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 enteries have been made in the following order:

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

Acknowledgement

We are grateful to Dr. R.K. Manchanda, Director General, CCRH for his encouragement and valuable suggestions from time to time. We sincere acknowledge the cooperation of Mrs. Nisha Adhikari, DEO in compiling this bulletin.

(Meenakshi Bhatia)
Librarian Incharge

HOMOEOPATHY

Cleland JGF. What do cardiology and homeopathy have in common?: A Belief in Aspirin? *JACC Heart Fail. 2017*; 5(8):611-14p.

Kaliszan R, Waszczuk Jankowska M, Siluk D et al. Molecularly imprinted chromatography fails to distinguish homeopathic remedy from placebo. *J Sep Sci. 2017*; doi: 10.1002/jssc.201700861.

Abstract:

It was sensation when Dr. J. Beneviste reported alleged experimental biological evidence of the water memory effect (E. Dayenas et al. Nature 333, 816-818, 1988; https://doi.org/10.1038/333816a0). These experiments have never been reproduced in controlled conditions, however. Instead, the hypothesis that water can be imprinted with the memory of past solutes was ruled out (J. Maddox et al. Nature 334, 287-290, 1988; https://doi.org/10.1038/334287a0). At present, so-called "molecular imprinting" is a technology of preparing polymer matrices as affinity-based analyte separation media (J. Haginaka J. Sep. Sci. 32, 1548-1565, 2009). By analogy, one can assume that the water/ethanol mixture used for manufacturing homeopatic remedies might comprise "molecular imprints" of drug molecules, which were formed in "potentization". If so, then a LC experiment involving homeopatic solution of a drug vs. analogously made placebo solution applied as mobile phases should demonstrate a faster elution (lesser retention) of the drug. We elaborated a UHPLC procedure to obtain measurable retention times for aconitine with a mobile phase of ca. 15% v/v of ethanol in water. This was accomplished with the use of a 3 × 50 mm, 2.7 micron column Poroshel 120 EC-18 (Agilent) and 0.1% of formic acid added to the eluent. A reference UHPLC experiments were done with an ad hoc made 15% v/v ethanol/water mobile phase. The following retention times were found: 15.61 min for Aconitum CH30, 16.14 min for placebo (both from Apteka Homeopatyczna Pod Wagą, Syców, Poland), whereas it was 11.84 and 11.68 min for the eluent not subjected to potentization. We determined by GC that the actual concentrations of ethanol in the eleuents were: 17.78, 17.34, 18.56 and 18.56% v/v, respectively. As a matter of fact, the homeopatic solution appeared to have a lesser affinity for the drug than the placebo. Anyway, bearing in mind a normal linear decrease of retention with ethanol concentration, one cannot recognize 0.52 min difference between Aconitum CH30 and placebo as meaningful. Hence, "molecular imprints" of aconitine in homeopatic remedy are unlikely. Still, the experimental approach proposed can further be tested also with regards to the claimed "molecular imprints" on the HPLC stationary phase polymers.

Lees P, Pelligand L, Whiting M et al. Comparison of veterinary drugs and veterinary homeopathy: Part 1. *Vet Rec. 2017*; 181(7):170-76p.

Abstract:

For many years after its invention around 1796, homeopathy was widely used in people and later in animals. Over the intervening period (1796-2016) pharmacology emerged as a science from Materia Medica (medicinal materials) to become the mainstay of veterinary therapeutics. There remains today a much smaller, but significant, use of homeopathy by veterinary surgeons. Homeopathic products are sometimes administered when conventional drug therapies have not succeeded, but are also used as alternatives to scientifically based therapies and licensed products.

The principles underlying the veterinary use of drug-based and homeopathic products are polar opposites; this provides the basis for comparison between them. This two-part review compares and contrasts the two treatment forms in respect of history, constituents, methods of preparation, known or postulated mechanisms underlying responses, the legal basis for use and scientific credibility in the 21st century. Part 1 begins with a consideration of why therapeutic products actually work or appear to do so.

Lees P, Pelligand L, Whiting M et al. Comparison of veterinary drugs and veterinary homeopathy: Part 2. *Vet Rec. 2017*; 181(8):198-207p.

Abstract:

Part 2 of this narrative review outlines the theoretical and practical bases for assessing the efficacy and effectiveness of conventional medicines and homeopathic products. Known and postulated mechanisms of action are critically reviewed. The evidence for clinical efficacy of products in both categories, in the form of practitioner experience, meta-analysis and systematic reviews of clinical trial results, is discussed. The review also addresses problems and pitfalls in assessing data, and the ethical and negative aspects of pharmacology and homeopathy in veterinary medicine.

Sarradon Eck A, Bouhnik AD, Rey D, Bendiane MK et al. Use of non-conventional medicine two years after cancer diagnosis in France: Evidence from the VICAN survey. *J Cancer Surviv. 2017*; 11(4):421-30p.

Abstract:

Purpose: The purpose of this study was to assess the use of non-conventional medicine (NCM) in a representative sample of French patients 2 years after cancer diagnosis.

Methods: The study was based on data obtained in the VICAN survey (2012) on a representative sample of 4349 patients 2 years after cancer diagnosis. Self-reported data were collected at telephone interviews with patients. The questionnaire addressed the various types of non-conventional treatments used at the time of the survey.

Results: Among the participants, 16.4% reported that they used NCM, and 45.3% of this group had not used NCM before cancer diagnosis (new NCM users). Commonly, NCMs used were homeopathy (64.0%), acupuncture (22.1%), osteopathy (15.1%), herbal medicine (8.1%), diets (7.3%) and energy therapies (5.8%). NCM use was found to be significantly associated with younger age, female gender and a higher education level. Previous NCM use was significantly associated with having a managerial occupation and an expected 5-year survival rate ≥80% at diagnosis; recent NCM use was associated with cancer progression since diagnosis, impaired quality of life and higher pain reports.

Conclusion: This is the first study on NCM use 2 years after cancer diagnosis in France. In nearly half of the NCM users, cancer diagnosis was one of the main factors which incited patients to use NCM. Apart from the NCM users' socioeconomic profile, the present results show that impaired health was a decisive factor: opting for unconventional approaches was therefore a pragmatic response to needs which conventional medicine fails to meet during the course of the disease.

Implications for Cancer Survivors: Better information of patients and caregivers is needed to allow access to these therapies to a larger population of survivors.

Turner A. Evaluating the UK house of commons science and technology committee's position on the implausible effectiveness of homeopathic treatments. *Theor Med Bioeth. 2017*; 38(4): 335-52p.

Abstract:

In 2009, the UK House of Commons Science and Technology Committee (STC) conducted an 'evidence check' on homeopathy to evaluate evidence for its effectiveness. In common with the wider literature critical of homeopathy, the STC report seems to endorse many of the strong claims that are made about its implausibility. In contrast with the critical literature, however, the STC report explicitly does not place any weight on implausibility in its evaluation. I use the contrasting positions of the STC and the wider critical literature to examine the 'implausibility arguments' against homeopathy and the place of such arguments within evidence-based medicine (EBM). I argue that the STC report undervalues its strong claims about the mechanistic plausibility of homeopathy because it relies on a misunderstanding about the role of mechanistic evidence within EBM. This is not a conclusion for a revision of the role mechanistic evidence plays within EBM, however. It is a conclusion about the inconsistency of the STC report's position towards implausibility arguments, given the evidential claims they endorse and the atypical situation that homeopathy presents. It provides a further example of the general point that mechanistic reasoning should not be seen as providing categorically lower quality evidence.

