

# ***RESEARCH AT A GLANCE***



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# *Research at a Glance*

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# **PREFACE**

## **Introduction**

The library of the Central Council for Research in Homoeopathy has been circulating "Research at a Glance". The main objective is to disseminate precise information/citation about scientific articles published in various journals/magazine other than the journals subscribed by this Council.

## **Scope**

This volume covers articles on Homeopathy, Ayurveda, Unani, Yoga.

## **Arrangement of Entries**

The articles are indexed under the name of the authors, arranged in alphabetical order. The entries have been made in the following order:

Author  
Title  
Name of Journal  
year of publication; Volume (issue no.): pagination  
Abstract

## **Acknowledgement**

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**(Meenakshi Bhatia)**  
**Librarian Incharge**

# HOMOEOPATHY

**Fibert P, Relton C, Peasgood T et al. Protocol for the STAR (Sheffield Treatments for ADHD) project: an internal pilot study assessing the feasibility of the Trials within Cohorts (TwICs) design to test the effectiveness of interventions for children with ADHD. Pilot Feasibility Stud. 2018 Mar 2;4:61.**

## **Abstract:**

**Background:** Attention deficit hyperactivity disorder (ADHD) is a common and growing problem and a leading cause of child referrals to Child and Adult Mental Health Services (CAMHS). It is a drain on resources across nationally funded support agencies and associated with negative outcomes such as early criminality, school disruption and antisocial behaviour. Mainstream interventions (pharmacological and behavioural) demonstrate effectiveness whilst implemented, but are costly, often have unwanted side effects and do not appear to be affecting long-term outcomes. Development of a robust evidence base for the effectiveness of current and novel interventions and their impact over the long term is required. The aim of the Sheffield Treatments for ADHD Research (STAR) project is to facilitate a rigorous evidence base in order to provide information about the comparative (cost) effectiveness and acceptability of multiple interventions to key stakeholders.

**Methods:** The Trials within Cohorts (TwICs) design was used to build a cohort of children with a diagnosis of ADHD and conduct a three-armed pilot trial of the clinical and cost effectiveness of two novel interventions: (a) treatment by nutritional therapists and (b) treatment by homoeopaths, compared to (c) treatment as usual. Participants are recruited to the STAR long-term observational cohort, and their outcomes of interest (ADHD symptoms, health-related quality of life, school disruption, resource use and criminality) are measured every 6 months by carers and (blinded) teachers. Two promising interventions were identified for the first randomised controlled trial embedded in the cohort. A random selection of eligible participants is offered treatments (a) and (b). The outcomes of those offered treatment are compared to those not offered treatment using intention to treat (ITT) analysis. The feasibility of recruiting to the cohort and the trial, delivering the interventions, the effectiveness of the interventions and the appropriateness, sensitivity and collectability of outcomes is trialled.

**Discussion:** The results of this trial will provide information on the feasibility of the TwICs design to facilitate multiple trials of potential interventions for children with ADHD, and the acceptability, clinical and cost effectiveness of two potential interventions for ADHD to ADHD stakeholders including service

providers. Future stages of the STAR project will test other treatments informed by the results in stage 1.

**Rutten LALB. Flawed statistics and science confirming existing paradigms. J Eval Clin Pract. 2018 Mar 30. doi: 10.1111/jep.12922.**

**Abstract:**

**Background:** Part of the scientific community states that implausible methods cannot have a true effect and that epidemiological proof can only lead to false positives.

**Discussion:** Homeopathy is regarded as an example of an implausible method with false positive evidence. However, epidemiological proof is necessary to falsify the placebo hypothesis. Implausibility is now supposed to rectify selection of a part of all trials, but the applied selection criteria are diverse and not common in conventional medicine. Applying Bayes' theorem only once to demonstrate that a low prior chance does not lead to reasonable probability is flawed application of this theorem.

**Conclusion:** Demanding scientific evidence and then rejecting the same with post-hoc selection of trials and flawed statistics shows unwillingness to falsify the completeness of existing paradigms.

**Singhal S, Roy V. Awareness, practice and views about integrating AYUSH in allopathic curriculum of allopathic doctors and interns in a tertiary care teaching hospital in New Delhi, India. J Integr Med. 2018 Mar;16(2):113-119.**

**Abstract:**

**Objective:** To assess the knowledge, attitude, perception and practice of Ayurveda, yoga, Unani, Siddha, homeopathy and naturopathy (AYUSH) among allopathic doctors and interns and determine their opinion regarding integration of AYUSH education within the allopathic curriculum.

**Methods:** This prospective, cross sectional study was conducted in a tertiary care teaching Hospital, New Delhi, India, from March 2016 to March 2017. A survey of 500 allopathic doctors and 150 interns was performed using a structured questionnaire.

**Results:** A majority of doctors (95.2%) were aware of the term AYUSH and had knowledge of yoga (70.6%), homeopathy (55.6%), Ayurveda (50.3%), Siddha (47.8%), naturopathy (32.9%) and Unani (28.9%). Most of the participants (63.0%) felt that therapies under AYUSH are effective. A majority (84.0%) of the doctors were of the view that more research is required in the field of AYUSH. While homeopathy (44.0%) was the most common system used by doctors for themselves, yoga was the therapy most commonly (60.0%) recommended to patients. Nearly half of the doctors (46.7%) recommended AYUSH to their

patients, mainly for chronic illness (74.0%). A majority (77.5%) of the respondents agreed that students of allopathic medicine should be familiarized with AYUSH. The modes of incorporation of AYUSH into the medical curriculum most commonly suggested by respondents were optional courses (54.5%) and introductory lectures (42.3%).

**Conclusion:** Doctors and interns of allopathic medicine are aware of AYUSH systems. They use it for themselves and recommend it to patients. They believe that familiarization of Bachelor of Medicine and Bachelor of Surgery students with AYUSH therapies and their integration with allopathic medicine may help in improving patient care.

## AYURVEDA

**Arunadevi R, Susila R, Murugammal S et al. Preparation and standardization of Mathan Tailam: A classical Siddha formulation for diabetic ulcerative wound healing. J Ayurveda Integr Med. 2018 Mar 16. pii: S0975-9476(17)30095-5.**

### **Abstract:**

**Background:** Increasing popularity of Mathan Tailam (mattan tailam, pachai ennai) for the treatment of diabetic foot ulcer necessitated standardization and quality control of this medicated oil both in large scale production and quality check in marketed drug.

**Objective:** Present study aims to develop standard operating procedure for the preparation of Mathan Tailam as per Siddha Formulary of India and its standardization using suitable analytical techniques.

**Materials and methods:** Mathan Tailam was prepared as per Siddha Formulary of India. Physicochemical parameters and preliminary phytochemical screening were carried out using standard methods. The in-house prepared sample underwent physico-chemical analysis, qualitative phytochemical analysis, Gas chromatography-mass spectrum (GC-MS) analysis, High performance thin layer chromatographic (HPTLC) fingerprinting profile and inductively coupled plasma-optical emission spectroscopic (ICP-OES) analysis.

**Results:** Physico-chemical parameters of the prepared formulation were comparable to that of coconut oil. Aqueous methanolic extract of this drug was found to be positive for alkaloid, saponin, coumarin, steroid, triterpenoid, quinine and furan. The GC-MS values were comparable to that of the base used i.e., the coconut oil. HPTLC fingerprinting profile revealed the presence of phytochemicals in the medicated oil derived from both coconut oil and Datura metel. ICP-OES addressed the mineral portion of the formulation and its safety in heavy metal aspect.

