



# Integrative Medicine: A Health Paradigm of the Future

Armando Cáceres\*

Universidad de San Carlos de Guatemala, Universidad Galileo, and Laboratorios de Productos Naturales Farmaya, Guatemala.

## \*Correspondence to

Armando Cáceres  
Email:  
acaceres@farmaya.net

Received 26 SEP. 2019

Accepted 7 Oct. 2019

ePublished 11 Oct. 2019



## Abstract

Integrative medicine is a medical approach for health and healing which integrates mainstream therapies (conventional), with traditional, complementary and alternative medicines (CAM). It is intended to support those therapies with defined procedures with safety and efficacy so it is considered evidenced-based, but with a holistic and preventive approach. Since late 20th century the interaction of therapists and techniques lead to the recognition of this integrative concept. It is classified into five categories or domains: Alternative medical systems (Ayurveda, Chinese, Kempo), natural products or biological therapies (phytotherapy, trophotherapy, aromatherapy, zootherapy), main-body medicine (yoga, meditation, hypnotherapy), body manipulation practices (chiropractic, massage, shiatzu, lymphatic drainage) and movement-energy therapies (qui gong, reiki, tai chi quan). This approach is expanding among leading universities and is being articulated with conventional medicine for improving public and private health systems worldwide, increasing available therapies from cultural, economic and ecological points of view. It is expected that this concept will lead modern health approach for patients satisfaction, improving health care systems in developing countries and providing fair access to health and beauty by everybody.

**Keywords:** Alternative medicine, Complementary medicine, Holistic approach, Traditional medicine, Biological therapies

## Introduction

Integrative medicine is a medical approach for health and healing which integrates conventional mainstream therapies, with traditional, complementary and alternative medicines (CAM). It is intended to support those therapies with defined procedures with safety and efficacy so it is considered evidence-based, but with a holistic and preventive approach. Since late 20<sup>th</sup> century the interaction of therapists and has led to the recognition of this integrative-holistic concept. It is classified into five categories or domains: Alternative medical systems, natural products or biological therapies, main-body medicine, body manipulation practices and movement-energy therapies.

This Keynote address is aimed to define the concept of integrative medicine from a comprehensive point of view and present an overview of the therapies involved in this holistic medical approach. It is not intended to be a systematical review nor a state of the art, but it is an updated review stressing the main concepts of these therapies and the global trend in the clinical management of this health paradigm of the future.

## Conventional, Complementary, Alternative and Integrative Medicine

*Conventional medicine (allopathic, modern, official)* is the medicine practiced by medical associated professions,

including physiotherapists, psychologist, nurses, pharmacists and laboratory personnel. It receives the official support by government and academic authorities and developed in a commercial framework of great industrial consortia and patents, and exerts a hegemonic attention in public health. It is characterized by use of modern diagnostic and treatment technologies, is based on evidence of security, it encourages super specialization of the professionals, support disintegration of the health-disease concept, creating some difficulties and barriers.<sup>1,2</sup>

*Complementary and Alternative Medicines (CAM).* These terms include systems, practices, products and therapist used to treat as an alternative (disjunctive A or B) or as a complement (to hegemonic conventional medicine), generally applied independently and it has been described a high heterogeneity and inconsistent definitions.<sup>3</sup> It requires from both therapist tolerance and acceptance. Conventional in one culture might be alternative in another, and it can be associated with sociodemographic determinants.<sup>4</sup>

*Integrative Medicine.* Concept that combines conventional with traditional and CAM for which security and efficacy are evident; it is expanding worldwide and and deserves by academics and authorities.<sup>5,6</sup> It pretends a holistic view patient-disease-treatment and combines an articulation-action among therapies for an integral benefit of the patient,<sup>6-8</sup> is considered to be the “medicine



of the future”<sup>9</sup> Since 1991 the National Center for Complementary and Alternative Medicine (NCCAM), transformed in 2014 into the National Center for Complementary and Integrative Health (NCCIH), tried to unify all the concepts, and classified Integrative Medicine in five complex categories or domains: Alternative medical systems, biological therapies, energy based therapies, body manipulation, and focus on mind-body.<sup>10</sup>

### Alternative Medical Systems

This domain includes practically all traditional medicines, as well as those therapies with alternative concepts of disease and treatment.

*Ayurveda* (In Sanskrit -science of life) is an ancient healing art which explain the functional aspects of the organism (movement, transformation and growth) which are governed by the three biological humors (*vata* (space/air), *pitta* (fire/water) and *kapha* (water/earth)). It integrates prevention with the healing components, such as herbs, minerals, vegetarian diet, exercise (yoga), massage, attitudes and therapists, and is actively coexisting with modern medicine in India and other countries.<sup>11,12</sup>

*Chinese Traditional Medicine* is based on 5000 of practice according to the popular saying “Excellence is from experience”, integrated with Western medicine since 1950.<sup>13</sup> It believe that health is the balance of *yin-yang* through *qi* flow, disease appear when *qi* flow is dispersed or stagnant or disruption of equilibrium of the “fundamental substances” [*qi* (energy), *xue* (blood and nutrition), *jing* (essence storage and inherited), *shen* (spirit and *jin ye* (fluids))]. Diagnosis integrate the use of tongue, acoustic sound and pulse.<sup>14</sup> It relates the eight causal principles to complex intervention therapies, including acupuncture, moxibustion, herbs, massage, cupping, reflexology, *tai chi quan*, and others.<sup>15</sup>

*Traditional Medicine in Latin America* refers to the medical knowledge of the original settlers of the Americas which astonished the Spanish. In this system the most relevant aspects have been described for Aztec,<sup>16,17</sup> Maya,<sup>18</sup> and Inca groups.<sup>19</sup> Nevertheless, these medicines were pursued by the Spanish conquerors. They have survived in a resilient manner to our days, demonstrating acceptance and use by the present populations even in the case of severe diseases like cancer<sup>20-22</sup> and diabetes.<sup>22,23</sup> The legacy of the ancestral medicine excels the use of local medicinal plants,<sup>24-28</sup> traditional midwives,<sup>29-30</sup> although their legal status in Latin America is uncertain.<sup>31</sup>

*Homeopathy and Homotoxicology*. Initially formulated by Hahnemann 200 year ago based on the principle of similitude, experience in heathy man, minimal dose and unitary remedy, and now it is used worldwide with potential benefits for public health, particularly for least-developed countries.<sup>32-34</sup> Therapy is based on diluted drugs whose action is explained by water memory and high dilutions of crystal theories, now some degree of credibility has being built by clinical evidence.<sup>35,36</sup> In 1952,

Reckeweg proclaims the homotoxicologic principles based on the accumulation of homotoxins in six progressive stages treated with homeopathic drugs, demonstrating positive clinical findings with some failures.<sup>37,38</sup>

*Other traditional medicines*. Several traditional medicines have been developed from different cultural settings, particularly in Asia.<sup>39</sup> Unani or Islamic medicine, originated in the Greek culture, later adapted, documented and disseminated by the Arabs, is now considered traditional to India, Egypt, Syria, Iran and Persia, stressing that balance should be maintained between mind and body using medicinal plants and diet.<sup>40</sup> Siddha born in the south of India includes drugs such as herbs and minerals, therapist are supposed to possess supernatural powers and reach a diagnosis through complex procedures involving tongue, eyes, urine and pulse.<sup>41</sup> Kampo is a complex and individualized Japanese traditional medicine based on Chinese and Korean medicine using Chinese and native plants, as well as macrobiotics, reiki and shiatsu.<sup>42</sup> Naturopathy, an eclectic practice of health care based on the healing power of nature that is effective in a range of complex chronic conditions and is rapidly expanding worldwide.<sup>43</sup>