AYURVEDA

Asadi Samani M, Bagheri N, Rafieian Kopaei M et al. Inhibition of th1 and th17 cells by medicinal plants and their derivatives: A systematic review. *Phytother Res. 2017* 31(8):1128-39p.

Abstract:

Searching for new natural drugs that are capable of targeting Th1 and Th17 may lead to development of more effective treatments for inflammatory and autoimmune diseases. Most of the natural drugs can be derived from plants that are used in traditional medicine and folk medicine. The aim of this systematic review is to identify and introduce plants or plant derivatives that are effective on inflammatory diseases by inhibiting Th1 and Th17 responses. To achieve this purpose, the search terms herb, herbal medicine, herbal drug, medicinal plant, phytochemical, traditional Chinese medicine, Ayurvedic medicine, natural compound, inflammation, inflammatory diseases, Th1, Th17, T helper 1 or T helper 17 were used separately in Title/Keywords/Abstract in Web of Science and PubMed databases. In articles investigating the effect of the medicinal plants and their derivatives in inhibiting Th1 and Th17 cells, the effects of eight extracts of the medicinal plants, 21 plant-based compounds and some of their derivatives, and eight drugs derived from the medicinal plants' compounds in inhibiting Th1 and Th17 cells were reviewed. The results showed that medicinal plants and their derivates are able to suppress Th17 and Th1 T cell functions as well as cytokine secretion and differentiation. The results can be used to produce herbal drugs that suppress Th, especially Th17, responses. Copyright © 2017 John Wiley & Sons, Ltd.

Batarseh YS, Bharate SS, Kumar V et al. Crocus sativus extract tightens the blood-brain barrier, reduces amyloid β load and related toxicity in 5xfad mice. *ACS Chem Neurosci. 2017* ; 8(8): 1756-66p.

Abstract:

Crocus sativus, commonly known as saffron or Kesar, is used in Ayurveda and other folk medicines for various purposes as an aphrodisiac, antispasmodic, and expectorant. Previous evidence suggested that Crocus sativus is linked to improving cognitive function in Alzheimer's disease (AD) patients. The aim of this study was to in vitro and in vivo investigate the mechanism(s) by which Crocus sativus exerts its positive effect against AD. The effect of Crocus sativus extract on Aβ load and related toxicity was evaluated. In vitro results showed that Crocus sativus extract increases the tightness of a cell-based blood-brain barrier (BBB) model and enhances transport of Aβ. Further in vivo studies confirmed the effect of Crocus sativus extract (50 mg/kg/day, added to mice diet) on the BBB tightness and function that was associated with reduced Aβ load and related pathological changes in 5XFAD mice used as an AD model. Reduced Aβ load could be explained, at least in part, by Crocus sativus extract effect to enhance Aβ clearance pathways including BBB clearance, enzymatic degradation and ApoE clearance pathway. Furthermore, Crocus sativus extract upregulated synaptic proteins and reduced neuroinflammation associated with Aβ pathology in the brains of 5XFAD mice. Crocin, a major active constituent of Crocus sativus and known for its antioxidant and anti-inflammatory effect, was also tested separately in vivo in 5XFAD mice. Crocin (10 mg/kg/day) was able to reduce Aβ load but to a lesser extent when compared to Crocus sativus extract. Collectively, findings from this study support the positive effect of Crocus sativus against AD by reducing Aβ pathological manifestations.

E MP, Mopuri R, Pulaganti M et al. Molecular assessment of protective effect of Vitex negundo in ISO induced myocardial infarction in rats. *Biomed Pharmacother. 2017;* 92:249-53p.

Abstract:

Myocardial infarction (MI) is the one of the major causes of death worldwide, however the molecular mechanisms hidden under this disease conditions remain unknown. This demands serious attention to unravel the molecular mechanisms to identify the therapeutic strategies either to prevent or to control MI. Ayurveda is becoming one of the best alternatives for the modern medicines. On the other hand, Vitex negundo is one of the medicinally important plants used for various diseases and to date, its cardioprotective role is not fully elucidated. In the present study, we made an attempt to understand the cardiac signaling cascade of Akt1 and NF-κB in isoproterenol (ISO)-induced MI, and targeting these signaling molecules by using V. negundo leaf ethanolic extract (VNE). Our findings demonstrate that VNE significantly protects the ISO-induced MI by regulating NF-κB and Akt1experssion in rats.

Leung HW, Foo G, Banumurthy G et al. Effect of Bacopa monnieri on gene expression levels in SH-SY5Y human neuroblastoma cells. *PLoS One. 2017*; 12(8): e0182984.

Abstract:

Bacopa monnieri is a plant used as a nootropic in Ayurveda, a 5000-year-old system of traditional Indian medicine. Although both animal and clinical studies supported its role as a memory enhancer, the molecular and cellular mechanism underlying Bacopa's nootropic action are not understood. In this study, we used deep sequencing (RNA-Seq) to identify the transcriptome changes upon Bacopa treatment on SH-SY5Y human neuroblastoma cells. We identified several genes whose expression levels were regulated by Bacopa. Biostatistical analysis of the RNA-Seq data identified biological pathways and molecular functions that were regulated by Bacopa, including regulation of mRNA translation and transmembrane transport, responses to oxidative stress and protein misfolding. Pathway analysis using the Ingenuity platform suggested that Bacopa may protect against brain damage and improve brain development. These newly identified molecular and cellular determinants may contribute to the nootropic action of Bacopa and open up a new direction of investigation into its mechanism of action.

Leoni A, Budriesi R, Poli F et al. Ayurvedic preparation of Zingiber officinale Roscoe: Effects on cardiac and on smooth muscle parameters. *Nat Prod Res. 2017*: 1-8p. doi: 10.1080/14786419.2017.1367779.

Abstract:

The rhizome of the Zingiber officinale Roscoe, a biennial herb growing in South Asia, is commonly known as ginger. Ginger is used in clinical disorders, such as constipation, dyspepsia, diarrhoea, nausea and vomiting and its use is also recommended by the traditional medicine for cardiopathy, high blood pressure, palpitations and as a vasodilator to improve the circulation. The decoction of ginger rhizome is widely used in Ayurvedic medicine. In this papery by high-performance liquid chromatography, we have seen that its main phytomarkers were 6-gingerol, 8-gingerol and 6-shogaol and we report the effects of the decoction of ginger rhizome on cardiovascular parameters and on vascular and intestinal smooth muscle. In our experimental models, the decoction of ginger shows weak negative inotropic and chronotropic intrinsic activities but a significant intrinsic activity on smooth muscle with a potency on ileum is greater

than on aorta: EC_{50} = 0.66 mg/mL versus EC_{50} = 1.45 mg/mL.

Rastogi S. Urticarial rashes following guggulu intake: A case report. *J Ayurveda Integr Med. 2017*; pii: S0975-9476(16)30499-5.

Abstract:

Ayurvedic drugs are anecdotally considered safe and are sparingly reported for adversity upon their usage. Reporting adversity however helps understanding the drug pharmacodynamics in a given case and prompts for its safe future application. The patient here has reported urticarial rashes upon use of an Ayurvedic guggulu preparation. The observations were repeated upon the repeated use of the drug. These symptoms were compelling enough to look for a rescue medicine and to withdraw the primary medicine. Guggulu is known for its gastrointestinal and hepatic adversities in some cases. Its skin adversities are however lesser known. This case presents an opportunity to consider urticarial rashes also as possible adversity to guggulu in some cases.

