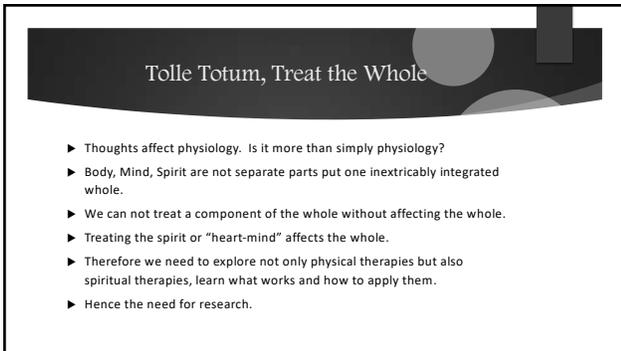
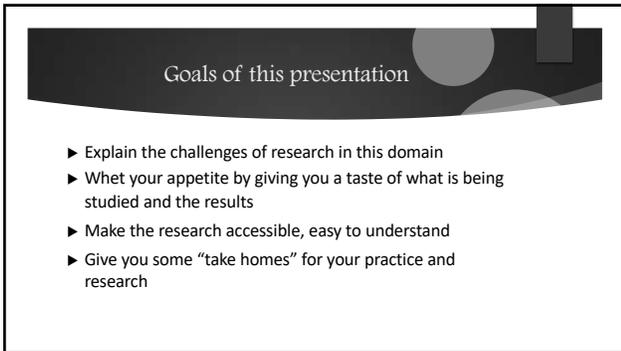


1



2



3

“Spirituality in Health Care”
1997 conference
University of New Mexico School of Medicine

Born Again Scientist

Scientific Mystic

4

Challenges

What defines Spirituality?

Complicated question as there are many definitions, somewhat amorphous.

Personal favorite:

“A high level of faith, hope and commitment in relation to a well-defined worldview or belief system that provides a sense of meaning and purpose to existence and that offers an ethical path to personal connectedness with self, others and a higher power or larger reality.”

Hawks S, Hull M, Thalman R, Richins P. Review of Spiritual Health: Definition, Role, and Intervention Strategies in Health Promotion. American Journal of Health Promotion. 1995;9(5):371-378.

Not so useful in terms of searching PubMed.

5

Challenges

What defines Spirituality?

Search terms and parameters I chose: Human Studies

▶ Prayer	Meditation/Mindfulness
▶ Compassion	Empathy
▶ Contemplative practice	Religious; practice or belief
▶ Intention or focused intention	Remote healing
▶ Remote perception	Psi, Psychic phenomena or healing
▶ Entanglement	

6

Challenges

- ▶ Objectivity
 - ▶ Fundamental goal in science
 - ▶ As human beings, very difficult to do
 - ▶ We know from physics that observation affects what is being observed.
 - ▶ This is a realm of research that is plagued by bias on all sides.
 - ▶ "Stranger in a strange land", Robert Heinlein
 - ▶ Character called a "Fair Witness"
 - ▶ Our view is defined by where we stand
 - ▶ We have to take this into account in assessing all research and literature

7

Challenges

- ▶ Availability: "Full Text" articles can be difficult to access
 - ▶ Can be expensive unless affiliated with a College or University library
 - ▶ *Immense Gratitude to Russell Iwami and Peggy Carey at NUHS Learning Center!!!*
- ▶ Assessment of Quality: Difficult to do detailed assessment
 - ▶ AANP Speaker Jeffrey Smith, "Genetic Roulette"
 - ▶ Sorting out both positive and negative biases in design and evaluation
- ▶ Publication: Articles have been difficult to publish
 - ▶ Controversial topic, History of strong opposition from National Research Council
 - ▶ Mention spirituality & science in the same sentence = the anti-tenure track
- ▶ Replication: Funding, controversial topic and complex variables to account for in design

8

Challenges

- ▶ Quality of research
 - ▶ A lot of variability in design, implementation and analysis
- ▶ Excellent Article for more in depth discussion:
 - ▶ "Spirituality, Health and CAM: Current Controversies"
 - ▶ Weaver, Flannelly, Stone and Dossey
 - ▶ ALTERNATIVE THERAPIES, Nov/Dec 2003, Vol. 9, No 6

9

Lessons From Spiritual Healing Research & Practice
A Report

- ▶ Daniel J. Benor, Lessons From Spiritual Healing Research & Practice, A Report, Subtle Energies, 1991;3(1)1:73-88
- ▶ One of the earliest summary articles I could find
- ▶ "Subtle Energies", publication of the **International Society for the Study of Subtle Energy and Energy Medicine, (ISSSEEM)**
 - ▶ "Connecting Science and Spirit"
 - ▶ Founded in 1989

10

Lessons From Spiritual Healing Research & Practice
A Report

- ▶ There are over 150 controlled studies of healing, of which more than half (65%) demonstrate significant results.