### Biological Therapies

The oldest system of healing by the ancestral cultures, mainly based on the local biodiversity and the interaction with socio-cultural settings. Traditional information is being validated by in vitro, in vivo clinical procedures using conventional and innovative procedures.<sup>44-46</sup>

*Phytotherapy* is the most commonly used biological therapy worldwide, particularly for its traditional use, accessibility and relatively low toxicity, demonstrating an important involvement of researchers at a multidisciplinary approach, and significant increase in the acceptance by the population.<sup>47-50</sup> Validation processes are multiple, control processes important for quality production, and clinical trials increasing for safe and efficacy, but it must be avoided the “allopathization of phytotherapy”.<sup>51</sup>

*Trophotherapy and nutraceuticals* are the preventive and curative method through healthy food and diet, looking for an organic regeneration of the body by regular or functional food or in a pharmaceutical presentation as a supplement,<sup>52,53</sup> particularly in the management of chronic diseases and associated co-morbidities.<sup>54</sup> In recent years it has been stressed the regular consumption of soy, berries and cruciferous for its chemopreventive properties.<sup>55</sup>

*Aromatherapy* is the clinical use of essential oils by olfactory or dermal application, although some reviews demonstrated that evidence is still not fully convincing.<sup>56</sup> Recent research evidence is provided about mechanism of action and new developments,<sup>57</sup> as well, as clinical evidence in handling diverse nervous ailments,<sup>58</sup> chronic rheumatic pain,<sup>59</sup> and for patients with palliative care needs.<sup>60</sup>

*Zootherapy* is the use of animals and their product

for therapeutic purposes, used since very ancient times by diverse civilizations.<sup>61,62</sup> It include the clinical use of insects (Entomotherapy),<sup>63,64</sup> dolphin-assisted therapy (Bototherapy),<sup>65</sup> horses (Hypotherapy),<sup>66</sup> animal assisted-therapy,<sup>67</sup> Toxintherapy with terrestrial and marine venoms,<sup>68,69</sup> and bee-hive products (Apitherapy), including honey, propolis, royal jelly and venom.<sup>70,71</sup>

**Other therapies:** Other important biological therapies include the use of organs (Organotherapy or Otototherapy) or cells (Cellular therapy) for restoration of function and diverse health benefits,<sup>72</sup> using cells or organs in homeopathic doses of nosodes,<sup>73</sup> isopathic and sarcodes,<sup>74</sup> or translating this information into clinical application with modern manufacturing technologies.<sup>75</sup> This therapies also include other treatments using natural ways, particularly the use of water (Hydrotherapy use of water in different forms;<sup>76</sup> Balneotherapy, the use of balneary and spa in healing processes of pain,<sup>77</sup> management of osteoarthritis,<sup>78</sup> fibromyalgia,<sup>79</sup> and multiple sclerosis;<sup>80</sup> Pelotherapy, the use of clay in topical applications).<sup>81</sup>

### Energy-Based Therapies

**Acupuncture.** This is a traditional therapy developed in Asia, and currently accepted by western countries, based on the body distribution of energy flow through acupoints and meridians,<sup>82</sup> it has demonstrated to be very effective in the clinical management of acute and chronic pain,<sup>83</sup> <sup>84</sup> essential hypertension,<sup>85</sup> chronic obstructive pulmonary disease,<sup>86</sup> in contraposition to pharmacological treatment that have demonstrated serious side effects.<sup>87</sup> Basic research has moved from simple analgesia to physiological function of the brain.<sup>88</sup> Application of needles or moxibustion has demonstrated effectiveness in the handling of insomnia.<sup>89</sup>

**Tai chi and qigong** are important body energy activation procedures, synchronized with rhythmic exercises following the principle of *qi* regulation for harmonizing mind and body for self-healing, particularly in acute and chronic pain,<sup>90,91</sup> although at times it is considered insufficiently regulated and there are difficulties in confirming the real potential for health and disease treatment.<sup>92</sup>

**Foot reflexology** is a diagnostic and therapeutic technique based on facilitating energy flow by applying pressure r massage in specific foot sites which reflects an homunculus, identifying at least four categories of effects related to the stages of sleep, and has demonstrated to be effective in improving quality of life in cancer patients, decreasing anxiety and pain, as well as other health problems.<sup>93-95</sup>

**Ozonotherapy** is a therapy used for more than 150 years, consisting in the administration of ozone (O<sub>3</sub>) in order to inactivate microorganisms, stimulate mitochondria and oxygen metabolism and activate the immune system.<sup>96,97</sup> Clinical evidence demonstrated effectiveness in the management of diabetes and chronic oxidative stress,<sup>98</sup> multidrug resistant bacteria without antimicrobials,<sup>99</sup>

lumbar disk herniations,<sup>100</sup> systemic sclerosis,<sup>101</sup> and various dental disease.<sup>102</sup>

**Other therapies.** Since this domain is based on the energy flow, other therapies are applied, like Heliotherapy (use of sun and other light radiations for systemic or topical therapies),<sup>103,104</sup> Magnetotherapy (effect of magnetic fields in healing, i.e. enhancing effectiveness of breast cancer therapy, tendon regeneration, and chronic obstructive pulmonary disease),<sup>105-107</sup> and Chromotherapy (color as a therapeutic option, because it is not challenged by proportion-shape-line-texture therapies and contribute significantly in the treatment of psychological trauma).<sup>108-110</sup>

### Physical Manipulation Therapies

The techniques that involve physical manipulation are ancient healing procedures known to many cultures as bone setter or similar, but the technification and academic literature based on clinical evidence are relatively new.

**Osteopathy and chiropractic.** They are therapies relatively similar, at times undifferentiated by the patient, but with differences in physical manipulative techniques; the first initiated by Still and the later by Palmer, with an approach that they are better than drugging.<sup>111</sup> Both techniques are now working on evidenced-based approach with positive characteristics, collaborating with conventional doctors, and receiving patients acceptance in the treatment of diverse pains.<sup>112-114</sup>

**Massage, reiki, shiatsu.** Are manual therapies that prevent or correct mechanical derangements in association with muscles and skeleton, with benefits in short and long term, they have grown significantly.<sup>115</sup> Regular use of massage might improve performance in athletes,<sup>116</sup> but also the motor development of premature newborns,<sup>117</sup> and is effective when palliative care is needed.<sup>60</sup>

Reiki was originally developed in Tibet, improved in Japan and recently introduced in Europe and the United States, based on energy transfer from healer to patient to equilibrate and induce integral wellbeing, it has been successfully used on quality of life in cancer patients.<sup>118,119</sup> Shiatsu is a holistic massage technique with thumb and hand pressure in acupoints, it has been demonstrated to be effective and applied by a therapist in refractory pain.<sup>122</sup>

**Lymphatic drainage.** Draining process of accumulated fluid in malignant tissue by applying directed massage for improving fluid transport and wastes elimination, in order to activate lymphoid system and dispose of organic wastes. It has demonstrated efficacy in handling sentinel node procedure for prostate carcinoma,<sup>123</sup> head and neck cutaneous melanoma,<sup>124</sup> and total knee arthroplasty.<sup>125</sup>