Sahay P, Saluja G, Maharana PK et al. Topical ayurvedic ointment-induced chemical injury presenting as bilateral acute keratitis. *BMJ Case Rep. 2017* ; pii: bcr-2017-220739.

Abstract:

A 40-years-old female patient was referred to the cornea clinic as a probable case of bilateral keratitis. The patient had a history of headache followed by acute onset of redness, pain and discharge from both eyes for 15 days. The patient was diagnosed as bilateral keratitis by the first contact physician and was started on topical antibiotics, cycloplegics and lubricating eye-drops. At presentation, both eyes had visual acuity of perception of light, conjunctival congestion, limbal blanching, diffuse corneal oedema and epithelial defect. A detailed history revealed application of Vicks VapoRub [topical ayurvedic analgesic which contains (per 100 g of product) menthol (2.82 g), camphor (5.25 g) and eucalyptol (1.49 mL) and excipients include thymol (0.1 g), turpentine oil (5.57 mL), nutmeg oil (0.54 mL), cedar wood oil and petrolatum)] on the forehead and eyelids for headache several times over 2-3 days before the onset. The patient further confirmed the accidental application of the ointment in the eyes. A provisional diagnosis of acute chemical injury with Vicks VapoRub was made and treatment with topical antibiotic, cycloplegic, steroid, lubricant and vitamin C was started. On follow-up, both eyes showed gradual resolution of corneal oedema and epithelial defect. Visual acuity improved in the left eye to 6/60 with no change in right eye due to corneal haze.

Salunke M, Deshpande M, Bhalerao S. Experiential documentation of Trimad for its anti-obesity potential: A survey of Ayurvedic physicians from Pune city. *J Ayurveda Integr Med. 2017*; pii: S0975-9476(16)30494-6.

Abstract:

Background: Trimad is an Ayurvedic polyherbal formulation consisting of tubers of Mustaka (Cyperus rotundus), fruits of Vidanga (Embelia ribes) and roots of Chitraka (Plumbago zeylanica). It is recommended in Ayurveda for the management of obesity. However, there is no documented evidence about its safety and efficacy. Hence, as a first step, we carried out a survey to find out its usage by Ayurvedic physicians and their personal clinical experiences while using the formulation.

Methodology: A questionnaire was designed which included questions regarding the usage, dosage, formulation, safety and tolerability of Trimad. After obtaining Ethics

Committee permission, the questionnaire was administered to 86 physicians. Out of 86, the data obtained from 70 physicians who filled the complete information, was analyzed. The data are presented as percentages.

Results: Sixty seven percentage physicians were found to use Trimad for management of obesity, of which only 6% physicians reported to use it. The commonly used form of Trimad was churna administered along with luke warm water as an adjuvant. The criteria for selection of drug informed by the physicians were Ayurvedic signs & symptoms followed by conventional anthropometry. The average efficacy rating for Trimad on scale of 1-10 was found to be 5.

Conclusion: The survey revealed that Trimad is being used by large number of Ayurvedic physicians for the management of obesity.

Shruthi RR, Venkatesh YP, Muralikrishna G. Structural and functional characterization of a novel immunomodulatory glycoprotein isolated from ajowan (Trachyspermum ammi L.). *Glycoconj J. 2017*; 34(4): 499-514p.

Abstract:

Ajowan (Trachyspermum ammi L.) spice has been used in food preparations and also as a traditional medicine in Ayurveda. Although a number of pharmacological activities have been attributed to ajowan, its role in immunomodulation is not known. The main objective of the present study is to examine the macromolecular immunomodulatory components. Macrophage activation was studied by nitric oxide (NO) release, phagocytosis and secretion of pro-inflammatory cytokines as the markers. Ethanol precipitate (fractional) of ajowan aqueous extract was subjected to conventional chromatography (Q Sepharose followed by Bio-Gel P-100). One of the proteins (30.7 kDa; ajowan glycoprotein or Agp) showed effective mitogenic activity towards splenocytes. Agp is a O-linked glycoprotein with the glycans contributing to one-third of the molecular mass. It has a high content of glutamic acid, serine, aspartic acid and proline whereas galactose (45.7%), arabinose (34.5%), glucose (7%), mannose (5%) and xylose (4%) are the constituent sugars. Secondary structure analysis indicated that Agp contains 79% α-helices and 21% random coil. Internal sequencing of the tryptic peptides did not show homology with the existing proteins in the database (BLAST). Agp at 1 μg/mL induced proliferation of B-cell enriched murine splenocytes and activated macrophages in releasing NO and promoted phagocytosis ($p < 0.01$). RAW 264.7 cells produced pro-inflammatory cytokines (IL-12, TNF-α and IFN-γ) at 1 μg/mL Agp ($p < 0.01$). Deproteinized Agp (dpAgp) failed to elicit activation of murine immune cells, whereas deglycosylated Agp (20 kDa; dgAgp) showed compromised efficiency. This is the first report of an immunomodulatory protein from ajowan.

Singh PK, Rawat P. Evolving herbal formulations in management of dengue fever. J *Ayurveda Integr Med. 2017*; pii: S0975-9476(17)30223-1.

Abstract:

Dengue is endemic in more than 100 countries and it is estimated that annually above 390 million infections occur globally. During the period between 1996-2015, a massive increase of more than 500 per cent has been recorded in number of dengue cases reported in India. Till date, there are no specific globally accepted treatments for dengue fever in any system of medicine. Dengue does not cause very high mortality if properly handled and is currently being managed by clinicians through various adjuvant and alternative therapeutic options. Various plant based preparations have been used in different parts of India for combating dengue and are simultaneously also being scientifically validated by researchers. However, number of such scientific

validation studies on phytomedicines are very less in India. Out of twenty-two plants reported against dengue, only four have been studied scientifically. Azadirachta indica, Carica papaya, Hippophae rhamnoides and Cissampelos pareira extracts were found effective and demonstrated improvement in clinical symptoms and direct inhibitory effect on dengue virus. C.papaya clinical trial showed increase in platelet count and faster recovery. These plants may be explored further as probable candidates for drug discovery against dengue. There is a need to search more such herbal formulations, which are being practiced at local level, document properly and validate them scientifically to confirm efficacy, mechanistic action and safety, before use. The herbal formulations being used by communities are the low hanging fruits which may provide alternative or adjuvant therapy if proper validation, value addition and product development steps are followed. This paper aims to review the recent status of dengue cases, deaths and evolving curative herbal solutions adapted and reported from India to combat the disease.