▶ Water	Crystallization	Enzymes
▶ Fungus	Yeast	Bacteria
▶ RBCs	Cancer Cells	Flagellates
▶ Plants	Algae	Moth larvae
▶ Snail Pacemaker Cells		
▶ Distant Healing		

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Lessons From Spiritual Healing Research & Practice
A Report

- ▶ **Mice:** skin wounds, goiter growth, amyloidosis, malaria, tumor growth, anesthesia
- ▶ **Humans:** hemoglobin levels, skin wounds, hypertension, asthma, bronchitis, myopia, epilepsy, leukemia, tension headache, postoperative pain, neck and back pain, anxiety, personal relationship, diagnosis
- ▶ **Conclusion:** "On the basis of the available evidence, I believe that if healing were a medication it would be on the market. This is especially so in view of the absence of side effects."

12

Prayer

- ▶ The National Center for Complementary and Alternative Medicine (NCCAM) in the United States has defined prayer as an active process of communicating with and appealing to a higher spiritual power.

Prayer and spirituality in health: ancient practices, modern science. CAM NIH 2005; 12: 1-5.

13

Prayer as medicine: how much have we learned?

- ▶ [Iantos M¹, Kiat H.](#) Prayer as medicine: how much have we learned? [Med J Aust.](#) 2007 May 21;186(10 Suppl):S51-3.
- ▶ **Prevalence of prayer**
 - ▶ The NCCAM examined the use of complementary and alternative medicine (CAM) in a population sample of 31 000 people in the US. **36% of people use CAM.**
 - ▶ **When prayer was included in the definition of CAM, statistic increased to 62%.**
 - ▶ 43% of the respondents used prayer for their own health
 - ▶ 24% sought the prayer of others
 - ▶ 19% participated in prayer groups that focused on personal health issues

14

Prayer as medicine: how much have we learned?

- ▶ Compared with other practices such as transcendental meditation, yoga, tai chi, qigong and reiki, prayer was by far the most popular alternative form of therapy.
- ▶ Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002. *Adv Data* 2004;

15

Prayer as medicine: how much have we learned?

- ▶ **Bias in current research on prayer:**
 - ▶ Many of the early studies reflect a positive bias in research design in which the efficacy of prayer was often judged only on the basis of predefined positive outcomes, with no provision made for negative ones.
 - ▶ Such bias may reflect a cultural belief in a benevolent God, but limits outcomes to those that appear to be humanly desirable.
 - ▶ One recent study using rigorous methodology reported negative findings on the therapeutic effects of intercessory prayer and illustrates the need for nonbiased experimental designs.

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Prayer as medicine: how much have we learned?

- ▶ **Possible Mechanisms:**
 - ▶ Relaxation Response
 - ▶ Placebo
 - ▶ Physiological response to positive emotions
 - ▶ Channel for supernatural intervention

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Prayer as medicine: how much have we learned?

- ▶ **Conclusion:**
 - ▶ While prayer continues to be a prevalent practice, scientific research on the health benefits of prayer is still in its infancy.
 - ▶ To gain a clearer understanding of why people derive health benefits from prayer, future studies need to identify the unique markers that differentiate prayer from other non-spiritual practices.
 - ▶ Researchers must also accept that some aspects of prayer may not be transparent to scientific investigation and may go beyond the reach of science.
 - ▶ In the clinical context, prayer should not be specifically prescribed or seen as a substitute for medical treatment, but should be recognized as an important resource for coping with pain and illness and improving health and general wellbeing.

18

Intercessory prayer for the alleviation of ill health
(Review)

- ▶ Roberts L, Ahmed I, Hall S, Sargent C, Adams C. Intercessory Prayer for ill Health: A Systematic Review. *Complementary Medicine Research*. 1998;5(1):82-86.
- ▶ Objectives:
 - ▶ To review the effects of intercessory prayer as an additional intervention for people with health problems already receiving routine health care.
- ▶ Search methods:
 - ▶ We systematically searched ten relevant databases including MEDLINE and EMBASE

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Intercessory prayer for the alleviation of ill health
(Review)

- ▶ Selection criteria:
 - ▶ We included any randomized trial comparing personal, focused, committed and organized intercessory prayer, with those interceding holding some belief that they are praying to God or a god versus any other intervention. This prayer could be offered on behalf of anyone with health problems.
- ▶ Data collection and analysis:
 - ▶ We extracted data independently and analyzed it on an intention to treat basis, where possible. We calculated, for binary data, the fixed effect relative risk (RR), their 95% confidence intervals (CI).

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Intercessory prayer for the alleviation of ill health
(Review)

- ▶ Main results:
 - ▶ Ten studies are included in this review (7646 patients).
 - ▶ For the comparison of intercessory prayer plus standard care versus standard care alone, overall there was no clear effect of intercessory prayer on death (5 RCTs, n=3389, random-effects RR 1.00 CI 0.74 to 1.36).
 - ▶ For general clinical state there was also no significant difference between groups (5 RCTs, n=2705, RR intermediate or bad outcome. (0.98 CI 0.86 to 1.11). Four studies found no effect for re-admission to Coronary Care Unit (4 RCTs, n=2644, RR 1.00 CI 0.77 to 1.30).
 - ▶ Two other trials found intercessory prayer had no effect on re-hospitalisation (2 RCTs, n=1155, RR 0.93 CI 0.71 to 1.22).