**Neural therapy.** Based on Pavlov investigations, it was originally developed in Germany by Huneke and others, it is now being spread worldwide for its significant efficiency in neurologic treatment. It is designed to neutralize irritations and repair dysfunctions of the autonomic nervous system by injection treatment of lidocaine to

stimulate healing, it is effective in treatment of chronic pain,<sup>126</sup> multiple sclerosis<sup>127</sup> and fibromyalgia.<sup>128</sup>

### Mind-Body Manipulation Therapies

Intervention on person's mental, physical or emotional state will influence body changes, particularly in the management of chronic pain and other ailments. Manipulations are multiple, like yoga, biofeedback, cognitive behavior, meditation, hypnotherapy, pray, and others.<sup>129</sup> Successful applications include menopausal transition,<sup>130</sup> autism,<sup>131</sup> posttraumatic stress disorder,<sup>132</sup> musculoskeletal pain,<sup>133</sup> heart failure,<sup>134</sup> and helpful for people living with HIV.<sup>135</sup>

*Yoga and meditation.* Yoga is an ancient Indian therapy based on undergoing to a "yoke" for balancing the body and mind through positions and stretching's in order to heal or transcend to a higher level for pediatric and medical conditions, including a very ample spectrum of diseases.<sup>136</sup> It is particularly useful in handling ailments in which obesity plays a significant role,<sup>137</sup> improving quality of life in elderly breast cancer patients,<sup>138</sup> and as effective therapy of cardiovascular disease,<sup>139</sup> and chronic low back pain.<sup>140</sup> In association with yoga or not, mindfulness meditation showed efficient results when used in substance abuse disorders and preventive relapse,<sup>141</sup> other intervention such as relaxation with or without aromatherapy are also useful, particularly in handling fatigue in patients undergoing hemodialysis,<sup>142</sup> as well as transcendental meditation in prevention and treatment of cardiovascular diseases.<sup>143</sup>

*Bach floral remedies.* It is a healing system developed by the homeopath Edward Bach to utilize 38 flower remedies for subjective and emotional problems and pain by the principle of self-healing. The clinical use is based on seven disharmonized stages in which the florals reestablish equilibrium. Some clinical evidence has been provided in the case of attention deficit hyperactivity,<sup>144</sup> several psychological problems and pain,<sup>145</sup> and external use in the treatment of carpal tunnel syndrome,<sup>146</sup> with relative good acceptance in Latin American countries.<sup>147</sup>

*Musicotherapy.* Music is usually recognized as a healing therapy for emotional diseases, providing comfort beyond entertainment as suggesting usefulness in psychiatric disorders and mental health.<sup>148,149</sup> Clinical evidence has demonstrated successful management of depression,<sup>150</sup> chronic pain,<sup>151</sup> dementia,<sup>152</sup> as well as helping in the handling of anxiety,<sup>153</sup> treatment of substance use patients,<sup>154</sup> and chronic renal patients.<sup>155</sup>

### Conclusions

Conventional allopathic medicine covers up to 30% of the population in developed countries, but in developing countries and traditional societies worldwide, CAM and Integrative Medicine is the main resource available, due to the rapidly increasing prices of allopathic medicine and the beliefs expected in the society for "natural

healing". It is evident that the diverse therapies organized in the five domains of Integrative Medicine are growing worldwide and all are looking for an approval according to evidence-based protocols, although "allopathization" of these therapies should be avoided. It is concluded that a deep insight on Integrative Medicine is needed from the academic, public health, commercial and governmental point or view for a fair and compromised approach for the benefit of all.

### Acknowledgements

The author wishes to thank the support by professors and students of University of San Carlos and Galileo University at undergraduate and graduate level for helping in literature review and discussion of different therapies. The support by the National Council for Science and Technology (grant ComunicaCTi 23-2018) to organize the I National Congress of Integrative Medicine held in Guatemala in 2018 helped to consolidate the information gathered in different instances and organize a comprehensive way to look into Integrative Medicine.

### Competing Interests

None

### References

1. Ouellat C, Saïas T, Sit V, et al. Access to indigenous and allopathic medicines: A systematic review revision of barriers and facilitators. *Global J Comm Psychol Pract.* 2018;9:1-38.
2. Ackerknecht EH. A short history of medicine. Baltimore: Johns Hopkins;2016
3. Foley H, Steel A, Cramer H, et al. Disclosure of complementary medicine use to medical providers: a systemic review and meta-analysis. *Sci Rep.* 2019;9:1573. doi:10.1038/s41598-018-38279-8
4. Kemppainen LM, Kemppainen TT, Reippainen JA, et al. Use of complementary and alternative medicine in Europe: Health-related and sociodemographic determinants. *Scand J Pub Health.* 2018;46:448-55. doi:10.1167/1403494817733869
5. Eisenberg DM, Kaptchuk TJ, Post DE, et al. Establishing an integrative medicine program within an academic health center: Essential considerations. *Acad Med.* 2016;91:1223-60. doi:10.1097/ACM0000000000001173.
6. Cáceres-Guido P, Ribas A, Gaioli M, et al. The state of the integrative medicine in Latin America: The long toad to include complementary, natural, and traditional practices in formal health systems. *Eur J Integr Med.* 2015;7:5-12. doi:10.1016/j.eujim.2014.06.010
7. Fan D. Holistic integrative medicine: toward a new era of medical advancement. *Front Med* 2016;11:152-9. doi:10.1007/s11684-017-0499-6
8. Lim EJ, Vardy JL, Oh BS, Dhillon HM. Comparison of integrative medicine centers in the USA and Germany: a mixed method study. *Support Care Cancer.* 2017;25:1865-72. doi:10.1007/s00520-017-3590-2
9. Dobos G. Integrative medicine – Medicine of the future or 'Old wine in new skins'? *Eur J Integr Med.* 2009;1:109-15. doi:10.1016/j.eujim.2009.08.001
10. Rakel D, Weil A. Philosophy of Integrative Medicine. In: Rakel D. *Integrative Medicine.* 4th ed. Philadelphia: Elsevier; 2018:2-13.