UNANI MEDICINE

Ramakrishnan P, Baccari A, Ramachandran U, et al. Teachers' and parents' perspectives on a curricular subject of "religion and spirituality" for Indian schools: A pilot study toward school mental health program. *J Relig Health. 2017*; doi: 10.1007/s10943-017-0474-1

Abstract:

Religious-spiritual (R/S) education helps medical students cope with caregiving stress and gain skills in interpersonal empathy needed for clinical care. Such R/S education has been introduced into K-12 and college curricula in some developed nations and has been found to positively impact student's mental health. Such a move has not yet been seen in the Indian education system. This paper aimed to examine perspectives of teachers and parents in India on appropriateness, benefits, and challenges of including R/S education into the school curriculum and also to gather their impressions on how a R/S curriculum might promote students' health. A cross-sectional study of religiously stratified sample of teachers and parents was initiated in three preselected schools in India and the required sample size (N = 300) was reached through snowballing technique. A semi-structured questionnaire, with questions crafted from "Religion and Spirituality in Medicine, Physicians Perspective" (RSMPP) and "American Academy of Religion's (AAR) Guidelines for Religious Literacy," was used to determine participants' perspectives. Findings revealed that teachers' and parents' "comfort in integrating R/S into school curriculum" was associated with their gender (OR 1.68), education status (OR 1.05), and intrinsic religiosity (OR 1.05). Intrinsic religiosity was significantly (p = 0.025) high among parents while "intrinsic spirituality" was high (p = 0.020) among teachers. How participants' R/S characteristics influence their support of R/S education in school is discussed. In conclusion, participants believe R/S education will fosters students' emotional health and interpersonal skills needed for social leadership. A curriculum that incorporates R/S education, which is based on AAR guidelines and clinically validated interpersonal spiritual care tools would be acceptable to both teachers and parents.

YOGA

Babbar S, Porter BW, Williams KB. Impact of prenatal yoga on exercise attitudes and behavior: Teachable moments from a randomized controlled trial. *Int J Yoga Therap. 2017;* Aug 2. doi: 10.17761/IJYT2017_Research_Babbar_Epub.

Abstract:

Objective: Pregnancy serves as an opportune time for "teachable moments" to elicit positive behavior change. We evaluated change in exercise perception, behavior and gestational weight gain in participants engaged in a one-hour educational experience.

Methods: Women between 28 0/7 to 36 6/7 weeks with no prior yoga experience carrying a non-anomalous singleton fetus participated in a randomized controlled trial on prenatal yoga. The yoga group engaged in a one-hour yoga class; the attention control educational group, in a one-hour presentation on exercise, nutrition and obesity in pregnancy. Maternal perception of yoga, exercise effects and current health status was conducted before and after the intervention. Gestational weight gain (GWG) and body mass index (BMI) were assessed. A postpartum survey was performed to determine self-reported behavioral changes during and after pregnancy.

Results: Over 6 months, 52 women were randomized and 46 (88%) completed the study. Women reported a more positive attitude towards exercise and yoga after the yoga intervention. Total GWG was similar (yoga 32.9 versus education 32.8 pounds, p = 0.98). Stratified by pre-pregnancy BMI, 13% gained within and 61% gained above the Institute of Medicine guidelines in each group. Of 29 inactive women prior to the intervention, 60% of the yoga group and 75% of the education group began prenatal exercises after the intervention and 50% of each group continued to exercise after delivery. There were no significant differences between groups.

Conclusion: A one-time, one-hour intervention teaching a new exercise or educating women during pregnancy can positively impact pregnancy behaviors and perception with the potential to improve maternal and neonatal outcomes.

Beck AR, Verticchio H, Seeman S et al. Mindfulness practice for communication sciences and disorders undergraduate and speech-language pathology graduate students: Effects on stress, self-compassion, and perfectionism. *Am J Speech Lang Pathol. 2017;* 1-15p.

Abstract:

Purpose: The purpose of the present study was to explore the effects of a mindfulness practice on participants' levels of self-compassion, perfectionism, attention, and perceived and biological stress.

Method: This was a between-groups design. Experimental participants engaged in a short mindfulness practice weekly for one academic semester; control participants did not. All participants completed three self-report scales measuring perceived stress, self-compassion, and perfectionism before and after mindfulness sessions. In addition, electrophysiological measures were taken before and after to determine changes in biological markers of stress and attention. Experimental participants also kept reflective journals that were analyzed qualitatively.

Results: Compared with control participants, by the end of the semester, experimental participants' perceived stress levels and potentially negative aspects of perfectionism decreased and biological markers of stress and self-compassion improved.

Experimental participants' reflective writings indicated they perceived the sessions to be beneficial. Although the results are promising, no significant effect was found for attention.

Conclusions: Engaging in a 20-min mindfulness practice using simple yoga posture and breath work across an academic semester appears to be effective in reducing students' perceived and biological stress levels and maladaptive aspects of perfectionism and in increasing their self-compassion. These are all factors that can improve students' overall well-being.

Ben Josef AM, Chen J, Wileyto P, Doucette A et al. Effect of eischens yoga during radiation therapy on prostate cancer patient symptoms and quality of life: A randomized phase ii trial. *Int J Radiat Oncol Biol Phys. 2017*; 98(5):1036-44p.

Abstract:

Purpose: A randomized phase II study was performed to measure the potential therapeutic effects of yoga on fatigue, erectile dysfunction, urinary incontinence, and overall quality of life (QOL) in prostate cancer (PCa) patients undergoing external beam radiation therapy (RT).

Methods and Materials: The participants were randomized to yoga and no-yoga cohorts (1:1). Twice-weekly yoga interventions were offered throughout the 6- to 9-week courses of RT. Comparisons of standardized assessments were performed between the 2 cohorts for the primary endpoint of fatigue and the secondary endpoints of erectile dysfunction, urinary incontinence, and QOL before, during, and after RT.

Results: From October 2014 to January 2016, 68 eligible PCa patients underwent informed consent and agreed to participate in the study. Of the 68 patients, 18 withdrew early, mostly because of treatment schedule-related time constraints, resulting in 22 and 28 patients in the yoga and no-yoga groups, respectively. Throughout treatment, those in the yoga arm reported less fatigue than those in the control arm, with global fatigue, effect of fatigue, and severity of fatigue subscales showing statistically significant interactions (P<.0001). The sexual health scores (International Index of Erectile Function Questionnaire) also displayed a statistically significant interaction (P=.0333). The International Prostate Symptom Score revealed a statistically significant effect of time (P<.0001) but no significant effect of treatment (P=.1022). The QOL measures had mixed results, with yoga having a significant time by treatment effect on the emotional, physical, and social scores but not on functional scores.

Conclusions: A structured yoga intervention of twice-weekly classes during a course of RT was associated with a significant reduction in pre-existing and RT-related fatigue and urinary and sexual dysfunction in PCa patients.

Bisht S, Faiq M, Tolahunase M et al. Oxidative stress and male infertility. *Nat Rev Urol. 2017*; 14(8): 470-85p.

Abstract:

DNA damage, largely owing to oxidative stress, is a leading cause of defective sperm function. High levels of oxidative stress result in damage to sperm DNA, RNA transcripts, and telomeres and, therefore might provide a common underlying aetiology of male infertility and recurrent pregnancy loss, in addition to congenital malformations, complex neuropsychiatric disorders, and childhood cancers in children fathered by men with defective sperm cells. Spermatozoa are highly vulnerable to

oxidative stress owing to limited levels of antioxidant defence and a single, limited DNA-damage detection and repair mechanism. Oxidative stress is predominantly caused by a host of lifestyle-related factors, the majority of which are modifiable. Antioxidant regimens and lifestyle modifications could both be plausible therapeutic approaches that enable the burden of oxidative-stress-induced male factor infertility to be overcome. Lifestyle interventions including yoga and meditation can substantially improve the integrity of sperm DNA by reducing levels of oxidative DNA damage, regulating oxidative stress and by increasing the expression of genes responsible for DNA repair, cell-cycle control and anti-inflammatory effects. Oxidative stress is caused by various modifiable factors, and the use of simple interventions can decrease levels of oxidative stress, and therefore reduce the incidence of both infertility and complex diseases in the resultant offspring.