**Conclusion:** All these parameters can be utilized for the overall quality check over its preparation and formulation.

**Chopra A, Saluja M, Kianifard T et al. Long term effectiveness of RA-1, a standardized Ayurvedic medicine as a monotherapy and in combination with disease modifying anti-rheumatic drugs in the treatment of rheumatoid arthritis. J Ayurveda Integr Med. 2018 Mar 8. pii: S0975-9476(17)30023-2.**

**Abstract:**

**Background:** Data on long term use of Ayurvedic drugs is sparse. They may prove useful if combined with modern medicine in certain clinical situations (integrative medicine). We present the results of a long term observational study of RA-1 (Ayurvedic drug) used in the treatment of rheumatoid arthritis (RA).

**Materials and methods:** On completion of a 16 week randomized controlled study, 165 consenting volunteer patients were enrolled into a three year open label phase (OLP) study. Patients were symptomatic with persistent active disease and naïve for disease modifying anti-rheumatic drugs (DMARD). 57 patients were on fixed low dose prednisone. Patients were examined every 10-14 weeks in a routine rheumatology practice using standard care norms. They continued RA-1 (Artrex™, 2 tablets twice daily) throughout the study period and were generally advised to lead a healthy life style. Based on clinical judgment, rheumatologist added DMARD and/or steroids (modified if already in use) to patients with inadequate response; chloroquine and/or methotrexate commonly used. Treatment response was assessed using American College of Rheumatology (ACR) efficacy measures and ACR 20% improvement index standard update statistical software (SAS and SPSS) were used; significant at  $p < 0.05$ .

**Results:** 158, 130 and 122 patients respectively completed evaluations at 1, 2 and 3 year primary end point. The ACR 20 response (range 34-40%) remained stable over three years ( $p = 0.33$ ). Patients improved optimum for several measures by one year ( $p < 0.05$ ) and this was sustained. The use of steroids varied from 42 to 49% patients at yearly end points (mean daily dose 5 mg prednisone); correspondingly the use of DMARD varied from 20 to 34% patients. 40% patients on RA-1 did not require DMARD/steroids for control of disease. 77% patients reported adverse events, albeit mild and mostly gut related, and not causing withdrawal. Several study limitations (especially self-selection) were reduced by the high patient retention and consistency in drug use.

**Conclusion:** RA-1 is safe and effective in the long term management of symptomatic active chronic RA. DMARDs and/or steroids can be used judiciously along with RA-1 to treat difficult disease/flare. Further studies are required to evaluate RA-1 in early RA. This paves way for research and application of integrative therapeutic approach in clinical medicine.

**Dal Negro RW, Zanasi A, Turco P et al. Influenza and influenza-like syndromes: the subjects' beliefs, the attitude to prevention and**

**treatment, and the impact in Italian general population. *Multidiscip Respir Med.* 2018 Mar 1;13:7.**

**Abstract:**

**Background:** Influenza and influenza-like syndromes (I-LSs) are infectious diseases occurring on a seasonal basis which can lead to upper (URTI) and lower respiratory tract illness (LRTI) of different severity. The approach to these disorders is unfortunately not uniform. Aim of the study was to investigate real-life people beliefs, the attitude to their prevention and treatment, and their impact in general population.

**Methods:** A cross-sectional survey via Computer Assisted Telephone Interview (CATI) was carried out using a specific questionnaire investigating influenza episode rates, subjects behavior in case of influenza and I-LSs, and prescribed therapy.

**Results:** 1,202 subjects completed the questionnaire: median age was 46, 49% male, 20% active smokers. 57% of respondents experienced at least one episode of influenza or I-LS in the previous 12 months; episodes were usually home-managed, shorter than 2 weeks and more frequent in fall and winter (73% of the total). GP resulted the first health-care option (56%); almost 3% of respondents referred to the emergency room, and hospitalization occurred in 1%. Mucolytics resulted the most prescribed drugs (55%) followed by antibiotics and aerosol therapy (37-38%). Even if more than 70% of subjects considered vaccination essential, only 14% received influenza vaccination yearly and almost 60% had never received vaccination. Approximately 36% of respondents regarded homeopathy (namely Oscillococinum) as an helpful alternative because of perceived as safer.

**Conclusions:** Seasonal prevalence of I-LSs and influenza partially overlap. As virus identification is not a common procedure in daily practice, only a clinical discrimination is possible. Antibiotic prescription is still too high and largely inappropriate. Influenza vaccination is strongly encouraged, but different strategies are also used. Other approaches are receiving increasing attention in general population, and subjects' willingness to spend out-of-pocket for effective remedies is also increasing. The discrepancy between subjects' beliefs and health care actions likely reflects the insufficiency of institutional preventive strategies. In general, the approach to influenza and I-LSs appear variable and highly dependent of subjects' and their GPs' cultural beliefs.

**Gupta RA, Motiwala MN, Mahajan UN et al. Protective effect of *Sesbania grandiflora* on acetic acid induced ulcerative colitis in mice by inhibition**

**Abstract:**

**Ethnopharmacological relevance:** The plant *Sesbania grandiflora* (Linn) belonging to the family Fabaceae is commonly known as sesbania, agathi, and katurai. The plant is accredited for alleviating a spectrum of ailments including inflammation, colitis, diarrhea, dysentery, leprosy, gout, rheumatism, jaundice, bronchitis, convulsion and anxiety. It is also used as antitumour, anthelmintic, and laxatives in Ayurveda and Siddha system of Indian traditional medicine.

**Aim:** To reveal protective effect of *Sesbania grandiflora* in acetic acid induced ulcerative colitis in mice.

**Materials and method:** Polyphenol, flavonoid and flavanone contents of different extracts of *S. grandiflora* leaves were quantified and correlated with their antioxidant capacity in-vitro (DPPH assay) for identification of potential fraction. In further studies hydroalcoholic extract (HASG, 100 and 200mg/kg) was evaluated for protective effect towards acetic acid induced ulcerative colitis (UC) animals administered with 150 $\mu$ l of 5% acetic acid once, intrarectally. The colonic mucosal injury was assessed by estimating disease activity index (DAI), which took into account weight loss, stool consistency and occult/gross bleeding. Macroscopic changes like colon length, spleen weights, ulcer area and ulcer index were determined. Haematological parameters like WBC count, RBC count, Hb (g/dL), HCT (%), PLT count and FFA level were determined. Biochemical analysis was carried out for asserting the levels of tissue myeloperoxidase (MPO) accumulation, SOD concentrations, reduced GSH and lipid peroxidation in UC induced and treated animals. The cardinal inflammatory biomarkers like nitric oxide (NO), tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) and interleukin (IL-6) were determined. Histopathological investigation was carried out and scores were calculated.

**Results:** HASG showed presence of highly polymerised polyphenols and flavonoids amongst other extracts of *S. grandiflora*, which is correlated to its rich antioxidant potential (IC<sub>50</sub>=19.21). HPLC fingerprinting quantifies the presence of quercetin in concentration of 81.7 $\mu$ g/mg of HASG. HASG (200mg/kg) and Prednisolone (2mg/kg) significantly reduced DAI and macroscopic scores. The haematological changes in experimental animals were restored upon treatment with HASG and Prednisolone. HASG showed potent antioxidant activity (In-vivo) by restoring the levels of SOD, GSH, MPO, MDA and NO. HASG was found to inhibit FFA levels, which may indicate inhibition

of TLR4 receptor mediated inflammation. The levels of serological biomarkers like TNF- $\alpha$  and IL-6 were found to be suppressed. Histopathological investigation reveals decrease signs of ulceration, necrosis, cellular infiltration, hyperaemia in HASG treated animals. The results of HASG (200mg/kg) were found to be comparable with Prednisolone (2mg/kg) significantly.