11. Mukherjee PK, Nema NK, Venkatesh P, Debnath PK. Changing scenario for promotion and development of Ayurveda – way forward. *J Ethnopharmacol.* 2012;143:424-34. doi:[10.1016/j.jep.2012.07.036](https://doi.org/10.1016/j.jep.2012.07.036)
12. Jaisal YS, Williams LL. A glimpse of Ayurveda – The forgotten history and principles of Indian traditional medicine. *J Tradit Complement Med.* 2017;7:50-3. doi:[10.1016/j.jtcme.2016.02.002](https://doi.org/10.1016/j.jtcme.2016.02.002)
13. Dong JC. The relationship between traditional Chinese medicine and modern medicine. *Evid Based Complement Alternat Med* 2013;2013:153148. doi:[10.1155/2013/153148](https://doi.org/10.1155/2013/153148)
14. Huang CJ, Lin HJ, Liao WL, et al. Diagnosis of traditional Chinese medicine constitution by integrating indices of tongue, acoustic sound, and pulse. *Eur J Integr Med.* 2019;27:114-20. doi:[10.1016/j.eujim.2019.04.001](https://doi.org/10.1016/j.eujim.2019.04.001)
15. Wu M, Hu JQ, Liu BY. The reporting quality assessment of complex interventions' articles in traditional Chinese medicine. *Evid Based Complement Alternat Med* 2013;2013:250690. doi:[10.115/2013/250690](https://doi.org/10.115/2013/250690)
16. Guerra F. Aztec medicine. *Med Hist* 1966;10:315-38. doi:[10.1017/S0025727300011455](https://doi.org/10.1017/S0025727300011455)
17. Ortiz de Montellano B. Empirical Aztec medicine. *Science* 1975;188:215-20. doi:[10.1126/science.1090996](https://doi.org/10.1126/science.1090996)
18. Guerra F. Maya medicine. *Med Hist.* 1964;8:31-43. doi:[10.1017/S0025727300029070](https://doi.org/10.1017/S0025727300029070)
19. Elferink JGR. The Inca healer: empirical medical knowledge and magic in pre-Columbian Peru. *Rev Indias.* 2015;75:323-50.
20. Nigenda G, Mora-Flores G, Aldama-López S, Orozco-Nuñez E. La práctica de la medicina tradicional en América Latina y el Caribe: el dilema entre regulación y tolerancia. *Salud Pública Mex.* 2001;43:41-51.
21. Ladas EJ, Lin M, Antillon F et al. Improving our understanding of the use of traditional complementary/alternative medicine in children with cancer. *Cancer.* 2015;121:1492-8. doi:[10.1002/cancer.29212](https://doi.org/10.1002/cancer.29212)
22. Bussman RW, Glenn A. Traditional knowledge for modern ailments – plants used for the treatment of diabetes and cancer in Northern Peru. *J Med Plants Res.* 2011;5:6919-30. doi:[10.5897/JMPR09.351](https://doi.org/10.5897/JMPR09.351)
23. Andrews CM, Wyne K, Svenson JE. The use of traditional and complementary medicine for diabetes in rural Guatemala. *J Health Care Poor Underserved.* 2018;29:1188-1208. doi:[10.1353/hpu.2018.0092](https://doi.org/10.1353/hpu.2018.0092)
24. García-Alvarado JS, Verde-Star MJ, Heredia ML. Traditional uses and scientific knowledge of medicinal plants from Mexico and Central America. *J Herbs Spices Med Plats.* 2001;8:37-89. doi:[10.1300/J044v08n02\\_02](https://doi.org/10.1300/J044v08n02_02)
25. Leonti M, Sticher O, Heinrich M. Antiquity of medicinal plant usage in two Macro-Mayan ethnic group (México). *J Ethnopharmacol.* 2003;88:119-24. doi:[10.1016/S0378-8741\(93\)00188-0](https://doi.org/10.1016/S0378-8741(93)00188-0)
26. Bussmann RW. The globalization of traditional medicine in Northern Peru: From shamanism to molecules. *Evid Based Complement Alternat Med.* 2013;2013:291903. doi:[10.1155/2013/2919](https://doi.org/10.1155/2013/2919)
27. Gonzalez de la Cruz M, Malpartida SB, Santiago HB, et al. Hot and cold: Medicinal plant uses in Quechua speaking communities in the high Andes (Callejón de Huaylas, Ancash, Perú). *J Ethnopharmacol.* 2014;155:1093-117. doi:[10.1016/j.jep.2014.04.042](https://doi.org/10.1016/j.jep.2014.04.042)
28. Hitziger M, Heinrich M, Edwards P, et al. Maya phytomedicine in Guatemala – Can cooperative research change ethnopharmacological paradigms. *J Ethnopharmacol.* 2016;186:61-72. doi:[10.1016/j.jep.2016.03.040](https://doi.org/10.1016/j.jep.2016.03.040)
29. Ingar C. The medicine of the Ukhu Pacha. Andean sacred teachings around pregnancy, birth and postpartum. *Midwifery Today.* 2016;118:34-7.
30. Summer A, Guendelman S, Kestler E, Walker D. Professional midwifery in Guatemala: A qualitative exploration of perceptions, attitudes and expectations among stakeholders. *Soc Sci Med.* 2017;184:99-107. doi:[10.1016/j.socscimed.2017.05.005](https://doi.org/10.1016/j.socscimed.2017.05.005)
31. Carvajal-Barona R, Gómez-Gómez MC, Restrepo-Acuña N, et al. Panorama académico y político que enfrentan las parteras tradicionales en América Latina. *Rev Cubana Salud Pub.* 2018;44:e1061,
32. Relton C, Cooper K, Viksveen P, et al. Prevalence of homeopathy use by the general population worldwide: a systemic review *Homeopathy* 2017;106:69-78. doi:[10.1016/j.homp.2017.03.002](https://doi.org/10.1016/j.homp.2017.03.002)
33. Dossett ML, Yeh GY. Homeopathy use in the United States and implications for Public Health: a review. *Homeopathy* 2018;107:3-9. doi:[10.1055/s-0037-1609016](https://doi.org/10.1055/s-0037-1609016)
34. Şenel E. Evolution of homeopathy: A scientometric analysis of global homeopathy literature between 1975-2019. *Complement Ther Clin Pract.* 2019;34:165-73. doi:[10.1016/j.ctcp.2018.11.018](https://doi.org/10.1016/j.ctcp.2018.11.018)
35. Jütte R, Riley D. A review of the use and role of low potencies in homeopathy. *Complement Ther Med.* 2005;13:291-6. doi:[10.1016/j.ctim.2005.10.003](https://doi.org/10.1016/j.ctim.2005.10.003)
36. Ahmad R. Current clinical status of homeopathy: An evidence based retrospective six year review. *Ann Res Rev Biol.* 2018;22:1-15. doi:[10.9734/ARRB\(2018/37676](https://doi.org/10.9734/ARRB(2018/37676)
37. Claussen CF. Homotoxicology: The basis of a probiotic, holistic practice of medicine. *Biol Ther* 1989;8:37-9
38. Ernst E, Schmidt K. Homotoxicology – a review of randomized clinical trials. *Eur J Clin Pharmacol.* 2004;60:299-308. doi:[10.1007/s00228-004-0776-6](https://doi.org/10.1007/s00228-004-0776-6)
39. Samal J. A brief assessment of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy health system based on five-year plants of India. *Inter J Green Pharm.* 2016;10:S91-5.
40. Lone AH, Ahmad M, Sofi G, Imam H. Perception of health in Unani herbal medicine. *J Herb Med.* 2012;2:1-5. doi:[10.1016/j.hermed.2012.02.002](https://doi.org/10.1016/j.hermed.2012.02.002)
41. Subbarayappa BV. Siddha medicine: an overview. *Lancet* 1997;350:P1841-44. doi:[10.1016/S0140-6736\(97\)04223-2](https://doi.org/10.1016/S0140-6736(97)04223-2)
42. Watanabe K, Matsuura K, Gao P. Traditional Japanese Kampo medicine: Clinical research between modernity and traditional medicine – The state of research and methodological suggestions for the future. *Evid Based Complement Alternat Med* 2011;2011:513841. doi:[10.1093/ecam/nej067](https://doi.org/10.1093/ecam/nej067)
43. Myers SP, Vigar V. The state of the evidence for whole-system, multi-modality naturopathic medicine: A systematic scoping review. *J Altern Complement Med.* 2019;25:141-68. doi:[10.1089/acm.2018.0340](https://doi.org/10.1089/acm.2018.0340)
44. Butterweck V, Nahrstedt A. What is the best strategy for preclinical testing of botanicals? A critical perspective. *Planta Med.* 2012;78:747-54. doi:[10.1055/s-0031-1298434](https://doi.org/10.1055/s-0031-1298434)
45. Rather MA, Bhat BA, Qurishi MA. Multicomponent phytotherapeutic approach gaining momentum: Is the “one drug fit all” model breaking down?. *Phytomedicine.* 2013;21:1-14. doi:[10.1016/j.phytomed.2013.07.015](https://doi.org/10.1016/j.phytomed.2013.07.015)
46. Thomford NE, Senthane DA, Rowe A, et al. Natural products for drug discovery in the 21st century: Innovation for novel drug discovery. *Int J Molec Sci.* 2018;19:1578. doi:[10.1190/](https://doi.org/10.1190/)