Brandel M, Vescovelli F, Ruini C. Beyond Ryff's scale: Comprehensive measures of eudaimonic well-being in clinical populations. A systematic review. *Clin Psychol Psychother. 2017;* Aug 2. doi: 10.1002/cpp.2104.

Abstract:

Eudaimonic well-being that protects mental and physical health has received increasing attention. This investigation aimed to review which comprehensive instruments for measuring eudaimonic well-being were applied with clinical populations (reporting mental or physical illnesses), beyond Ryff's Psychological Well-Being Scale. Articles citing at least 1 of the measures of eudaimonic well-being identified by previous theoretical work were extracted from medical and psychological electronic databases and screened. Only investigations involving clinical populations were included and reviewed. An initial screening identified 5,065 articles using eudaimonic well-being measures, out of which only 28 articles encompassed clinical populations and could be included. Sixteen involved patients with mental disorders and 12 populations with medical conditions. In these articles, only 4 measures of eudaimonic well-being were used (Mental Health Continuum, Flourishing Scale, General Causality Orientations Scale, and Orientations to Happiness Subscales), out of the 12 currently available in literature. The Mental Health Continuum was the most used instrument, particularly in adults with depression, whose levels of eudaimonic well-being are impaired, but may be improved by specific interventions. Autonomy appeared to influence patients' motivation to treatment, both in mental and physical disorders. The need for a larger consensus regarding specific measures of eudaimonic well-being for clinical populations emerged. The importance of including assessment of positive functioning as an indicator of recovery in clinical domains is discussed. Key Pratictioner Message Eudaimonic well-being protects health, but few studies involved clinical samples, and no consensus on its definitions emerged. Only 4 measures of eudaimonic well-being were used in clinical populations (the Mental Health Continuum, The Flourishing Scale, the General Causality Orientations Scale, and the Orientation to Happiness Subscales), out of the 12 analyzed in the present review. Eudaimonic well-being is impaired in clinical populations and can be improved by acceptance and commitment therapy or other positive interventions, including yoga and mind/body treatments. Autonomy may play a crucial role in influencing patients' motivation to treatment. The restoration of eudaimonic well-being should be considered as a clinical indicator of recovery.

Brunner D, Abramovitch A, Etherton J. Yoga program for cognitive enhancement. *PLoS One. 2017*; 12(8):e0182366.

Abstract:

Background: Recent studies suggest that yoga practice may improve cognitive functioning. although preliminary data indicate that yoga improves working memory (wm), high-resolution information about the type of wm subconstructs, namely maintenance and manipulation, is not available. furthermore, the association between cognitive enhancement and improved mindfulness as a result of yoga practice requires empirical examination. the aim of the present study is to assess the impact of a brief yoga program on wm maintenance, wm manipulation and attentive mindfulness.

Methods: Measures of WM (Digit Span Forward, Backward, and Sequencing, and Letter-Number Sequencing) were administered prior to and following 6 sessions of yoga (N = 43). Additionally, the Mindfulness Attention Awareness Scale was administered to examine the potential impact of yoga practice on mindfulness, as well as the relationships among changes in WM and mindfulness.

Results: Analyses revealed significant improvement from pre- to post- training assessment on both maintenance WM (Digit Span Forward) and manipulation WM (Digit Span Backward and Letter-Number Sequencing). No change was found on Digit Span Sequencing. Improvement was also found on mindfulness scores. However, no correlation was observed between mindfulness and WM measures.

Conclusions: A 6-session yoga program was associated with improvement on manipulation and maintenance WM measures as well as enhanced mindfulness scores. Additional research is needed to understand the extent of yoga-related cognitive enhancement and mechanisms by which yoga may enhance cognition, ideally by utilizing randomized controlled trials and more comprehensive neuropsychological batteries.

Carlson LE, Zelinski E, Toivonen K et al. Mind-body therapies in cancer: What is the latest evidence? *Curr Oncol Rep. 2017*; 19(10):67p.

Abstract:

Purpose of review: Many people living with cancer use complementary therapies, and some of the most popular are mind-body therapies (MBTs), including relaxation and imagery, hypnosis, yoga, meditation, tai chi and qigong, and art therapies. The efficacy of these modalities was reviewed by assessing recent findings in the context of cancer care.

Recent findings: These therapies show efficacy in treating common cancer-related side effects, including nausea and vomiting, pain, fatigue, anxiety, depressive symptoms and improving overall quality of life. Some also have effects on biomarkers such as immune function and stress hormones. Overall studies lack large sample sizes and active comparison groups. Common issues around clearly defining treatments including standardizing treatment components, dose, intensity, duration and training of providers make generalization across studies difficult. MBTs in cancer care show great promise and evidence of efficacy for treating many common symptoms. Future studies should investigate more diverse cancer populations using standardized treatment protocols and directly compare various MBTs to one another.

Carlson LE, Zelinski EL, Speca M et al. Protocol for the MATCH study (Mindfulness and Tai Chi for cancer health): A preference-based multi-site randomized comparative effectiveness trial (CET) of Mindfulness-Based Cancer Recovery (MBCR) vs. Tai Chi/Qigong (TCQ) for cancer survivors. *Contemp Clin Trials. 2017*; 59:64-76p.

Abstract:

Purpose: A growing number of cancer survivors suffer high levels of distress, depression and stress, as well as sleep disturbance, pain and fatigue. Two different mind-body interventions helpful for treating these problems are Mindfulness-Based Cancer Recovery (MBCR) and Tai Chi/Qigong (TCQ). However, while both interventions show efficacy compared to usual care, they have never been evaluated in the same study or directly compared. This study will be the first to incorporate innovative design features including patient choice while evaluating two interventions to treat distressed cancer survivors. It will also allow for secondary analyses of which program best targets specific symptoms in particular groups of survivors, based on preferences and baseline characteristics.

Methods and Significance: The design is a preference-based multi-site randomized comparative effectiveness trial. Participants (N=600) with a preference for either MBCR or TCQ will receive their preferred intervention; while those without a preference will be randomized into either intervention. Further, within the preference and non-preference groups, participants will be randomized into immediate intervention or wait-list control. Total mood disturbance on the Profile of mood states (POMS) post-intervention is the primary outcome. Other measures taken pre- and post-intervention and at 6-month follow-up include quality of life, psychological functioning, cancer-related symptoms and physical functioning. Exploratory analyses investigate biomarkers (cortisol, cytokines, blood pressure/Heart Rate Variability, telomere length, gene expression), which may uncover potentially important effects on key biological regulatory and antineoplastic functions. Health economic measures will determine potential savings to the health system.

Cohen SP, Hooten WM. Advances in the diagnosis and management of neck pain. *BMJ. 2017*; 358: j3221p.