**Conclusion:** The protective action of HASG against acetic acid induced UC is attributed to the antioxidant like action (In-vitro and In-vivo) of highly polymerized polyphenols and flavonoids especially quercetin. Also HASG was found to reduce the levels of TNF- $\alpha$  and IL-6, thereby suppressing their inflammatory response in UC.

**Kabra A, Sharma R, Singla S et al. Pharmacognostic characterization of Myrica esculenta leaves. J Ayurveda Integr Med. 2018 Mar 12. pii: S0975-9476(17)30289-9**

**Abstract:**

**Background:** Myrica esculenta (Family: Myricaceae) commonly known as Kaiphala or Katphala is a widely used medicinal plant in Ayurveda. In spite of its numerous medicinal attributes, no published work is available till date on pharmacognostical characterization and HPTLC analysis of its leaves.

**Objectives:** To investigate the pharmacognostical, physicochemical, and HPTLC profiles of M. esculenta leaves.

**Materials and methods:** The measures taken for pharmacognostical characterization were organoleptic study, macroscopy, microscopy, powder microscopy, leaf constant, fluorescence analysis, preliminary phytochemical screening and HPTLC spectra profile.

**Results:** Organoleptic and macroscopic studies found that leaves are lanceolate, thin, spirally arranged, dark green in color, with an astringent taste and acute apex. In transverse section, cuticularised epidermis having polygonal cells were found. Mesophyll cells were differentiated into single layered palisade cells on each surface and 2-3 layered spongy parenchyma, unicellular and uniseriate hollow trichomes, anomocytic stomata and bowl shaped vascular bundle in mid rib portion containing xylem and phloem tissues. Alkaloids, carbohydrates, flavonoids, glycosides, phenolic compounds and tannins were found present. Analysis on the leaf constants, powder microscopy, fluorescence characteristics and physical parameters resulted a valuable data to establish standards for the plant. HPTLC profile provides

number of constituents present in the extracts with their respective Retention Factor (Rf).

**Conclusion:** Present report on pharmacognostical characterization and HPTLC analysis of *M. esculenta* leaves provides a vital diagnostic tool for identification, authentication and development of quality parameters of the species. Data obtained by present study may be considered as standard for future studies.

**Mestry SN, Gawali NB, Pai SA et al. Punica granatum improves renal function in gentamicin-induced nephropathy in rats via attenuation of oxidative stress. J Ayurveda Integr Med. 2018 Mar 16. pii: S0975-9476(17)30323-6.**

**Abstract:**

**Background:** Gentamicin is widely used as an antibiotic for the treatment of gram negative infections. Evidences indicates that oxidative stress is involved in gentamicin-induced nephrotoxicity. In Ayurvedic medicine, *Punica granatum* Linn. is considered as 'a pharmacy unto itself'. It has been claimed in traditional literature, to treat various kidney ailments due to its antioxidant potential.

**Objective:** To explore the possible mechanism of action of methanolic extract of *P. granatum* leaves (MPGL) in exerting a protective effect on gentamicin-induced nephropathy.

**Material and methods:** Animals were administered with gentamicin (80 mg/kg/day i.m.) and simultaneously with MPGL (100, 200 and 400 mg/kg p.o.) or metformin (100 mg/kg p.o.) for 8 days. A satellite group was employed in order to check for reversibility of nephrotoxic effects post discontinuation of gentamicin administration. At the end of the study, all the rats were sacrificed and serum-urine parameters were investigated. Antioxidant enzymes and tumor necrosis factor alpha (TNF- $\alpha$ ) levels were determined in the kidney tissues along with histopathological examination of kidneys.

**Results:** Increase in serum creatinine, urea, TNF- $\alpha$ , lipid peroxidation along with fall in the antioxidant enzymes activity and degeneration of tubules, arterioles as revealed by histopathological examination confirmed the manifestation of nephrotoxicity caused due to gentamicin. Simultaneous administration of MPGL and gentamicin protected kidneys against nephrotoxic effects of gentamicin as evidenced from normalization of renal function parameters and amelioration of histopathological changes.

**Conclusion:** Data suggests that MPGL attenuated oxidative stress associated renal injury by preserving antioxidant enzymes, reducing lipid peroxidation and inhibiting inflammatory mediators such as TNF- $\alpha$ .

**Mikulski MA, Wichman MD, Simmons DL et al. Toxic metals in ayurvedic preparations from a public health lead poisoning cluster investigation. Int J Occup Environ Health. 2018 Mar 12:1-6. doi: 10.1080/10773525.2018.1447880.**

**Abstract:**

Background Herbal formulations, traditional medicine, and complementary and alternative medicine are used by the majority of the world's population. Toxicity associated with use of Ayurvedic products due to metal content is an increasingly recognized potential public health problem. Objectives Report on toxic metals content of Ayurvedic products obtained during an investigation of lead poisoning among users of Ayurvedic medicine. Methods Samples of Ayurvedic formulations were analyzed for metals and metalloids following established US. Environmental Protection Agency methods. Results Lead was found in 65% of 252 Ayurvedic medicine samples with mercury and arsenic found in 38 and 32% of samples, respectively. Almost half of samples containing mercury, 36% of samples containing lead and 39% of samples containing arsenic had concentrations of those metals per pill that exceeded, up to several thousand times, the recommended daily intake values for pharmaceutical impurities. Conclusions Lack of regulations regarding manufacturing and content or purity of Ayurvedic and other herbal formulations poses a significant global public health problem.

**Rajan R, Robin DT, M V. Biomedical waste management in Ayurveda hospitals - current practices & future prospectives. J Ayurveda Integ Med. 2018 Mar 16. pii: S0975-9476(17)30212-7**

**Abstract:**

Biomedical waste management is an integral part of traditional and contemporary system of health care. The paper focuses on the identification and classification of biomedical wastes in Ayurvedic hospitals, current practices of its management in Ayurveda hospitals and its future prospective. Databases like PubMed (1975-2017 Feb), Scopus (1960-2017), AYUSH Portal, DOAJ, DHARA and Google scholar were searched. We used the medical subject headings 'biomedical waste' and 'health care waste' for identification and classification. The terms 'biomedical waste management', 'health care waste management' alone and combined with 'Ayurveda' or 'Ayurvedic' for current practices and recent advances in the treatment of these wastes were used. We made a humble attempt to categorize the biomedical wastes

from Ayurvedic hospitals as the available data about its grouping is very scarce. Proper biomedical waste management is the mainstay of hospital cleanliness, hospital hygiene and maintenance activities. Current disposal techniques adopted for Ayurveda biomedical wastes are - sewage/drains, incineration and land fill. But these methods are having some merits as well as demerits. Our review has identified a number of interesting areas for future research such as the logical application of bioremediation techniques in biomedical waste management and the usage of effective micro-organisms and solar energy in waste disposal.

**Ramesh MB, Ammu S, Nayanatara AK et al. Comparative study of the effect of stress on the cognitive parameters in women with increased body mass index before and after menopause. J Basic Clin Physiol Pharmacol. 2018 Mar 23.**

**Abstract:**

**Background:** The increasing prevalence of overweight and obesity is a critical public health problem for women. The negative effect of stress on memory and cognitive functions has been widely explored for decades in numerous research projects using a wide range of methodology. Deterioration of memory and other brain functions is a hallmark of Alzheimer's disease. Estrogen fluctuations and withdrawal have myriad direct effects on the central nervous system that have the potential to influence cognitive functions. The present study aims to compare the effect of stress on the cognitive functions in overweight/obese women before and after menopause.