ijms19061578

47. Pandey M, Debnath M, Gupta S, et al. Phytomedicine: An ancient approach turning into future potential source of therapeutics. *J Pharmacog Phytother.* 2011;3:27-37.
48. Jokar NK, Noorhosseini SA, Allahyari MS, Damalas CA. Consumers' acceptance of medicinal herbs: An application of the technology acceptance model (TAM). *J Ethnopharmacol.* 2017;2007:203-10. doi:10.1016/j.jep.2017.06.017
49. Ekor M. The growing use of herbal medicines: issues relating to adverse reactions and challenges in monitoring safety. *Front Pharmacol.* 2014;4:177. doi:10.3389/fphar.2013.00177
50. Carmona F, Pereira AMS. Herbal medicine: old and new concepts, truths and misunderstandings. *Rev Bras Pharmacog.* 2013;23:379-85. doi:10.1590/S0102-695X2013005000018
51. Cáceres A, Cruz SM. Detection and validation of native plants traditionally used as medicine in Guatemala. *Curr Trad Med.* 2019;5:5-30. doi:10.2174/2215083805666190327172409
52. Pang G-C, Xie J-B, Chen Q-S, He Z-H. How functional foods play critical roles in human health. *Food Sci Hum Well.* 2012;1:26-60. doi:10.1017/j.fshw.2012.10.001
53. Bergamin A, Mantzioris E, Cross G, et al. Nutraceuticals: Reviewing their role in chronic disease prevention and management. *Pharm Med.* 2019;33:291-309. doi:10.1007/s40290-019-00289-w
54. Baboota RK, Bishnoi M, Ambalam P, et al. Functional food ingredients for the management of obesity and associated co-morbidities – A review. *J Funct Foods.* 2013;5:997-1012. doi:10.1016/j.jff.2013.04.014
55. Kristo AS, Klimis-Zacas D, Sikilidis AK. Protective role of dietary berries in cancer. *Antioxidants.* 2016;5:37. doi:10.3390/antiox5040037
56. Lee MS, Choi J, Posadzki P, Ernst E. Aromatherapy for health care: An overview of systematic reviews. *Maturitas.* 2012;71:257-60. doi:10.1016/j.maturitas.2011.12.018
57. Schneider R, Singer N, Singer T. Medical aromatherapy revisited – Basic mechanisms, critique, and a new development. *Hum Psychopharmacol Clin Exp.* 2018;34:e2683. doi:10.1002/hup.2683
58. Lee MK, Lim S, Song JA, et al. The effect of aromatherapy essential oil inhalation on stress, sleep quality and immunity in healthy adults: Randomized controlled trial. *Eur J Integr Med.* 2017;12:79-86. doi:10.1016/j.eujim.2017.04.009
59. Nasiri A, Mahmodi MSA. Aromatherapy massage with lavender essential oil and then prevention of disability in ADL in patients with osteoarthritis of the knee: A randomized controlled clinical trial. *Complement Ther Clin Pract.* 2018;30:116-21. doi:10.1016/j.ctcp.2017.12.012
60. Armstrong M, Flemming K, Kupeli N, et al. Aromatherapy, massage and reflexology: A systemic review and thematic synthesis of the perspectives from people with palliative care needs. *Palliat Med.* 2019;33:757-69. doi:10.1177/0269216319846440
61. Lev E. Traditional healing with animals (zootherapy): medieval to present-day Levantine practice. *J Ethnopharmacol.* 2003;85:107-118. doi:10.1016/S0378-8741(02)00377-X
62. Alves RRN, Alves HN. The faunal drugstore: Animal-based remedies used in traditional medicine in Latin America. *J Ethnobiol Ethnomed.* 2011;7:9. doi:10.1186/1746-4269-7-9
63. Ratcliffe NA, Mello CB, García ES, et al. Insect natural products and processes: New treatments for human disease. *Insect Biochem Mol Biol.* 2011;41:747-69. doi:10.1016/j.ibmb.2011.05.007
64. Shrivastava SK, Prakash A. Entomotherapy: An un-explored frontier for make in India: a review. *J Appl Zool Res.* 2015;26:113-23
65. Fiksdal BL, Houlihan D, Barnes AC. Dolphin-assisted therapy: Claims and evidence. *Autism Res Treat.* 2012;2012:839792. doi:10.1155/2012/839792
66. Romaniuk M, Evans J, Kidd C. Evaluation of an equine-assisted therapy program for veterans who identify as 'wounded, injured or ill' and their partners. *PLoS One* 2018;13:e203943. doi:10.1371/journal.pone.0203943
67. Bert F, Gualano MR, Camussi E, et al. Animal assisted interventions: A systematic review of benefits and risks. *Eur J Integr Med.* 2016;8:695-706. doi:10.1016/j.eujim.2016.05.005
68. Peigneur S, Tytgat J. Toxins in drug discovery and pharmacology. *Toxins.* 2018;10(3):126. doi:10.3390/toxins10030126
69. Li L, Huang J, Lin Y. Snake venoms in cancer therapy: Past, present and future. *Toxins.* 2018;10(9):346. doi:10.3390/toxins10090346
70. Viuda-Martos M, Ruiz-Navajas Y, Fernández-López J, Pérez Álvarez JA. Functional properties of honey, propolis, and royal jelly. *J Food Sci.* 2008;73:R117-24. doi:10.1111/j.1750-3841.2008.00966.x
71. enel E, Demir E. Bibliometric analysis of apitherapy in complementary medicine literature between 1980 and 2016. *Complement Ther Clin Pract.* 2018;31:47-52. doi:10.1016/j.ctcp.2018.02.003
72. Galipeau J, Krampera M, Barrett J, et al. International Society for Cellular Therapy perspective on immune functional assays for mesenchymal stromal cells as potency release criterion for advanced phase clinical trials. *Cytotherapy* 2016;18:151-9. doi:10.1016/j.jcyt.2015.11.008
73. Sankar K, Jadhav AP. Nosodes and sarcodes. *Indian J Trad Know.* 2017;16:158-63.
74. Mashru R, Gandhi K, Ekta A, Raola V. Sarcodes therapy as a restorative of health. *Wld J Pharm Pharmaceut Sci* 2017;6:2579-98. doi:10.20959/wjpps20178-9950
75. Heathman TRJ, Nienow AW, McCall MJ, et al. The translation of cell-based therapies: clinical landscape and manufacturing challenges. *Regen Med* 2015;10:49-64. doi:10.2217/RME.14.73
76. Vladeva E, Bacheva D, Todorov I. Spas and wellness – A new philosophy for harmony in life. *Scrip Sci Sal Pub.* 2016;2:50-54
77. Bender T, Karagülle Z, Bálint GP, et al. Hydrotherapy, balneotherapy, and spa treatment in pain management. *Rheumatol Int.* 2005;25:220-4. doi:10.1007/s00296-004-0487-4
78. Matsumoto H, Hagino H, Hayashi K, et al. The effect of balneotherapy on pain relief, stiffness, an physical function in patients with osteoarthritis of the knee: a meta-analysis. *Clin Rheumatol.* 2017;36:1839-47. doi:10.1007/s10067-017-3592-y
79. Ablin JN, Häuser W, Buskila D. Spa treatment (Balneotherapy) for fibromyalgia – A qualitative-narrative review and a historical perspective. *Evid Based Complement Alternat Med* 2013;2013:638050. doi:10.1155/2013/638050
80. Corvillo I, Varela E, Armijo F, et al. Efficacy of aquatic therapy for multiple sclerosis: a systemic review. *Eur J Phys Rehabil Med* 2017;53:944-52. doi:10.23736/S1973-9087.17.04570-1
81. Gomes C, Carretero MI, Pozo M, et al. Peloids and pelotherapy: Historical evolution, classification and glossary. *Appl Clay Sci.* 2013;75-76:2838. doi:10.1016/j.clay.2013.02.008
82. Li F, He T, Xu Q, et al. What is the acupoint? A preliminary