Abstract:

Neck pain imposes a considerable personal and socioeconomic burden-it is one of the top five chronic pain conditions in terms of prevalence and years lost to disability-yet it receives a fraction of the research funding given to low back pain. Although most acute episodes resolve spontaneously, more than a third of affected people still have low grade symptoms or recurrences more than one year later, with genetics and psychosocial factors being risk factors for persistence. Nearly half of people with chronic neck pain have mixed neuropathic-nociceptive symptoms or predominantly neuropathic symptoms. Few clinical trials are dedicated solely to neck pain. Muscle relaxants and non-steroidal anti-inflammatory drugs are effective for acute neck pain, and clinical practice is mostly guided by the results of studies performed for other chronic pain conditions. Among complementary and alternative treatments, the strongest evidence is for exercise, with weaker evidence supporting massage, acupuncture, yoga, and spinal manipulation in different contexts. For cervical radiculopathy and facet arthropathy, weak evidence supports epidural steroid injections and radiofrequency denervation, respectively. Surgery is more effective than conservative treatment in the short term but not in the long term for most of these patients, and clinical observation is a reasonable strategy before surgery.

Cook Cottone C, Lemish E, Guyker W. Interpretive phenomenological analysis of a lawsuit contending that school-based yoga is religion: A study of school personnel. *Int J Yoga Therap. 2017;* doi:

10.17761/IJYT2017_Research_Cook_Cottone.

Abstract:

This study focused on the perspectives of school personnel affiliated with the Encinitas Union School District in California following a lawsuit arguing that their yoga-based program included religion and therefore was unsuitable for implementation in public schools and was unconstitutional. Participants (N = 32) were interviewed using a semistructured interview, and data were analyzed according to Interpretative Phenomenological Analysis. Five super-ordinate themes (including sub-themes) were identified in an iterative process, including: participants' perspectives on the roots of yoga and the type of yoga taught in their district; the process of introducing a yoga-in-the-schools program in light of this contention (including challenges and obstacles, and how these were met); perspectives on the lawsuit and how the process unfolded; effects of the lawsuit on school climate and beyond; and perspectives on yoga as, and as not, religious. The study attempts to shed light on the impact of an ongoing lawsuit on a school district at the time of implementation of a program for students' well being.

Cox AE, Ullrich French S, Howe HS et al. Pilot yoga physical education curriculum to promote positive body image. *Body Image. 2017*; 23:1-8p.

Abstract:

We examined the effects of a pilot yoga-based physical education (PE) curriculum by testing for change in trait body surveillance, physical self-worth, and body appreciation. Further, we examined the relationships among change in body image variables and the role of state mindfulness in predicting state body surveillance during classes. Adolescents participated in 12 weeks of yoga-based (n=20; M_{age}=16.45, 90% female) or traditional (n=23;M_{age}=14.52, 57% female) PE. Results showed significant (p=.004), moderate decreases in trait body surveillance and minimal nonsignificant (p=.11) increases in physical self-worth. Change in trait body surveillance was inversely related to change in physical self-worth and body appreciation in yoga participants. Multi-level modeling analyses revealed that more mindful students also surveyed their body less during class. Intentionally structured yoga participation may support positive body image among adolescents.

El Khayat AR. Valsalva haemorrhagic retinopathy in pregnancy after yoga. *BMJ Case Rep. 2017*; pii: bcr-2017-221099

Abstract:

A 35-year-old pregnant Caucasian woman at 27 weeks gestation presented with sudden onset painless loss of vision and a large floater in her left eye while doing yoga. She was found to have a dense vitreous haemorrhage with a small preretinal haemorrhage. Ultrasound imaging confirmed the haemorrhage and showed no other retinal damage. She was diagnosed with valsalva haemorrhagic retinopathy and was treated conservatively. After 5 months of follow-up, this woman had had a normal delivery and her haemorrhages and vision loss had resolved.

Fisher C, Hickman L, Adams J et al. Cyclic perimenstrual pain and discomfort and australian women's associated use of complementary and alternative medicine: A longitudinal study. *J Womens Health (Larchmt). 2017*; doi: 10.1089/jwh.2016.6253.

Abstract:

Objective: To examine the longitudinal change in Australian women's prevalence of cyclic perimenstrual pain and discomfort and the association between their symptoms and use of complementary and alternative medicine (CAM).

Method: Data on endometriosis, premenstrual syndrome (PMS), irregular periods, heavy periods, and severe period pain were collected over a 7-year period from the Australian Longitudinal Study on Women's Health, for women aged 28 to 33 years in 2006, and at 3-year follow-ups. Changes in symptoms and patterns of CAM practitioner and therapy/product use associated with these symptoms were analyzed using longitudinal regression modeling.

Results: Over the 7-year period, prevalence rates of PMS and heavy periods increased, while prevalence rates of endometriosis, irregular periods, and severe period pain remained stable. The most common use of CAM longitudinally associated with the perimenstrual symptoms was use of vitamins/minerals, yoga/meditation, massage therapy, herbal medicine, and aromatherapy. Excluding consultation with a naturopath/herbalist, over the 7-year survey women's use of all other CAM practitioners increased as did their use of vitamin/minerals, yoga/meditation, and Chinese medicines, while aromatherapy use declined.

Conclusion: Only the prevalence of PMS and heavy periods increased with aging in this sample of women. While overall use of CAM practitioner and self-prescribed products/therapies increased over time, CAM was chosen by women mainly to treat endometriosis and PMS. The extent to which this use reflects treatment efficacy is uncertain.

Hartnoll SH, Punt TD. Yoga practice is associated with superior motor imagery performance. *Int J Yoga Therap. 2017;* Aug 2. doi: 10.17761/IJYT2017_Research_Hartnoll_Epub.

Abstract:

Yoga is an activity that aims to integrate physical, mental and spiritual elements and is an increasingly popular approach to enhancing physical fitness. The integration of imagery within yoga practice is considered an important component and may be critical in contributing to the benefits of yoga that have been reported. In this study, we tested whether individuals who practice yoga demonstrate superior performance on an objective measure of implicit motor imagery. Thirty-six participants (18 yoga, 18 nonyoga) matched for age, sex and handedness, undertook the hand laterality recognition task; an objective measure of implicit motor imagery performance. Accuracy and response times were gathered and analysed to determine any group differences as well as any differences relating to the typical hallmarks of imagery (i.e. dominance and awkwardness effects) on the task. Response Times (RTs) in the yoga group were significantly faster than controls ($p < 0.05$) and there was also a trend towards greater accuracy for the Yoga group ($p = 0.073$). Dominance effects (faster responses to images corresponding with the dominant limb) and Awkwardness effects (faster responses to images corresponding with natural compared with awkward postures) were evident across groups, supporting the participants' use of motor imagery in undertaking the task. Additionally, a Group × Awkwardness interaction ($p < 0.05$) revealed that the enhanced imagery performance for the yoga group was most pronounced for awkward postures. This is the first study to show that yoga practice is associated with superior motor imagery performance; an association that may be important in explaining the established rehabilitative value

of yoga for chronic pain**.**

Hijikata A, Tsuji T, Shionyu M et al. Decoding disease-causing mechanisms of missense mutations from supramolecular structures. *Sci Rep. 2017*; 7(1):8541p.

Abstract:

The inheritance modes of pathogenic missense mutations are known to be highly associated with protein structures; recessive mutations are mainly observed in the buried region of protein structures, whereas dominant mutations are significantly enriched in the interfaces of molecular interactions. However, the differences in phenotypic impacts among various dominant mutations observed in individuals are not fully understood. In the present study, the functional effects of pathogenic missense mutations on three-dimensional macromolecular complex structures were explored in terms of dominant mutation types, namely, haploinsufficiency, dominant-negative, or toxic gain-of-function. The major types of dominant mutation were significantly associated with the different types of molecular interactions, such as protein-DNA, homo-oligomerization, or intramolecular domain-domain interactions, affected by mutations. The dominant-negative mutations were biased toward molecular interfaces for cognate protein or DNA. The haploinsufficiency mutations were enriched on the DNA interfaces. The gain-of-function mutations were localized to domain-domain interfaces. Our results demonstrate a novel use of macromolecular complex structures for predicting the disease-causing mechanisms through inheritance modes.

