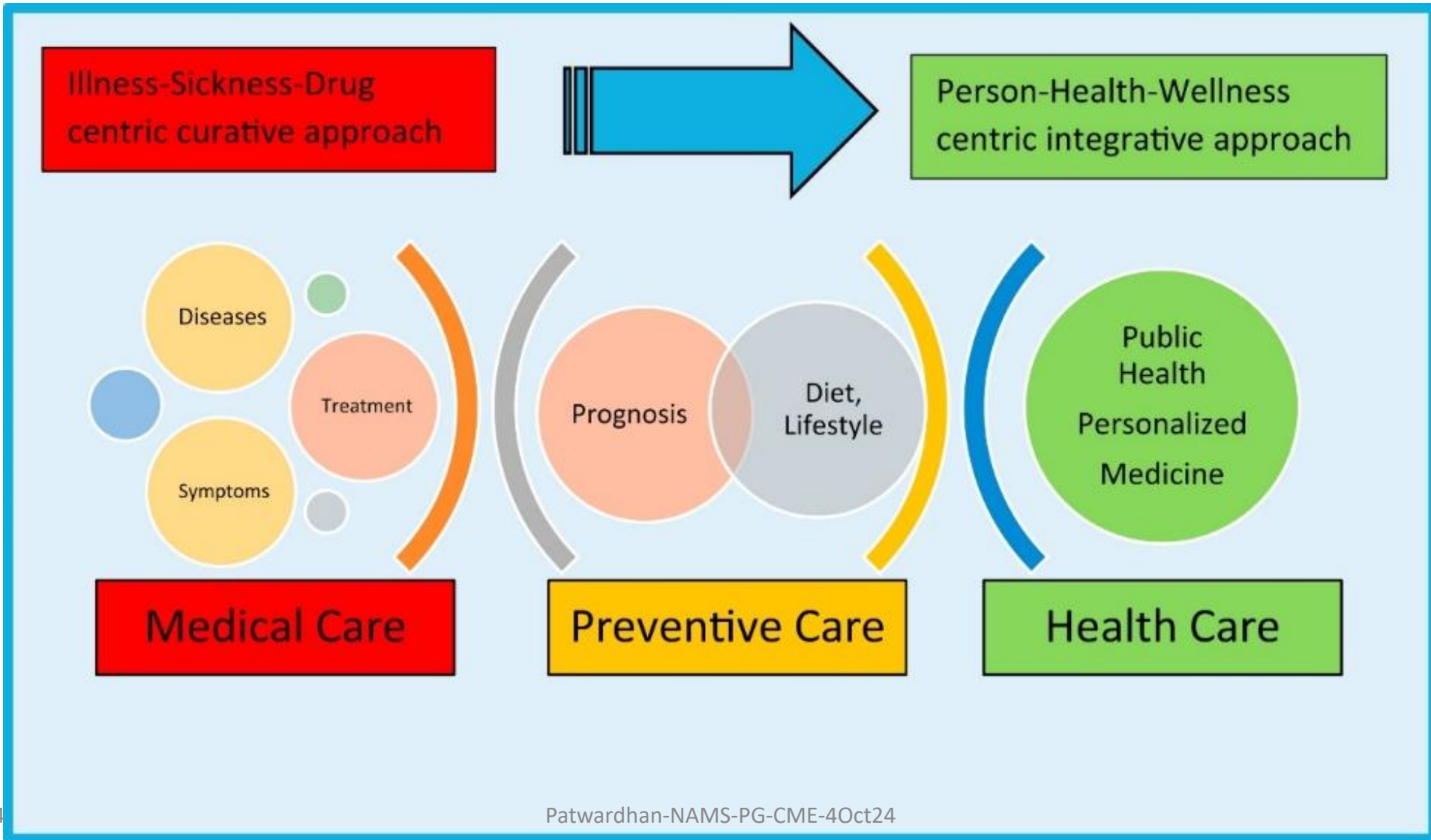
Prevention is Key

- An innovative health care model should be pivoted on principles of disease prevention and health promotion
- Provide thrust on the basic public health determinants such as water supply, environmental sanitation and nutrition
- Empower PHC workers who deliver health care. Nurses, pharmacists, community workers, nutritionist, social workers and many other paramedical workers
- Effective implementation of schemes like **Ayushman Bharat** requires mainstreaming the potentials of AYUSH for health *assurance* to all, in addition to *insurance* cover to poor