**Methods:** A total of 142 female subjects constituting women before menopause between the ages of 18 and 44 years and women after menopause between the ages of 45 and 60 years were included in the sample. Participants were categorized into overweight/obese groups based on the body mass index. The major tool perceived stress scale was used for measuring the perception of stress. On the basis of the stress scale measurement, each group was classified into with stress and without stress. Addenbrooke's Cognitive Examination-III was used for measuring the cognitive functions.

**Results:** Premenopausal women with stress showed a significant ( $p < 0.05$ ) decrease in the cognitive parameters such as attention and orientation, fluency, language and visuospatial ability. Memory did not show any significant changes in this group. Whereas, in the postmenopausal stressed women, all the cognitive functions except fluency showed a significant ( $p < 0.05$ ) decrease.

**Conclusions:** Stress is a significant factor on the cognitive functions of obese and overweight women before and after menopause. Practice of yoga and

encouragement in activities like gardening, embroidery, games and relaxation techniques should be recommended to prevent stress. Insights into the neurobiology before and after menopause can be gained from future studies examining the effect on the hypothalamic-pituitary-adrenal axis in relation to cognition and stress.

**Rastogi S. Ayurveda formulations: A roadmap to address the safety concerns. J Ayurveda Integr Med. 2018 Mar 13. pii: S0975-9476(17)30802-1.**

**Sethiya NK, Nahata A, Singh PK et al. Neuropharmacological evaluation on four traditional herbs used as nervine tonic and commonly available as Shankhpushpi in India. J Ayurveda Integr Med. 2018 Mar 9. pii: S0975-9476(17)30242-5.**

**Abstract:**

**Objective:** The present study was undertaken to evaluate the neuropharmacological effect of four herbs commonly identified as source of Shankhpushpi.

**Background:** Shankhpushpi is an Ayurvedic drug, widely used for its actions on the central nervous system, especially to improve intellect and boost memory. Four botanicals viz. *Canscora decussata* Schult. (CD), *Clitorea ternatea* Linn. (CT), *Convolvulus pluricaulis* Choisy. (CP) and *Evolvulus alsinoides* Linn. (EA) are considered as sources of Shankhpushpi by Indian practitioners on the basis of their morphological descriptions given in ancient texts.

**Materials and methods:** Methanol extracts of all four varieties were tested and evaluated in vitro and in vivo for their neuropharmacological effects. Experiments such as protection against  $\beta$ -amyloid induced neurotoxicity on brain cell line (Neuro 2A), antioxidant potential, AchE (acetylcholinesterase enzyme) inhibition, and 5-LOX (lipoxygenase) enzyme inhibition were conducted for in vitro evaluation. For in vivo evaluation, scopolamine (0.3 mg/kg i.p.) induced memory retrieval using pole climbing apparatus and Morris water maze were performed in rat models.

**Results:** It was found that protective effects of EA and CD against  $\beta$ -amyloid induced neurotoxicity in Neuro 2A cells were significantly higher than CT and CP. EA proved to be superior than other varieties on the basis of antioxidant activity, AchE inhibitory and LOX inhibitory activities. The preventive activity of EA on scopolamine induced memory retrieval in pole climbing and Morris water maze task in rats was found to be higher than that of CD, CT and CP.

**Conclusion:** EA has remarkable neuropharmacological effect as compared to other three varieties of Shankhpushpi. This effect may be attributed due to the presence of steroids (stigmasterol and betulinic acid), coumarins (scopoletin) and flavonoids ( $\beta$ -carotene and chlorogenic acid). Hence it can be used as a promising lead in development and management of neuronal disorders including Alzheimer's disease.

**Shrungeswara AH, Unnikrishnan MK. Evolution of dietary preferences and the innate urge to heal: Drug discovery lessons from Ayurveda. J Ayurveda Integr Med. 2018 Mar 22. pii: S0975-9476(17)30260-7**

**Abstract:**

Highly specialized and functionally integrated cognitive systems facilitate hedonistic and healthy food preferences. Guided by survival needs, flavor preferences not only select safe, nutritious dietary components, but also those with negligible calorific value but significant health benefits, for example, spices. Feeding behavior, both innate and acquired, is guided not only by taste receptors on the tongue but also visceral organs. The gustatory cortex receives information from all senses, not just taste, suggesting multiple checkpoints in predicting and evaluating healthy foods. Ayurvedic interpretation of 'rasa' as chemistry is compatible with medicinal value of diets because, taste and odor are chemosensory perceptions. As flavor and taste are linked to the chemical structure of compounds, taste might offer clues about pharmacological activity. Ayurvedic idea of vipaka, or post digestive perception of taste, recognizes the extended role of taste receptors beyond the tongue and stretching into the viscera. Ayurvedic wisdom is consistent with evolutionary guideposts that suggest three successive stages of nutritional appraisal: before, during, and after ingesting food. While olfaction induces affinity or revulsion even before ingestion, gustatory receptors on the tongue evaluates nutritional value upon contact, and the chemoreceptors in the deeper metabolic systems probably pronounce the final verdict on the nutritive and health benefits of ingested substances. Alliesthesia, neophobia, and the extreme variation in human T2R genes (coding for bitterness receptors) illustrate the importance of adaptive learning of dietary preferences. These evolutionary clues are compatible with the Ayurvedic principle of 'rasa', in facilitating the process of drug discovery.

## UNANI MEDICINE

**Choudhary D, Adhikary S, Ahmad N et al. Prevention of articular cartilage degeneration in a rat model of monosodium iodoacetate induced osteoarthritis by oral treatment with Withaferin A. *Biomed Pharmacother.* 2018 Mar; 99:151-161.**

### **Abstract:**

Withaferin A (WFA), a highly oxygenated withanolide is used for anti-osteoporotic, fracture healing, obesity control as medicine and dietary supplement in Ayurveda and Unani medicine but its potential remains to be investigate for the osteoarthritis studies. In the present study, chondro-protective effects of WFA, under in vitro and in vivo conditions were evaluated. In-vitro pharmacological activity of WFA was tested on rat articular chondrocytes through MTT, DPPH, different staining, FACS and translation studies. In-vivo studies of WFA were evaluated through monosodium iodoacetate (MIA) induced osteoarthritis studies. DPPH assay, alcian blue and toluidine blue staining indicated the chondrogenic potential of WFA. Similarly, WFA enhance chondrogenesis through up-regulation of SOX9 protein. In addition, WFA reduced the ROS generation, mitochondrial depolarization and apoptosis induced by inflammatory cytokines IL-1 $\beta$  and TNF- $\alpha$ . Furthermore, WFA treatment in MIA treated rats alleviated cartilage erosion and improvement in sub-chondral bone micro-architecture by decrease in Tissue volume (~32%), and trabecular bone pattern factor (~28%). Taken together, our study provides convincing evidence for the candidature of WFA (10 mg kg<sup>-1</sup> day<sup>-1</sup>) as a potential agent for the treatment of cartilage degenerative diseases like osteoarthritis.