Kimura BK. Yoga therapy in Japan. *Int J Yoga Therap. 2017*; Aug 1. doi: 10.17761/IJYT2017_Perspective_Keishin.

Abstract:

This perspective piece gives an overview of the current situation of yoga therapy in Japan today. Traditional yoga in Japan suffered a serious setback in 1995 with a nerve gas terrorist attack on the Tokyo subway, which was carried out by a cult that recruited members through yoga classes. But with the increase in popularity with modern forms of yoga such as Iyengar yoga, Ashtanga yoga and hot yoga in the West, the general public in Japan today is forgetting its aversion to yoga and considers it to be something that can contribute to good health. In 2012, the Japan Yoga Therapy Society (JYTS) conducted a study on adverse events in yoga classes throughout Japan with the University of Kyushu School of Medicine, with support from the Ministry of Health, Labour and Welfare. This study indicated that more than half of people attending yoga classes have some form of chronic illness, with 42.3% receiving outpatient care. This survey was the beginning of growing interest from both the government and universities in yoga therapy. JYTS is beginning to make inroads into bringing yoga therapy into cancer and palliative care, senior citizen homes, alcohol and drug addiction rehabilitation, cardiovascular rehabilitation, and research on trauma and schizophrenia. While there are still limited opportunities for yoga therapists to work in mainstream healthcare services, there is growing interest among medical professionals in both physical and mental health. JYTS is beginning to make inroads into bringing yoga therapy into cancer and palliative care, senior citizen homes, alcohol and drug addiction rehabilitation, cardiovascular rehabilitation, and research on trauma and schizophrenia. While there are still limited opportunities for yoga therapists to work in mainstream healthcare services, there is growing interest among medical professionals in both physical and mental health. This perspective piece introduces some of the developments in yoga therapy research and practice in

Japan.

Loudon A, Barnett T, Williams AD et al. Guidelines for teaching yoga to women with breast cancer-related lymphoedema: An evidence-based approach. *Int J Yoga Therap. 2017*; Aug 1. doi: 10.17761/IJYT2017_

Abstract:

Breast cancer-related lymphoedema (BCRL) is a chronic condition that requires lifelong management to prevent the condition worsening and to reduce the threat of infection. Women are affected in all domains of their life. As a holistic practice, yoga may be of benefit by reducing both the physical and psychosocial effects of lymphoedema. Women with BCRL are attending yoga classes in increasing numbers, so it is essential that yoga be based on principles that ensure lymphoedema is controlled and not exacerbated. Two Randomised Controlled Trials with a yoga intervention have had positive results after an 8-week intervention (n=28) and 6-months after a 4-week intervention (n=18). The first study had several significant results and women reported increased biopsychosocial improvements. Both studies showed trends to improved lymphoedema status. The yoga interventions compromised breathing, physical postures, meditation and relaxation practices based on Satyananda Yoga®, with modifications to promote lymphatic drainage and following principles of best current care for those with BCRL. Individual needs were considered. The yoga protocol that was used in the 8-week trial is presented. Our aim is to provide principles for yoga teachers/therapists working with this clientele that can be adapted to other yoga styles. Further, these principles may provide a basis for the development of yoga programs for people with secondary lymphoedema in other areas of their body as the population requiring cancer treatment continues to increase. Whilst the style of yoga presented here has had positive outcomes, further application and research is needed to fully demonstrate its effectiveness.

Mason H, Schnackenberg N, Monro R. Yoga and healthcare in the United Kingdom. *Int J Yoga Therap. 2017*; Aug 8. doi: 10.17761/IJYT2017_Perspective_Mason_Epub.

Abstract:

The emergence of yoga therapy in the United Kingdom began about 45 years ago with the emergence of yoga therapy organizations that offered both treatment and training. The integration of yoga into the National Health Service (NHS) is gradually happening Because: (a) yoga research supports its efficacy as a cost-effective, preventive and complementary treatment for a host of non-communicable diseases; and (b) the escalating economic burden of long-term conditions is overwhelming the NHS. The NHS is actively developing 'sustainability and transformation plans' that include yoga. Chief among these is 'social prescribing,' which empowers patients with complex health needs through activities groups. These activities reduce sedentary habits and social isolation, while helping patients to be more self-reliant. The NHS has allocated £450 million in funding to implement a variety of programs for its own staff, in which staff yoga classes were expressly mentioned. The yoga community is mobilizing forces and applying for funding to pilot relevant NHS staff yoga courses that can support the service in achieving its vision. Research shows that integrating yoga therapy for the treatment of low back pain (LBP) into the NHS would result in significant cost savings as compared with usual care. The National Institute for Health and Care Excellence (NICE) Guidelines on LBP and sciatica include yoga as one of the recommended treatments for these conditions. Three groups of yoga teachers, using different yoga practices, have gained traction with the NHS for the application of yoga therapy to

LBP. Many regional hospitals in England have yoga classes. The NHS Choices website, which conveys information to the public regarding treatment options, has a page dedicated to the health benefits of yoga. Several institutions offer comprehensive training programs in yoga therapy and yoga therapy is recognized as an official profession. The Yoga in Healthcare Alliance has been established to help integrate yoga therapy into the NHS. This consists of parliamentarians, leaders in the NHS, yoga researchers, health professionals, and representatives from leading yoga organizations.

McCarthy L, Fuller J, Davidson G et al. Assessment of yoga as an adjuvant treatment for combat-related posttraumatic stress disorder. *Australas Psychiatry. 2017*; 25(4):354-57p.

Abstract:

Objectives: This study assessed yoga as an adjuvant strategy for symptoms of combat-related posttraumatic stress disorder (PTSD).

Methods: Subjects had significant, combat-related PTSD. Control data were collected during an eight-week waiting period. Trauma-sensitive yoga sessions of 90 minutes duration were provided every seven days for eight weeks. Assessments included the PTSD checklist (PCL); the Depression, Anxiety and Stress Scale (DASS); the Pittsburgh Sleep Quality Index (PSQI); the Adult/Adolescent Sensory Profile (AASP); the SF36 Quality of Life instrument; and a brief, structured pre-enrolment assessment of attitudes towards yoga. Biomarkers were also assessed.

Results: Thirty participants were recruited, with 28 completing the protocol (Mage=63.5 years). For most variables, there was no significant change in results after the waiting period. Comparing measurements obtained immediately prior to the commencement of the intervention to those taken after completion of eight yoga sessions, significant changes included an increase in the serum dehydroepiandrosterone concentration, decreased total PCL score (and all PCL sub-scales), decreases in all DASS sub-scale scores and significant improvements in PSQI and SF36 scores. No adverse events were reported.

Conclusions: A range of benefits were observed after yoga, consistent with the theoretical construct for the long history of yoga as a strategy to reduce stress and promote well-being.

Myers K. Yoga as sanctuary: A valuable mind-body intervention for the lesbian community. *Int J Yoga Therap. 2017*; Aug 8. doi: 0.17761/IJYT2017_Research_Myers_Epub.