People-centric Holistic Approach

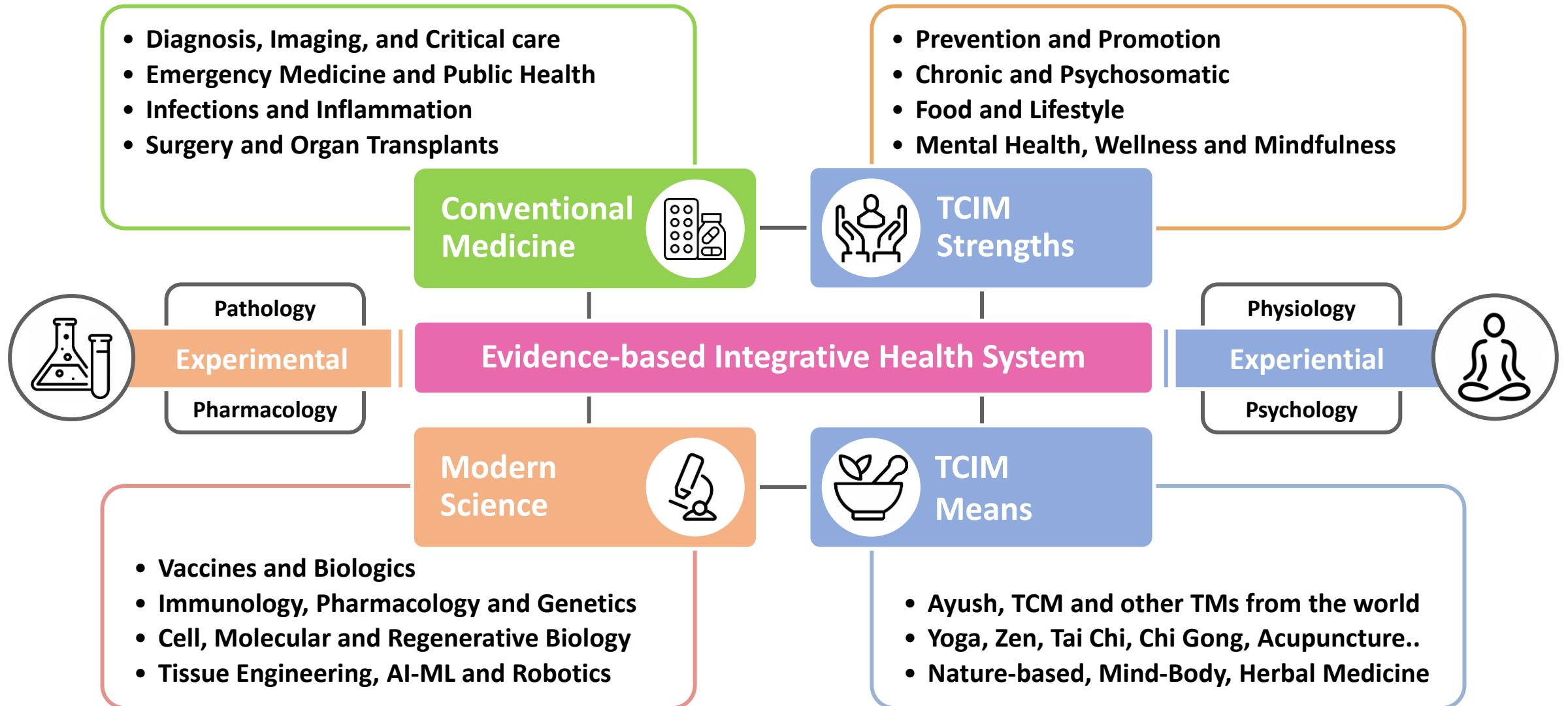


Universal Holistic Healthcare



One World – One Health System

Conventional Medicine + Traditional Medicine ≈ Modern Medicine



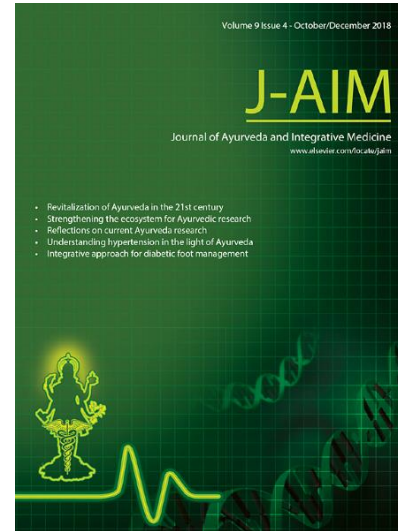
WHO GCTM, Journal and Books

Part 7



Abstract and Indexing

- PubMed/Medline,
- Scopus, Embase
- Web of Science,
- Emerging Sources Citation Index (ESCI)
- Directory of Open Access Journals
- UGC CARE



4.7

CiteScore

1.7

Impact Factor

Ayurveda & Technology