## YOGA

**Afridi A, Malik AN, Ali S et al. Effect of balance training in older adults using Wii fit plus. J Pak Med Assoc. 2018 Mar;68(3):480-483.**

### **Abstract:**

The Nintendo Wii-fit plus is a type of Virtual Reality exer-gaming with graphical and auditory response system. A case series was conducted at Shifa Tamer-e-Millat University Islamabad from January-July 2016. Sixteen adults more than 60 years age (07 males and 09 females) were recruited through convenient sampling. The specified Wii fit plus training was provided to all patients and the games included the Soccer heading, Ski slalom, table tilt and yoga. Berg balance test, time up and go and functional reach test were used before and after 06 weeks of treatment (4 days / week). Data was analysed by SPSS V-20. The mean age of the sample was  $67.56 \pm 7.29$  years, with 56% female and 44% males were in sample. There was a statistically significant difference in pre and post Berg Balance Score, time up and go test and functional reach. In this case series Wii-fit plus training was effective in improving dynamic balance and mobility in older adults. This should be explored further in large trials.

**Alam M, Walter AJ, Geisler A, Roongpisuthipong W et al. Association of Facial Exercise With the Appearance of Aging. JAMA Dermatol. 2018 Mar 1;154(3):365-367.**

**Badon SE, Littman AJ, Chan KCG et al. Associations of Maternal Light/Moderate Leisure-Time Walking and Yoga With Offspring Birth Size. J Phys Act Health. 2018 Mar 15:1-10. doi: 10.1123/jpah.2017-0187.**

### **Abstract:**

**Background:** Although perinatal walking and yoga have been associated with decreased risks of pregnancy complications, associations with offspring birth size have been inconsistent. We investigated associations of prepregnancy and early pregnancy leisure-time light/moderate walking and yoga practice with birth size.

**Methods:** Study participants (N = 3687) reported leisure-time physical activity duration (hours per week) in the year before pregnancy and early pregnancy. Birth size was abstracted from medical records. Regression was used to determine mean differences in birth weight, head circumference, and ponderal index. Interaction terms were used to assess effect modification by offspring sex.

**Results:** About one-third of women reported light/moderate leisure-time walking and about 10% reported yoga practice. Women in the highest tertile for prepregnancy (mean: 2.9 h/wk; range: 1.4-20 h/wk) or early pregnancy (mean: 5.9 h/wk; range: 3.1-24 h/wk) light/moderate walking had offspring with 0.9 and 1.5 kg/m<sup>3</sup> greater ponderal index (95% confidence interval, 0.3

to 1.4 and 0.7 to 2.4, respectively) compared with women who reported no light/moderate walking in the same time period. Light/moderate walking was not associated with birth weight or head circumference. Yoga practice was not associated with birth size. Associations were similar by offspring sex.

**Conclusion:** Light/moderate leisure-time walking may be associated with greater offspring ponderal index

**Briani RV, Ferreira AS, Pazzinatto MF et al. What interventions can improve quality of life or psychosocial factors of individuals with knee osteoarthritis? A systematic review with meta-analysis of primary outcomes from randomised controlled trials. Br J Sports Med. 2018 Mar 16. pii: bjsports-2017-098099. doi: 10.1136/bjsports-2017-098099.**

**Abstract:**

**Objective:** To systematically review evidence of primary outcomes from randomised controlled trials (RCTs) examining the effect of treatment strategies on quality of life (QoL) or psychosocial factors in individuals with knee osteoarthritis (OA).

**Design:** Systematic review with meta-analysis.

**Data sources:** Medline, Embase, SPORTDiscus, the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Web of Science were searched from inception to November 2017.

**Eligibility criteria for selecting studies:** We included RCTs investigating the effect of conservative interventions on QoL or psychosocial factors in individuals with knee OA. Only RCTs considering these outcomes as primary were included.

**Results:** Pooled data supported the use of exercise therapy compared with controls for improving health-related and knee-related QoL. There was limited evidence that a combined treatment of yoga, transcutaneous electrical stimulation and ultrasound may be effective in improving QoL. Limited evidence supported the use of cognitive behavioural therapies (with or without being combined with exercise therapy) for improving psychosocial factors such as self-efficacy, depression and psychological distress.

**Summary/conclusion:** Exercise therapy (with or without being combined with other interventions) seems to be effective in improving health-related and knee-related QoL or psychosocial factors of individuals with knee OA. In addition, evidence supports the use of cognitive behavioural therapies (with or without exercise therapy) for improving psychosocial factors such as self-efficacy, depression and psychological distress in individuals with knee OA.

**Cohen SCL, Harvey DJ, Shields RH et al. Effects of Yoga on Attention, Impulsivity, and Hyperactivity in Preschool-Aged Children with Attention-Deficit Hyperactivity Disorder Symptoms. J Dev Behav Pediatr. 2018 Mar 13. doi: 10.1097/DBP.0000000000000552.**

**Abstract:**

**Objective:** Behavioral therapies are first-line for preschoolers with attention-deficit hyperactivity disorder (ADHD). Studies support yoga for school-aged children with ADHD; this study evaluated yoga in preschoolers on parent- and teacher-rated attention/challenging behaviors, attentional control (Kinder Test of Attentional Performance [KiTAP]), and heart rate variability (HRV).

**Methods:** This randomized waitlist-controlled trial tested a 6-week yoga intervention in preschoolers with  $\geq 4$  ADHD symptoms on the ADHD Rating Scale-IV Preschool Version. Group 1 ( $n = 12$ ) practiced yoga first; Group 2 ( $n = 11$ ) practiced yoga second. We collected data at 4 time points: baseline, T1 (6 weeks), T2 (12 weeks), and follow-up (3 months after T2).

**Results:** At baseline, there were no significant differences between groups. At T1, Group 1 had faster reaction times on the KiTAP go/no-go task ( $p = 0.01$ , 95% confidence interval [CI], -371.1 to -59.1,  $d = -1.7$ ), fewer distractibility errors of omission ( $p = 0.009$ , 95% CI, -14.2 to -2.3,  $d = -1.5$ ), and more commission errors ( $p = 0.02$ , 95% CI, 1.4-14.8,  $d = 1.3$ ) than Group 2. Children in Group 1 with more severe symptoms at baseline showed improvement at T1 versus control on parent-rated Strengths and Difficulties Questionnaire hyperactivity inattention ( $\beta = -2.1$ ,  $p = 0.04$ , 95% CI, -4.0 to -0.1) and inattention on the ADHD Rating Scale ( $\beta = -4.4$ ,  $p = 0.02$ , 95% CI, -7.9 to -0.9). HRV measures did not differ between groups.

**Conclusion:** Yoga was associated with modest improvements on an objective measure of attention (KiTAP) and selective improvements on parent ratings.

**Combs MA, Critchfield EA, Soble JR. Relax while you rehabilitate: A pilot study integrating a novel, yoga-based mindfulness group intervention into a residential military brain injury rehabilitation program. Rehabil Psychol. 2018 Mar 12. doi: 10.1037/rep0000179.**

**Abstract:**

**Objective:** This preliminary, pilot study assessed the effectiveness of a group-based, mindfulness intervention in a residential, rehabilitation setting with

specific focus on assessing participants' self-report of perceived benefit of the intervention on overall health, pain, sleep, mood/anxiety, attention, and self-awareness, as well as implementing modifications needed for successful intervention application among a diverse, clinical military population.

**Method/design:** Participants were 19 veterans and active duty service members with a history of traumatic brain injury (TBI; 63% severe) who completed a mindfulness-based group intervention during inpatient admission at a Veterans Affairs Polytrauma Transitional Rehabilitation Program (PTRP). Mindfulness and yoga skills were taught in a required, weekly group incorporated into participants' rehabilitation schedule. Opinions and attitudes about mindfulness, as well as pertinent self-report outcome measures, were obtained pre- and postgroup participation.