Abstract:

Poetic autoethnography provides a research methodology to explore yoga as a mind-body intervention that creates sanctuary. Using this qualitative method and retrieving data from my personal journals, daily workout journals, experiences as a lesbian-identified participant in yoga classes, and yoga instructor, I turn the research lens on myself in order to examine my sociological life story. At a critical time in my life when I was struggling with the fragmentation, anxiety, and despair resulting from dealing with homophobia in a heteronormative world, yoga provided sanctuary for me. My yoga practice increased my self-efficacy, providing transferable techniques for finding refuge within myself, irrespective of the adversity I was facing in my life. Places of sanctuary are critical for members of minority groups who often face marginalization

and oppression, which compromise their well-being.

Saguil A. Effects of yoga in patients with asthma. *Am Fam Physician. 2017;* 96(3):159-60p.

Sherman SA, Rogers RJ, Davis KK et al. Energy expenditure in vinyasa yoga versus walking. *J Phys Act Health. 2017*; 14(8):597-605p.

Abstract:

Background: Whether the energy cost of vinyasa yoga meets the criteria for moderate-to-vigorous physical activity has not been established.

Purpose: To compare energy expenditure during acute bouts of vinyasa yoga and 2 walking protocols.

Methods:. Participants (20 males, 18 females) performed 60-minute sessions of vinyasa yoga (YOGA), treadmill walking at a self-selected brisk pace (SELF), and treadmill walking at a pace that matched the heart rate of the YOGA session (HR-Match). Energy expenditure was assessed via indirect calorimetry.

Results: Energy expenditure was significantly lower in YOGA compared with HR-Match (difference = 79.5 ± 44.3 kcal; P < .001) and SELF (difference = 51.7 ± 62.6 kcal; P < .001), but not in SELF compared with HR-Match (difference = 27.8 ± 72.6 kcal; P = .054). A similar pattern was observed for metabolic equivalents (HR-Match = 4.7 ± 0.8, SELF = 4.4 ± 0.7, YOGA = 3.6 ± 0.6; P < .001). Analyses using only the initial 45 minutes from each of the sessions, which excluded the restorative component of YOGA, showed energy expenditure was significantly lower in YOGA compared with HR-Match (difference = 68.0 ± 40.1 kcal; P < .001) but not compared with SELF (difference = 15.1 ± 48.7 kcal; P = .189).

Conclusions: YOGA meets the criteria for moderate-intensity physical activity. Thus, YOGA may be a viable form of physical activity to achieve public health guidelines and to elicit health benefits.

Stillwell SB, Vermeesch AL, Scott JG. Interventions to reduce perceived stress among graduate students: A systematic review with implications for evidence-based practice. *Worldviews Evid Based Nurs. 2017;* doi: 10.1111/wvn.12250.

Abstract:

Background: Stress is a part of daily life for graduate students, including graduate nursing students. Contemporary graduate nursing students are facing unprecedented challenges to meet rigorous academic standards as they prepare for their advanced professional role to meet the demands of the nation's complex and ever-changing healthcare system. Empowering graduate nursing students to ease their perceived stress and minimize undesirable health effects may benefit their capacity to adapt and successfully manage perceived stress in their future healthcare role.

Aims: To conduct a systematic review to evaluate the existing evidence with the aim of identifying evidence-based self-care interventions for coping with perceived stress.

Methods: We conducted a systematic review, searching CINAHL Plus with Full Text, PsycINFO, and MEDLINE. Inclusion criteria included self-care, graduate students, perceived stress as measured by Perceived Stress Scale, quantitative analysis, conducted within the United States, English language, and peer reviewed. Two

authors completed an asynchronous review of the articles, and one expert evidence-based practice mentor and one wellness expert conducted rigorous appraisal of the eight identified studies. Evidence was evaluated and synthesized, and recommendations for practice were determined.

Results: Eight studies meeting the criteria for this systematic review were critically appraised. The interventions varied from a stress management course to mind-body-stress-reduction (MBSR) techniques, such as yoga, breath work, meditation, and mindfulness. All studies measured the outcome of stress with the Perceived Stress Scale. Each study demonstrated a reduction in perceived stress postintervention.

Linking evidence to action: Most effective self-care MBSR interventions include (a) a didactic component, (b) a guided MBSR practice session, and (c) homework. Consideration should be given to a trained or certified MBSR instructor to teach the intervention.

Venkatesh R, Kumar S. Back pain in ophthalmology: National survey of Indian ophthalmologists. *Indian J Ophthalmol. 2017* ; 65(8):678-82p.

Abstract:

Purpose: The aim is to assess the prevalence, severity, and associations of back pain among Indian ophthalmologists.

Methods: A self-reporting questionnaire was sent to ophthalmologists with valid e-mail addresses registered with the All India Ophthalmological Society. The survey was open for responses for 2 months.

Results: A total of 651 (5.96%) responses were obtained; 394 (61%) males and 257 (39%) females. Half (50%) of responses were obtained from doctors belonging to 31-40 years' age group. Two hundred and thirty (35%) of the ophthalmologists had height ranging from 161 to 170 cm and 443 (68%) had weight ranging from 51 to 75 kg. Four hundred and eighty-one (73.8%) of the respondents had <15 years of ophthalmic experience. Cataract (346; 53.1%) and general ophthalmology (342; 52.5%) were commonly practised by the ophthalmologists. Time spent in the outpatient department (OPD) was 39.37 ± 16.32 h/week and in the operating theater 13.64 ± 9.89 h/week, respectively. Self-reported prevalence of back pain was 70.5%. Fully 49% of respondents had low back pain, followed by neck pain (33%) and upper extremity symptoms (16%). Age <50 years (odds ratio [OR] = 2.4485), female gender (OR = 2.0265), long working hours in OPD (OR = 1.6524), and performing retinal lasers and indirect ophthalmoscopy (OR = 3.3251) showed positive association with back pain. The intolerable back pain was noted in <7% of the respondents. Around 398 (61%) respondents felt that their back pain was exacerbated while doing work and 86.6% felt that up to 5 h/week was lost due to persistent backache. Yoga and some form of exercise (74.3%) was practised to alleviate back pain.

Conclusion: Back pain symptoms appear to be common among ophthalmologists. Awkward posture and prolonged working hours are responsible for developing back pain among ophthalmologists. Performing yoga and regular exercises, modifications in instrumentation and creating a larger workforce of eye care practitioners are needed to prevent ophthalmologists from developing back pain.

Wheeler EA, Santoro AN, Bembenek AF. Separating the "Limbs" of yoga: Limited effects on stress and mood. *J Relig Health. 2017;* doi: 10.1007/s10943-017-0482-1.

Abstract:

Though millions of people practice yoga to reduce stress and improve their mood, it is unclear which aspect of yoga is responsible for these effects. To investigate relevant aspects, or "limbs" of yoga, participants who were novices in the practice of yoga engaged in a single yogamanipulation (i.e., poses, breath work, meditation, or listening to a lecture about yoga) for 20 min before experiencing a mild stressor. Participants' heart rate, blood pressure, mood, and anxiety level were assessed, both immediately after the yoga manipulation and after the mild stressor. The 20-min yoga manipulation did not differentially affect any of the measures, including participants' stress response after the mild stressor. Results are discussed regarding the individual components of a yoga practice.