- review of acupoints. *Pain Med.* 2015;16:1905-15. doi:[10.1111/pme.12761](https://doi.org/10.1111/pme.12761)
83. Chia KL, Lam RPK, Lam CK, Tsiu SH. Acupuncture in the emergency department: a systematic review of randomized controlled trials. *Acupunct Med.* 2018;36:183-92. doi:[10.1136/acupmed-2017-011547](https://doi.org/10.1136/acupmed-2017-011547)
84. Vickers AJ, Vertosick EA, Lewith G, et al. Acupuncture for chronic pain: update of an individual patient data meta-analysis. *J Pain* 2017;19:455-74. doi:[10.1016/j.jpain.2017.11.005](https://doi.org/10.1016/j.jpain.2017.11.005)
85. Tan X, Pan Y, Su W, et al. Acupuncture therapy for essential hypertension: a network meta-analysis. *Ann Transl Med.* 2019;7(12):266. doi:[10.21037/atm.2019.05.59](https://doi.org/10.21037/atm.2019.05.59)
86. Wang J, Li JS, Yu X, Xie Y. Acupuncture therapy for functional effects and quality of life in COPD patients: A systematic review and meta-analysis. *BioMed Res Inter.* 2018;2018:3026726. doi:[10.1155/2018/3026726](https://doi.org/10.1155/2018/3026726)
87. Chao MT, Chang A, Reddy S, et al. Adjunctive acupuncture for pain and symptom management in the inpatient setting: protocol for a pilot hybrid effectiveness-implementation study. *J Integr Med* 2016;14:228-38. doi:[10.1016/S2095-4964\(16\)60252-2](https://doi.org/10.1016/S2095-4964(16)60252-2)
88. Chen WL, Hsieh CL. Current trends in acupuncture research: From analgesia to physiological function of brain (pp. 3-34). In LL Chen & TO Cheng – *Acupuncture in Modern Medicine*. Rijeka, Croatia: InTech; 2013. doi:[10.5772/46017](https://doi.org/10.5772/46017)
89. Huang KY, Liang S, Grellet A, Zhang JB. Acupuncture and moxibustion for primary insomnia: A systemic review and meta-analysis of randomized controlled trials. *Eur J Integr Med* 2017;12:93-107. doi:[10.1016/j.eujim.2017.04.007](https://doi.org/10.1016/j.eujim.2017.04.007)
90. Fetherston CM, Wei L. The benefits of tai chi as a self management strategy to improve health in people with chronic conditions. *J Nurs Health Chron Ill* 2011;3:155-63. doi:[10.1111/j.1752-9824.2011.01089x](https://doi.org/10.1111/j.1752-9824.2011.01089x)
91. Blödt S, Pach D, Kaster T, et al. Qigong versus exercise therapy for chronic low back pain in adults – A randomized controlled non-inferiority trial. *Eur J Pain* 2014;19:123-31. doi:[10.1002/ejp.529](https://doi.org/10.1002/ejp.529)
92. Jiménez-Martín PJ, Liu HQ, Melendez-Ortega A. How to study the relationship between Tai Chi Chuan, Qigong and medicine – A review of research frameworks. *Eur J Integr Med.* 2016;8:888-93. doi:[10.1016/j.eujim.2016.11.012](https://doi.org/10.1016/j.eujim.2016.11.012)
93. Jones J, Thomson P, Lauder W, et al. Reflexology has an acute (immediate) haemodynamic effect in healthy volunteers: A double-blind randomized controlled trial. *Complement Ther Clin Pract.* 2012;18:204-11. doi:[10.1016/j.ctcp.2012.03.006](https://doi.org/10.1016/j.ctcp.2012.03.006)
94. Samuel CA, Ebenezer IS. Exploratory study on the efficacy of reflexology for pain threshold and tolerance using an ice-pain experiment and sham TENS control. *Complement Ther Clin Pract.* 2013;19:57-62. doi:[10.1016/j.ctcp.2013.02.005](https://doi.org/10.1016/j.ctcp.2013.02.005)
95. Esmel-Esmel N, Tomás-Esmel E, Aparicio-Rollan Y, et al. Exploring the body through reflexology: Physical behaviors observed during application. *Complement Ther Clin Pract.* 2016;25:52-8. doi:[10.1016/j.ctcp.2016.08.005](https://doi.org/10.1016/j.ctcp.2016.08.005)
96. Elvis AM, Ekta JS. Ozone therapy: A clinical review. *J Nat Sci Biol Med.* 2011;2:66-70. doi:[10.4103/0976.9668.82319](https://doi.org/10.4103/0976.9668.82319)
97. Mandhare MN, Jagdale DM, Gaikwad PL, et al. Miracle of ozone therapy as an alternative medicine. *Int J Pharm Chem Biol Sci.* 2012;2:63-71.
98. Bocci V, Zanardi I, Huijberts MSP, Travagli V. Diabetes and chronic oxidative stress: A perspective based on the possible usefulness of ozone therapy. *Diabetes Metabol Syndr.* 2011;5:45-9. doi:[10.1016/j.dsx.2010.05.014](https://doi.org/10.1016/j.dsx.2010.05.014)
99. Georger DE, Honnorat E, Savini H, et al. Anti-infective therapy without antimicrobials: Apparent successful treatment of multidrug resistant osteomyelitis with hyperbaric oxygen therapy. *IDCases* 2016;6:60-4. doi:[10.1016/j.idcr.2016.09.008](https://doi.org/10.1016/j.idcr.2016.09.008)
100. Muto M, Giurazza F, Silva RP, Guarnieri G. Rational approach technique and selection criteria treating lumbar disk herniation by oxygen-ozone therapy. *Interv Neuroradiol.* 2016;22:736-40. doi:[10.1177/1591019916659266](https://doi.org/10.1177/1591019916659266)
101. Nowicka D. Thermography improves clinical assessment in patients with systemic sclerosis treated with ozone therapy. *BioMed Res Int.* 2017;2017:5842723. doi:[10.1155/2017/5842723](https://doi.org/10.1155/2017/5842723)
102. Tiwari S, Avinash A, Katiyar S, et al. Dental application of ozone therapy: A review of literature. *Saudi J Dental Res.* 2017;8:105-11. doi:[10.1016/j.sjdr.2016.06.005](https://doi.org/10.1016/j.sjdr.2016.06.005)
103. van Maanen A, Meijer AM, van der Heijden KB, Oort FJ. The effect of light therapy on sleep problems: A systematic review and meta-analysis. *Sleep Med Rev.* 2016;20:52-62. doi:[10.1016/j.smrv.2015.08.009](https://doi.org/10.1016/j.smrv.2015.08.009)
104. Vangipuram R, Feldman SR. Ultraviolet phototherapy for cutaneous diseases: a concise review. *Oral Dis.* 2016;22:253-9. doi:[10.1111/odi.12366](https://doi.org/10.1111/odi.12366)
105. Salinas-Asensio MM, Ríos-Arrabal A, Artacho-Cordón F, et al. Exploring the radiosensitizing potential of magnetotherapy: a pilot study in breast cancer cells. *Int J Radiat Biol.* 2019;95:1337-45. doi:[10.1080/09553002.2019.1619951](https://doi.org/10.1080/09553002.2019.1619951)
106. Pesqueira T, Costa-Almeida R, Gomes ME. Magnetotherapy: The quest for tendon regeneration. *J Cell Physiol.* 2018;233:6395-405 doi:[10.1002/jcp.26637](https://doi.org/10.1002/jcp.26637)
107. Polastri M, Comellini V, Pacilli AMG, Nava S. Magnetic stimulation therapy in patients with COPD: A systemic review. *J Chron Obst Pulm Dis.* 2018;15:165-70. doi:[10.1080/15412555.2018.1439910](https://doi.org/10.1080/15412555.2018.1439910)
108. Whitfield TWA, Whelton J. The arcane roots of colour psychology, chromotherapy, and colour forecasting. *Color Res.* 2013;40:99-106. doi:[10.1002/col.21862](https://doi.org/10.1002/col.21862)
109. Azeemi STY, Raza SM. A critical analysis of chromotherapy and its scientific evolution. *Evid Based Complement Alternat Med* 2005;2:481-8. doi:[10.1093/ecam/neh137](https://doi.org/10.1093/ecam/neh137)
110. Paragas ED, Ng ATY, Reyes DVL, Reyes GAB. Effects of chromotherapy on the cognitive ability of older adults: A quasi-experimental study. *Explore.* 2019;15:191-7. doi:[10.1016/j.explore.2019.01.002](https://doi.org/10.1016/j.explore.2019.01.002)
111. Keating JC. Several pathways in the evolution of chiropractic manipulation. *J Manipulative Physiol Ther.* 2003;26:300-21. doi:[10.1016/S0161-4754\(02\)54125.7](https://doi.org/10.1016/S0161-4754(02)54125.7)
112. Dubois J, Scala E, Faouzi M, et al. Chronic low back pain patients' use of, levels of knowledge of and perceived benefits of complementary medicine: a cross-sectional study at an academic pain center. *BMC Complement Altern Med.* 2017;17:193. doi:[10.1186/s12906-017-1708-1](https://doi.org/10.1186/s12906-017-1708-1)
113. Salsbury SA, Goertz CM, Twist EJ, Lisi AJ. Integration of doctors of chiropractic into private sector health care facilities in the United States: A descriptive survey. *J Manipulative Physiol Ther.* 2018;41:149-55. doi:[10.1016/j.jmpt.2017.10.003](https://doi.org/10.1016/j.jmpt.2017.10.003)
114. Lam MT, Banihashem M, Lam HR, et al. Patients experience, satisfaction, perception and expectation of osteopathic manipulative treatment: A systemic review. *Int J Osteopath Med* 2019;32:28-43. doi:[10.1016/j.ijosm.2019.04.003](https://doi.org/10.1016/j.ijosm.2019.04.003)
115. Field T. Massage therapy research review. *Complement Ther Clin Pract* 2016;24:19-31. doi:[10.1016/j.ctcp.2016.04.005](https://doi.org/10.1016/j.ctcp.2016.04.005)
116. Moran RN, Hauth JM, Rabena R. The effect of massage on acceleration and sprint performance in track & field athletes.