**Results:** Results suggested that participation in the group was positively associated with individuals' self-reported belief about the benefit of mindfulness in the areas of overall health, physical health, mood, focus, and self-awareness. The more groups attended, the more positive the participants' beliefs about potential impact on overall health and mood became, even while controlling for length of rehabilitation stay. Additionally, several specific group modifications relevant to this population (e.g., physical/environmental modifications, repetition, ignoring/reorienting) were implemented to support successful participation.

**Conclusions/implications:** These preliminary and exploratory findings suggest that it may be worthwhile for psychologists, clinicians, and other health care providers working with a mixed TBI population, and more specifically a military population with TBI, to consider introducing mindfulness skills as part of multidisciplinary rehabilitation. (PsycINFO Database Record

**Cramer H, Peng W, Lauche R. Yoga for menopausal symptoms-A systematic review and meta-analysis. Maturitas. 2018 Mar;109:13-25.**

**Abstract:**

**Objectives:** To systematically review and meta-analyze the effectiveness of yoga for menopausal symptoms.

**Methods:** Medline (via PubMed), the Cochrane Central Register of Controlled Trials, and Scopus were screened through to February 21, 2017 for randomized controlled trials (RCTs) comparing the effects of yoga on menopausal symptoms to those of no treatment or active comparators. Standardized mean differences (SMD) and 95% confidence intervals (CI) were calculated. Two authors independently assessed risk of bias using the Cochrane risk of bias tool.

**Results:** Thirteen RCTs with 1306 participants were included. Compared with no treatment, yoga reduced total menopausal symptoms (SMD=-1.05; 95% CI -1.57 to -0.53), psychological (SMD=-0.75; 95% CI -1.17 to -0.34), somatic

(SMD=-0.65; 95% CI -1.05 to -0.25), vasomotor (SMD=-0.76; 95% CI -1.27 to -0.25), and urogenital symptoms (SMD=-0.53; 95% CI -0.81 to -0.25). Compared with exercise controls, only an effect on vasomotor symptoms was found (SMD=-0.45; 95% CI -0.87 to -0.04). Effects were robust against selection bias, but not against detection and attrition bias. No serious adverse events were reported.

**Conclusion:** Yoga seems to be effective and safe for reducing menopausal symptoms. Effects are comparable to those of other exercise interventions.

**Giambrone CA, Cook-Cottone CP, Klein JE. Africa Yoga Project and Well-Being: A Concept Map of Students' Perceptions. Appl Psychol Health Well Being. 2018 Mar;10(1):149-170.**

**Abstract:**

**Background:** Concept mapping methodology was used to explore the perceived impact of practicing yoga with the Africa Yoga Project (AYP)-an organisation created to increase health and well-being by providing community-based yoga classes throughout Kenya. AYP's mission fit with theoretical models of well-being is discussed. Anecdotal evidence and initial qualitative research suggested the AYP meaningfully impacted adult students.

**Methods:** Of the hundreds of AYP's adult students, 56 and 82 students participated in Phases I and II, respectively. Phase I brainstorming resulted in 94 student-generated statements about their perceived change. Phase II participants sorted and rated statements in terms of importance. Multidimensional scaling and hierarchical cluster analysis of sort data was utilised to map and group statements into clusters.

**Results:** Based on statistical and interpretive criteria, a five-cluster solution with the following concepts was identified as the best model of students' change: Personal Growth; Interpersonal Effectiveness (lowest importance); Physical and Social Benefits; Emotional Resiliency; and Improved Self-Concept (highest importance).

**Conclusions:** Overall, students reported positive perceptions of the AYP. Additional research is needed to quantify students' change, and to compare the AYP outcomes to those of other programs aimed at poverty-related stress reduction and well-being.

**Hunter SD, Laosiripisan J, Elmenshawy A et al. Effects of yoga interventions practised in heated and thermoneutral conditions on endothelium-dependent vasodilatation: The Bikram yoga heart study. Exp Physiol. 2018 Mar 1;103(3):391-396.**

**Abstract:**

**NEW FINDINGS:** What is the central question of this study? Does the heated practice environment enhance the effects of Bikram yoga on endothelium-

dependent vasodilatation in healthy, middle-aged adults? What is the main finding and its importance? The primary finding from this investigation is that the hatha yoga postures in the Bikram yoga series produce similar enhancements in endothelium-dependent vasodilatation in healthy, middle-aged adults regardless of environmental temperature. These findings highlight the efficacy of yoga postures in producing improvements in vascular health and downplay the necessity of the heated practice environment in inducing vascular adaptations.

**Abstract:** We have previously documented improvements in endothelium-dependent vasodilatation with a Bikram (hot) yoga intervention in middle-aged adults. At present, the effect of environmental temperature in hot yoga on endothelial function is unknown. The purpose of this investigation was to determine the effects of Bikram yoga interventions performed in heated or thermoneutral conditions on endothelium-dependent vasodilatation. Fifty-two sedentary but apparently healthy adults aged 40-60 years were randomly assigned to one of three groups: Bikram yoga practised at 40.5°C (n = 19), Bikram yoga practised at 23°C (n = 14) or sedentary time control (n = 19). The yoga interventions consisted of 90 min Bikram yoga classes three times a week for 12 weeks. Endothelium-dependent vasodilatation was measured non-invasively using brachial artery flow-mediated dilatation (FMD). Body fat percentage determined via dual-energy X-ray absorptiometry was significantly lower in the hot yoga group after the intervention than in the thermoneutral yoga and control conditions. Brachial artery FMD increased ( $P < 0.05$ ) in the thermoneutral yoga group and tended to increase in the hot yoga group ( $P = 0.056$ ). No changes occurred in the control group. There were no significant differences in FMD change scores between groups. We conclude that Bikram yoga practised in thermoneutral conditions improved endothelium-dependent vasodilatation in healthy, middle-aged adults. These new findings highlight the effectiveness of hatha yoga postures alone, in the absence of a heated practice environment, in improving vascular health and are of clinical significance given the increased propensity for heat intolerance in ageing adults.

**Lauritsen CG, Chua AL, Nahas SJ. Current Treatment Options: Headache Related to Menopause-Diagnosis and Management. Curr Treat Options Neurol. 2018 Mar 6;20(4):7.**

**Abstract:**

**Purpose of review:** Menopause is a life-changing event in numerous ways. Many women with migraine hold hope that the transition to the climacteric state will coincide with a cessation or improvement of migraine. This assumption is based mainly on common lay perceptions as well as assertions from many in the healthcare community. Unfortunately, evidence suggests this is far from the rule. Many women turn to a general practitioner or a headache specialist for prognosis and management. A natural instinct is to manipulate the offending agent, but in some cases, this approach backfires, or the concern

for adverse events outweighs the desire for a therapeutic trial, and other strategies must be pursued. Our aim was to review the frequency and type of headache syndromes associated with menopause, to review the evidence for specific treatments for headache associated with menopause, and to provide management recommendations and prognostic guidance.