Technological Integration:

- ❖ Advance tools, computational methods, Data analytics.

Guest editors

- R.S. Rajan
- Manali Joshi
- Prashant Gupta

Evidence-based Traditional Medicine

Traditional Medicine system:

- ❖ Prevention and Treatment of chronic disease

Guest editors

- Prof. Dennis Chang
- Prof. Jianping Liu
- Dr. Deep Jyoti Bhuyan

Rasayana, Immunity & Regeneration

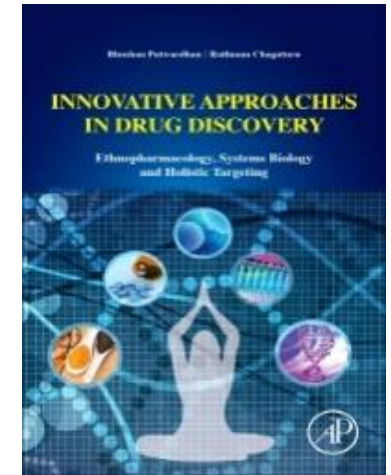
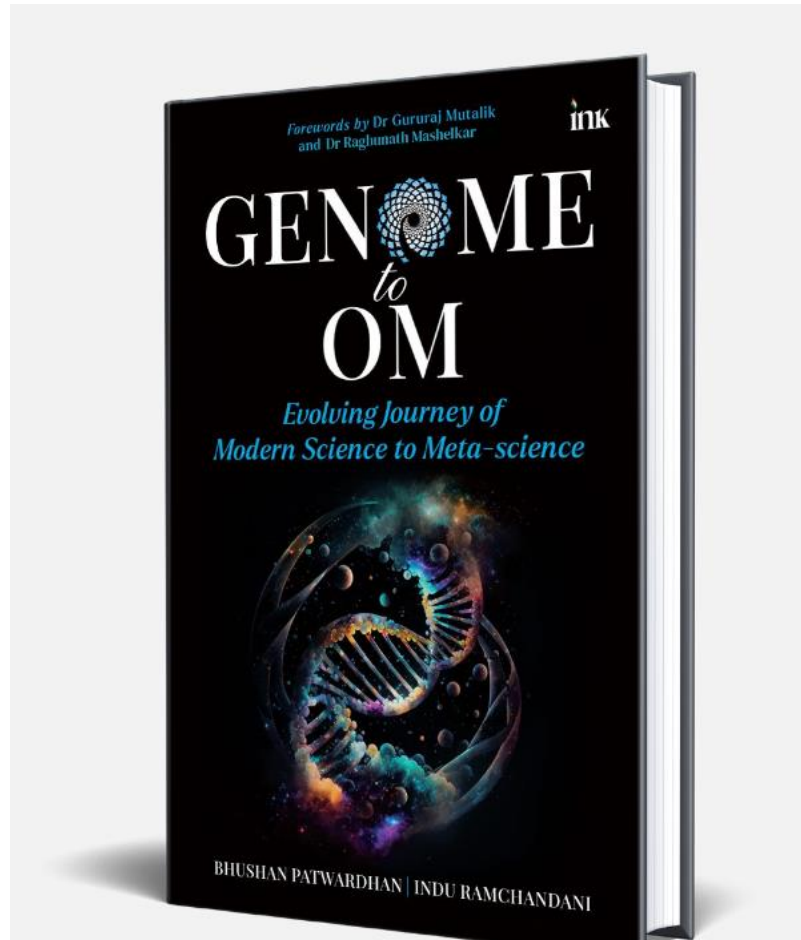
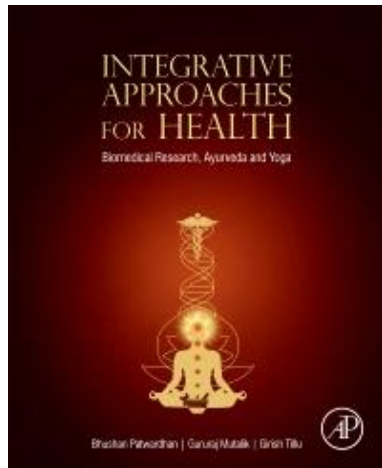
Diverse dimension of Rasayana:

- ❖ Immunomodulation, Healthy aging, Longevity

Guest editors

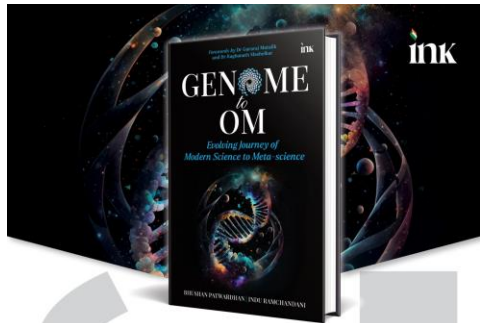
- Prof. Kalpana Joshi
- Dr. Abhinava Kumar Mishra

BOOKS

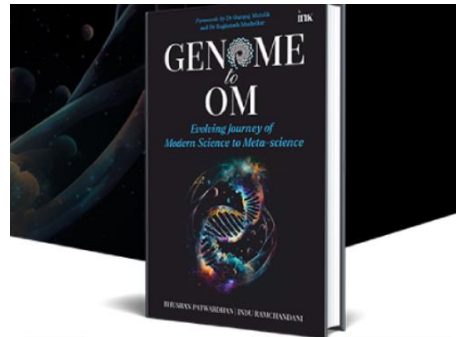


GENOME TO OM

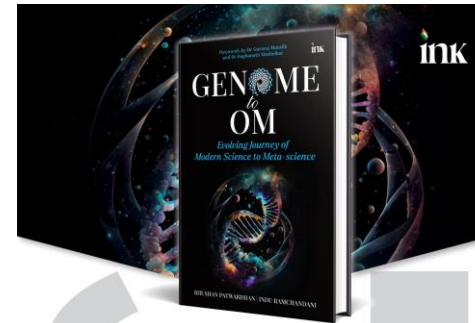
EVOLVING JOURNEY OF MODERN SCIENCE TO META-SCIENCE



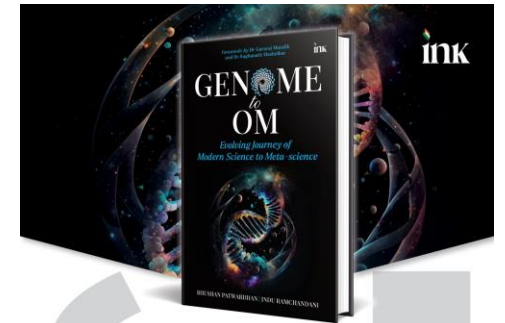
A roadmap for the future understanding and exploration of quantum reality and consciousness.
PROFESSOR GERARD BODEKER, MD, PHD
Green Templeton College, University of Oxford



A thought-provoking exploration where science meets spirituality.
DR K. KASTURIRANGAN , PADMA VIBHUSHAN
Former Chairman, Indian Space Research Organisation (ISRO)



The book projects a new visionary approach of great relevance to all.
DR DAVID FRAWLEY, D. LITT, PADMA BHUSHAN
The American Institute of Vedic Studies at Santa Fe, New Mexico, USA



A call to embrace an innovative, inclusive, technologically advanced, yet spiritually enriched and ethically grounded future.
DR B M HEGDE, PADMA VIBHUSHAN
Former Vice Chancellor, Manipal University, India

Thank You

President Dr Shiv Sarin

Secretary, Dr Umesh Kapil, Dy Secretary Dr A K Sood
NAMS Fellows, Members and Participants



Let's conclude with A Dance of Science and Spirituality