- Complement Ther Clin Pract. 2018;30:1-5. doi:10.1016/j.ctcp.2017.10.010
117. Beaujou C, Calvo Muñoz I. Efecto del masaje sobre el peso y el desarrollo motor del recién nacido prematuro: revisión sistemática. *Fisioterapia* 2019;41:285-98. doi:10.1016/j.ft.2019.07.004
  118. Alarcão Z, Fonseca JRS. The effect of Reiki therapy on quality of life of patients with blood cancer: Results from a randomized controlled trial. *Eur J Integr Med.* 2015;8:239-49. doi:10.1016/j.eujim.2015.12.003
  119. Chirico A, D'Aiuto G, Penon A, et al. Self-efficacy for coping with cancer enhances the effect of reiki treatments during the pre-surgery phase of breast cancer patients. *Anticancer Res.* 2017;37:3657-65. doi:10.21873/anticancer.11736
  120. Kobayashi D, Shimbo T, Hayashi H, Takahashi O. Shiatsu for chronic back pain: Randomized controlled study. *Complement Ther Med.* 2019;45:33-7. doi:10.1016/j.ctim.2019.0.5019
  121. Villani V, Prosperini L, Palombini F, et al. Single-blind, randomized, pilot study combining shiatsu and amitriptyline in refractory primary headaches. *Neurol Sci.* 2017;38:999-1007. doi:10.1007/s10072-017-2888-7
  122. Brown CA, Bostick G, Bellmore L, Kumanayaka D. Hand self-Shiatsu for sleep disorders in persons with chronic pain: a pilot study. *J Integr Med.* 2014;12:94-101. doi:10.1016/S2095-4964(14)600010-8
  123. Bonilla-Damiá A, Brouwer OR, Meinhardt W, Valdés-Olmos RA. Lymphatic drainage in prostate carcinoma assessed by lymphoscintigraphy and SPEC/CT: Its importance for the sentinel node procedure. *Rev Esp Med Nuc Imagen Mol* 2012;31:66-70. doi:10.1016/j.remnm.2011.09.003
  124. Sutton P, Lukšić I, Müller D, Virag M. Lymphatic drainage patterns of head and neck cutaneous melanoma; does primary melanoma site correlate with anatomic distribution of pathologically involved lymph nodes? *Int J Oral Maxillofac Surg.* 2012;41:413-20. doi:10.1016/j.ijom.2011.12.027
  125. Ever JR, Joss B, Jardines B, Wood DJ. Randomized trial investigation the efficacy of manual lymphatic drainage to improve outcome after total knee arthroplasty. *Arch Phys Med Rehabil.* 2013;94:2103-12. doi:10.1016/j.apmr.2013.06.009
  126. Harris GR. Effective treatment of chronic pain by the integration of neural therapy and prolotherapy. *J Prolother* 2010;2:377-86.
  127. Tamam Y, Özdemir HH, Gedik A, et al. Efficacy of peripheral lidocaine application (neural therapy) in the treatment of neurogenic detrusor overactivity in multiple sclerosis patients. *Neurourol Urodyn* 2017;36:1832-8. doi:10.1002/nau.23191
  128. Altinbilek T, Terzi R, Başaran A, et al. Evaluation of the effects of neural therapy in patients diagnosed with fibromyalgia. *Turk J Phys Med Rehab* 2019;65:1-8. doi:10.5066/tftrd.2019.1931
  129. Hassed C. Mind-body therapies used in chronic pain management. *Aust Fam Physician.* 2013;42:112-7.
  130. Woods NF, Mitchell ES, Schmall JG, et al. Effects of mind-body therapies on symptom clusters during the menopausal transition. *Climacteric.* 2014;17:10-22. doi:10.3109/13697137.2013.828198
  131. Hourston A, Atchley R. Autism and mind-body therapies: A systematic review. *J Altern Complement Med.* 2017;23:331-9. doi:10.1089/acm.2016.0336
  132. Niles BL, Mori DAL, Polizzi C, et al. A systematic review of randomized trials of mind-body interventions for PTSD. *J Clin Psychol.* 2018;74:1485-1508. doi:10.1002/jclp.2263
  133. Lorenc A, Feder G, MacPherson H, et al. Scoping review of systematic reviews of complementary medicine for musculoskeletal and mental health conditions. *BMJ Open.* 2018;8(10):e020222. doi:10.1136/bmjopen-2017-020222
  134. Gok Metin Z, Ejem D, Dionne-Odom JN, et al. Mind-body interventions for individuals with heart failure: A systematic review of randomized trials. *J Card Fail* 2018;24:186-201. doi:10.1016/j.cardfail.2017.09.008
  135. Ramírez-García MP, Gagnon M-P, Colson S, et al. Mind-body practices for people living with HIV: a systematic scoping review. *BMC Complement Altern Med.* 2019;19:125. doi:10.1186/s12906-019-2502-z
  136. Field T. Yoga research review. *Complement Ther Clin Pract* 2016;24:145-61. doi:10.1016/j.ctcp.2016.06.005
  137. Rioux JG, Ritenbaugh C. Narrative review of yoga intervention clinical trials including weight-related outcomes. *Altern Ther Health Med.* 2013;19:32-46.
  138. Yagli NV, Ulger O. The effects of yoga on the quality of life and depression in elderly breast cancer patients. *Complement Ther Clin Pract* 2015;21:7-10. doi:10.1016/j.ctcp.2015.01.002
  139. Haider T, Sharma M, Branscum P. Yoga as an alternative and complimentary therapy for cardiovascular disease: A systematic review. *J Evid Based Complement Altern Med* 2017;22:310-6. doi:10.1177/2156587215627390
  140. Kuvačić G, Pradini P, Padiulo J, et al. Effectiveness of yoga and educational intervention on disability, anxiety, depression, and pain in people with CLBP: A randomized controlled trial. *Complement Ther Clin Pract.* 2018;31:262-7. doi:10.1016/j.ctcp.2018.03.008
  141. Priddy SE, Howard MO, Hanley AW, et al. Mindfulness meditation in the treatment of substance use disorders and preventing future relapse: neurocognitive mechanisms and clinical implications. *Subst Abuse Rehabil.* 2018;9:103-14. doi:10.2147/SAR.S145201
  142. Hassanzadeh M, Kiani F, Bouya S, Zarei M. Comparing the effects of relaxation technique and inhalation or aromatherapy on fatigue in patients undergoing hemodialysis. *Complement Ther Clin Pract.* 2018;31:210-4. doi:10.1016/j.ctcp.2018.02.019
  143. Schneider RH, Carr T. Transcendental meditation in the prevention and treatment of cardiovascular disease and pathophysiological mechanisms: An evidence-based review. *Adv Integr Med.* 2014;1:107-12. doi:10.1016/j.aimed-2014.08.003
  144. Pintov S, Hochman M, Livne A, et al. Bach flower remedies used for attention deficit hyperactivity disorder in children – A prospective double blind controlled study. *Eur J Paediatr Neurol.* 2005;9:395-8. doi:10.1016/j.ejpn.2005.08.001
  145. Thaler K, Kaminski A, Chapman A, et al. Bach Flower Remedies for psychological problems and pain: a systematic review. *BMC Complement Altern Med.* 2009;9:16. doi:10.1186/1472-6882-9-16
  146. Rivas-Suárez S, Águila-Vázquez J, Suárez-Rodríguez B, et al. Exploring the effectiveness of external use of Bach Flower Remedies on carpal tunnel syndrome: A pilot study. *J Evid-Based Complement Altern Med.* 2017;22:18-24. doi:10.1177/2156587215610705
  147. Rodríguez-Martín BC, Fallas-Durán M, Gaitskell, et al. Predictor of positive opinion about Bach Flower Remedies in adults from Latin-American countries: An exploratory study. *Complement Ther Clin Pract.* 2017;27:52-6. doi:10.1016/j.ctcp.2017.04.002
  148. Mössler K, Assmus J, Heldal TO, et al. Music therapy techniques as predictors of change in mental health care. *Arts Psychother* 2012;39:333-41. doi:10.1016/j.aip.2012.05.002