**Recent Findings:** We reviewed both clinic- and population-based studies assessing headache associated with menopause. Headache in menopause is less common than headache at earlier ages but can present a unique challenge. Migraine phenotype predominates, but presentations can vary or be due to secondary causes. Other headache types, such as tension-type headache (TTH) and cluster headache (CH) may also be linked to or altered by hormonal changes. There is a lack of well-defined diagnostic criteria for headache syndromes associated with menopause. Women with surgical menopause often experience a worse course of disease status than those with natural menopause. Hormonal replacement therapy (HRT) often results in worsening of migraine and carries potential for increased cardiovascular and ischemic stroke risk. Estrogen replacement therapy (ERT) in patients with migraine with aura (MA) may increase the risk of ischemic stroke; however, the effect is likely dose-dependent. Some medications used in the prophylaxis of migraine may be useful in ameliorating the vasomotor and mood effects of menopause, including venlafaxine, escitalopram, paroxetine, and gabapentin. Other non-medication strategies such as acupuncture, vitamin E, black cohosh, aerobic exercise, and yoga may also be helpful in reducing headache and/or vasomotor symptoms associated with menopause. The frequency and type of headache associated with menopause is variable, though migraine and TTH are most common. Women may experience a worsening, an improvement, or no change in headache during the menopausal transition. Treatment may be limited by vascular risks or other medical and psychiatric factors. We recommend using medications with dual benefit for migraine and vasomotor symptoms including venlafaxine, escitalopram, paroxetine, and gabapentin, as well as non-medication strategies such as acupuncture, vitamin E, black cohosh, aerobic exercise, and yoga. If HRT is pursued, continuous (rather than cyclical) physiological doses should be used, transdermal route of administration is recommended, and the patient should be counseled on the potential for increased risk of adverse events (AEs). Concomitant use of a progestogen decreases the risk of endometrial hyperplasia with ERT. Biological mechanisms are incompletely understood, and there is a lack of consensus on how to define and classify headache in menopause. Further research to focus on pathophysiology and nuanced management is desired.

**Park CL, Elwy AR, Maiya M et al. Essential Properties of Yoga Questionnaire (EPYQ): Psychometric Properties. Int J Yoga Therap. 2018 Mar 2. doi: 10.17761/2018-00016R2.**

**Abstract:**

Yoga interventions are heterogeneous and vary along multiple dimensions. These dimensions may affect mental and physical health outcomes in different ways or through different mechanisms. However, most studies of the effects of yoga on health do not adequately describe or quantify the components of the interventions being implemented. This lack of detail prevents researchers from making comparisons across studies and limits our understanding of the relative effects of different aspects of yoga interventions. To address this problem, we developed the Essential Properties of Yoga Questionnaire (EPYQ), which allows researchers to objectively characterize their interventions. We present here the reliability and validity data from the final phases of this measure-development project. Analyses identified fourteen key dimensions of yoga interventions measured by the EPYQ: acceptance/compassion, bandhas, body awareness, breathwork, instructor mention of health benefits, individual attention, meditation and mindfulness, mental and emotional awareness, physicality, active postures, restorative postures, social aspects, spirituality, and yoga philosophy. The EPYQ demonstrated good reliability, as assessed by internal consistency and test-retest reliability analysis, and evidence suggests that the EPYQ is a valid measure of multiple dimensions of yoga. The measure is ready for use by clinicians and researchers. Results indicate that, currently, trained objective raters should score interventions to avoid reference frame errors and potential rating bias, but alternative approaches may be developed. The EPYQ will allow researchers to link specific yoga dimensions to identifiable health outcomes and optimize the design of yoga interventions for specific conditions.

**Sauvan M, Chabbert-Buffet N, Canis M et al. Medical treatment for the management of painful endometriosis without infertility: CNGOF-HAS Endometriosis Guidelines. Gynecol Obstet Fertil Senol. 2018 Mar 3. pii: S2468-7189(18)30060-6. doi: 10.1016/j.gofs.2018.02.028.**

**Abstract:**

**Objective:** To provide clinical practice guidelines for the management of painful endometriosis in women without infertility.

**Methods:** Systematic review of the literature literature since 2006, level of evidence rating, external proofreading and grading of the recommendation grade by an expert group according to HAS methodology.

**Results:** Combined hormonal contraceptives (COP) and the levonorgestrel-releasing intra-uterin system (LNG-IUS) are recommended as first-line hormonal therapies for the treatment of painful endometriosis (grade B). Second-line therapy relies on oral desogestrel microprogestative, etonogestrel-releasing implant, GnRH analogs (GnRHa) and dienogest (grade C). It is recommended to use add-back therapy containing estrogen in association with GnRHa (grade B). After endometriosis surgery, hormonal treatment relying on COP or LNG-IUS is recommended to prevent pain recurrence (grade B). COP is recommended to reduce the risk of endometrioma recurrence after surgery

(grade B) but the prescription of GnRHa is not recommended (grade C). Continuous COP is recommended in case of dysmenorrhea (grade B). GnRHa is not recommended as first line endometriosis treatment for adolescent girl because of the risk of bone demineralization (grade B). The management of endometriosis-induced chronic pain requires an interdisciplinary evaluation. Physical therapies improving the quality of life such as yoga, relaxation or osteopathy can be proposed (expert agreement). Promising medical alternatives are currently under preclinical and clinical evaluation.

**Shnayder MM, Brannan D, Murphy LA et al. Musculoskeletal Pain and Interest in Meditation and Yoga in Home Health Aides: Evidence From the Home Health Occupations Musculoskeletal Examinations (HHOME) Study. Home Healthc Now. 2018 Mar/Apr;36(2):103-113.**

**Abstract:**

Home healthcare aides (HHAs) are a growing U.S. workforce highly susceptible to workplace stressors and musculoskeletal pain. In the present study we: 1) examine the association of musculoskeletal pain to life satisfaction and emotional exhaustion; and 2) characterize interest in meditation and yoga in a sample of HHAs. A nonprobabilistic sample of HHAs employed at home healthcare agencies in Florida, Massachusetts, and Oregon (n = 285 total) completed a self-administered questionnaire with standard survey measures on musculoskeletal pain location, duration, and severity; life satisfaction; emotional exhaustion; and interest in meditation techniques and yoga. Among HHAs responding, 48.4% reported pain in the last 7 days and 46.6% reported pain in the last 3 months. Home healthcare aides who reported current pain and chronic pain had a significant ( $P < .05$ ) decrease in satisfaction with life score and a significant increase in emotional exhaustion score. The majority of HHAs reported an interest in learning about the benefits (65.6%) and practice (66.4%) of meditation and a willingness to participate in a yoga class (59.2%) or stress management meeting (59.1%). The HHAs reported both acute and chronic musculoskeletal pain that was correlated with lower life satisfaction and greater emotional exhaustion. More efforts are needed to reduce the sources of injury and emotional exhaustion.

**Singhal S, Roy V. Awareness, practice and views about integrating AYUSH in allopathic curriculum of allopathic doctors and interns in a tertiary care teaching hospital in New Delhi, India. J Integr Med. 2018 Mar;16(2):113-119.**

**Abstract:**

**Objective:** To assess the knowledge, attitude, perception and practice of Ayurveda, yoga, Unani, Siddha, homeopathy and naturopathy (AYUSH) among allopathic doctors and interns and determine their opinion regarding integration of AYUSH education within the allopathic curriculum.

**Methods:** This prospective, cross sectional study was conducted in a tertiary care teaching Hospital, New Delhi, India, from March 2016 to March 2017. A survey of 500 allopathic doctors and 150 interns was performed using a structured questionnaire.

**Results:** A majority of doctors (95.2%) were aware of the term AYUSH and had knowledge of yoga (70.6%), homeopathy (55.6%), Ayurveda (50.3%), Siddha (47.8%), naturopathy (32.9%) and Unani (28.9%). Most of the participants (63.0%) felt that therapies under AYUSH are effective. A majority (84.0%) of the doctors were of the view that more research is required in the field of AYUSH. While homeopathy (44.0%) was the most common system used by doctors for themselves, yoga was the therapy most commonly (60.0%) recommended to patients. Nearly half of the doctors (46.7%) recommended AYUSH to their patients, mainly for chronic illness (74.0%). A majority (77.5%) of the respondents agreed that students of allopathic medicine should be familiarized with AYUSH. The modes of incorporation of AYUSH into the medical curriculum most commonly suggested by respondents were optional courses (54.5%) and introductory lectures (42.3%).

**Conclusion:** Doctors and interns of allopathic medicine are aware of AYUSH systems. They use it for themselves and recommend it to patients. They believe that familiarization of Bachelor of Medicine and Bachelor of Surgery students with AYUSH therapies and their integration with allopathic medicine may help in improving patient care.

**Tulloch A, Bombell H, Dean C et al. Yoga-based exercise improves health-related quality of life and mental well-being in older people: A systematic review of randomised controlled trials. Age Ageing. 2018 Mar 23. doi: 10.1093/ageing/afy044.**

**Abstract:**

**Objective:** health-related quality of life (HRQOL) and mental well-being are associated with healthy ageing. Physical activity positively impacts both HRQOL and mental well-being. Yoga is a physical activity that can be modified to suits the needs of older people and is growing in popularity. We conducted a systematic review with meta-analysis to determine the impact of yoga-based exercise on HRQOL and mental well-being in people aged 60+.

**Methods:** searches were conducted for relevant trials in the following electronic databases; MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, CINAHL, Allied and Complementary Medicine Database, PsycINFO and the Physiotherapy Evidence Database (PEDro) from inception to January 2017. Trials that evaluated the effect of physical yoga on HRQOL and/or on mental well-being in people aged 60+ years were included. Data on HRQOL and mental well-being were extracted. Standardised mean differences

and 95% confidence intervals (CI) were calculated using random effects models. Methodological quality of trials was assessed using the PEDro scale.

**Results:** twelve trials of high methodological quality (mean PEDro score 6.1), totalling 752 participants, were identified and provided data for the meta-analysis. Yoga produced a medium effect on HRQOL (Hedges'  $g = 0.51$ , 95% CI 0.25-0.76, 12 trials) and a small effect on mental well-being (Hedges'  $g = 0.38$ , 95% CI 0.15-0.62, 12 trials).

**Conclusion:** yoga interventions resulted in small to moderate improvements in both HRQOL and mental well-being in people aged 60+ years. Further, research is needed to determine the optimal dose of yoga to maximise health impact.

**Usher C, Thompson A, Griebeler M et al. Meals, Mindfulness, & Moving Forward: A feasibility study to a multi-modal lifestyle approach in early psychosis. Early Interv Psychiatry. 2018 Mar 7. doi: 10.1111/eip.12546.**

**Abstract:**

**Aim:** The primary aim was to demonstrate adherence to a novel 6-week lifestyle intervention program ("Meals, Mindfulness, & Moving Forward" [M3 ]) designed to help improve lifestyle practices of youth with a history of at least 1 psychotic episode.

**Methods:** M3 used a non-equivalent control group design involving clients from a community early intervention program. Seventeen individuals in the active M3 program and 16 controls were assessed for secondary outcomes at baseline, 6-weeks, and 12-weeks (6 weeks post-intervention) on cardiometabolic and symptomatic outcomes.

**Results:** The program met its primary aim with 88% (15/17) of participants meeting adherence criteria. Compared with the controls, M3 participants showed significant improvement in positive psychotic symptoms ( $P = .002$ ).

**Conclusion:** This pilot study showed that young people involved in a community early intervention program adhered to an activity-based lifestyle program which included mindfulness meditation, yoga and nutrition education, warranting further evaluation with a larger sample size.

**Wellsandt E, Golightly Y. Exercise in the management of knee and hip osteoarthritis. Curr Opin Rheumatol. 2018 Mar;30(2):151-159.**

**Abstract:**

**Purpose Of Review:** This review focuses on studies published during July 2001 to August 2017 of exercise as an intervention in knee and hip osteoarthritis, including its influence on an array of patient outcomes.

**Recent findings:** Studies continue to illustrate the efficacy of exercise in treating and managing osteoarthritis, with current literature more focused on the knee compared with the hip joint. Both traditional (e.g. strength, aerobic, flexibility) and more nontraditional (e.g. yoga, Tai Chi, aquatic) training modes improve patient outcomes related to joint symptoms, mobility, quality of life, psychological health, musculoskeletal properties, body composition, sleep, and fatigue. Exercise that is adequately dosed (e.g. frequency, intensity) and progressive in nature demonstrated the greatest improvements in patient outcomes. Supervised, partially supervised, and nonsupervised interventions can be successful in the treatment of osteoarthritis, but patient preference regarding level of supervision and mode of exercise may be key predictors in exercise adherence and degree of outcome improvement. A topic of increasing interest in osteoarthritis is the supplementary role of behavior training in exercise interventions.

**Summary:** Osteoarthritis is a complex, multifactorial disease that can be successfully managed and treated through exercise, with minimal risk for negative consequences. However, to have greatest impact, appropriate exercise prescription is needed. Efforts to achieve correct exercise doses and mitigate patient nonadherence are needed to lessen the lifelong burden of osteoarthritis.

**Wojcikowski K, Vigar VJ, Oliver CJ. New Concepts of Chronic Pain and the Potential Role of Complementary Therapies. Altern Ther Health Med. 2018 Mar 10. pii: AT5525.**

**Abstract:**

**Context:** The mechanisms of chronic pain involve complex neuroplastic changes at all 3 orders of neurons involved in the transmission of pain as well as changes in the descending inhibitory pathway. Although traditional pharmaceutical therapies have some efficacy, substantial scope exists for a new model of individualized therapy, tailored to the specific response of each patient. Because changes occur at all levels of the pain pathway, successful treatment may require a combination of therapies with different mechanisms of action.

**Objective:** The research team intended to examine the potential changes within the peripheral nervous system (PNS) and central nervous system (CNS) of patients with chronic pain and to propose a model of chronic pain treatment involving multimodal, complementary therapies for individualized treatment targeting multiple sites along the pain pathway.

**Design:** The research team performed a review of the literature in the field.

**Setting:** The study took place in the School of Health and Human Sciences at Southern Cross University (Lismore, New South Wales, Australia).  
**Interventions** • A growing body of evidence supports the use of a variety of complementary therapies to treat chronic pain, including curcumin, capsaicin,

vitamin D, omega-3 fatty acids, lipoic acid, acupuncture, yoga, meditation, and mindfulness meditation. These therapies vary with respect to the mechanisms by which they act and the potential areas of effect along the pain pathway.

**Results:** The literature review showed a number of complementary therapies may be efficacious in reducing chronic pain and/or the need for analgesics, which may offer a reduced adverse effect profile. These therapies include curcumin, capsaicin, vitamin D, omega-3 fatty acids, lipoic acid, acupuncture, yoga, meditation, and mindfulness meditation. Response rates to treatment are likely to vary between people and within therapies.

**Conclusions:** The available evidence suggests that efficacious complementary therapies exist that target all 3 orders of neurons and, therefore, the authors recommend multimodal individualized treatment for each patient. There is high interindividual variability between patients in responses to treatments.