149. Solanki MS, Zafar M, Rastogi R. Music as a therapy: Role in psychiatric. *Asian J Psychiatr*. 2013;6:193-9. doi:[10.1016/jh.ajp.2012.12.001](https://doi.org/10.1016/jh.ajp.2012.12.001)
150. Chan MO, Chan EA, Mok E. Effects of music on depression and sleep quality in elderly people: Randomized controlled trial. *Complement Ther Med*. 2010;18:1560-9. doi:[10.1016/j.ctim.2010.02.004](https://doi.org/10.1016/j.ctim.2010.02.004)
151. Guétin S, de Diego E, Mohy F, et al. A patient-controlled, smartphone-based music intervention to reduce pain – A multi-center observational study of patients with chronic pain. *Eur J Integr Med*. 2016;8:182-7. doi:[10.1016/j.eujim.2016.01.002](https://doi.org/10.1016/j.eujim.2016.01.002)
152. Raglio A, Bellelli G, Mazzola P, et al. Music, music therapy and dementia: A review of literature and the recommendations of the Italian Psychogeriatric Association. *Maturitas*. 2012;72:305-10. doi:[10.1016/j.maturitas.2012.05.016](https://doi.org/10.1016/j.maturitas.2012.05.016)
153. Ghezeltjeh TN, Ardebili FM, Rafii F, Haghani H. The effect of patient-preferred music on anticipatory anxiety, post-procedural burn pain and relaxation level. *Eur J Integr Med*. 2017;9:141-7. doi:[10.1016/j.eujim.2016.12.004](https://doi.org/10.1016/j.eujim.2016.12.004)
154. Hohmann L, Bradt J, Stegmann T, Koelsch S. Effects of music therapy and music-based interventions on the treatment of substance use disorders: A systematic review. *PLoS One*. 2017;12(11):e0187363. doi:[10.1371/journal.pone.0187363](https://doi.org/10.1371/journal.pone.0187363)
155. Melo GAA, Rodrigues AB, Firmeza MA, et al. Musical intervention on anxiety and vital parameters of chronic renal patients: a randomized clinical trial. *Rev Lat-Amer Enferm*. 2018;26:e2978. doi:[10.1590/1518-8345.2123.2978](https://doi.org/10.1590/1518-8345.2123.2978)

© 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.