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Intercessory prayer for the alleviation of ill health
(Review)

- ▶ **Authors' conclusions:**
 - ▶ These findings are equivocal and, **although some of the results of individual studies suggest a positive effect of intercessory prayer, the majority do not and the evidence does not support a recommendation either in favor or against the use of intercessory prayer.**
 - ▶ **We are not convinced that further trials of this intervention should be undertaken and would prefer to see any resources available for such a trial used to investigate other questions in health care.**

22

Positive Therapeutic Effects of Intercessory Prayer in a
Coronary Care Unit Population

- ▶ **BYRD R. Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population. Southern Medical Journal. 1988;81(7):826-829.**
- ▶ **To evaluate the effects of IP in a coronary care unit (CCU) population, a prospective randomized double-blind protocol was followed.**
- ▶ **Over ten months, 393 patients admitted to the CCU were randomized, after signing informed consent, to an intercessory prayer group (192 patients) or to a control group (201 patients).**
- ▶ **While hospitalized, the first group received IP by participating Christians praying outside the hospital; the control group did not. At entry, chi-square and stepwise logistic analysis revealed no statistical difference between the groups.**

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Positive Therapeutic Effects of Intercessory Prayer in a
Coronary Care Unit Population

- ▶ **After entry, all patients had follow-up for the remainder of the admission.**
- ▶ **The IP group subsequently had a significantly lower severity score based on the hospital course after entry (P less than .01). Multivariate analysis separated the groups on the basis of the outcome variables (P less than .0001).**
- ▶ **The control patients required ventilatory assistance, antibiotics, and diuretics more frequently than patients in the IP group.**
- ▶ **These data suggest that intercessory prayer to the Judeo-Christian God has a beneficial therapeutic effect in patients admitted to a CCU.**

24

Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized trial

- ▶ **Cha, KJ, With DP** Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized trial. *J Reprod Med.* 2001 Sep;46(9):781-7
- ▶ **OBJECTIVE:** To assess the potential effect of intercessory prayer (IP) on pregnancy rates in women being treated with in vitro fertilization-embryo transfer (IVF-ET).
- ▶ **STUDY DESIGN:** Prospective, double-blind, randomized clinical trial in which patients and providers were not informed about the intervention.
- ▶ **Statisticians and investigators were masked** until all the data had been collected and clinical outcomes were known.

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Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized trial

- ▶ The setting was an IVF-ET program at Cha Hospital, Seoul, South Korea. IP was carried out by prayer groups in the United States, Canada and Australia. The investigators were at a tertiary medical center in the United States.
- ▶ The patients were **219 women** aged 26-46 years who were consecutively treated with IVF-ET over a four-month period.
- ▶ **Randomization** was performed after stratification of variables in two groups: **distant IP vs. no IP.**
- ▶ **The clinical pregnancy rates in the two groups were the main outcome measure.**

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Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized trial

- ▶ **RESULTS:**
- ▶ **After clinical pregnancies were known, the data were unmasked to assess the effects of IP** after assessment of multiple comparisons in a log-linear model.
- ▶ **The IP group had a higher pregnancy rate as compared to the no-IP rate (50% vs. 26%, P = .0013). The IP group showed a higher implantation rate (16.3% vs. 8%, P = .0005). Observed effects were independent of clinical or laboratory providers and clinical variables.**
- ▶ **CONCLUSION:**
- ▶ **A statistically significant difference was observed for the effect of IP on the outcome of IVF-ET, though the data should be interpreted as preliminary.**

27

Meditation and Mindfulness

- ▶ **Meditation:**
 - ▶ Training one's attention or awareness to bring mental processes under voluntary control, of which there are various types.
- ▶ **Mindfulness:**
 - ▶ The practice of giving complete and non-judgmental attention to one's present experience.

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Meditation and Mindfulness

- ▶ **More abundant with many positive outcomes. Some Examples:**

▶ Stress reduction	Inflammation
▶ Acute and Chronic Pain	Depression
▶ Coronary Heart Disease	Hypertension
▶ Metabolic Syndrome	Cardiovascular Risk Reduction
▶ Immune function	Low Back Pain
▶ Asthma	
▶ Prevention of Burnout in Care Givers and Health Care Providers	
▶ Quality of Life in Severe and Chronic Conditions	

29

Workplace based mindfulness practice and inflammation:
A randomized trial

- ▶ Malarkey W, Jarjoura D, Klatt M. Workplace based mindfulness practice and inflammation: A randomized trial. *Brain, Behavior, and Immunity*. 2013;27:145-154.
- ▶ **Low Dose Mindfulness-Based Intervention:** reduces the time committed to meetings and formal mindfulness practice, sessions during the workday
- ▶ **Controlled Randomized Trial of university faculty and staff (n = 186)** with elevated CRP level, >3.0 mg/ml and had or at risk for cardiovascular disease. Designed to evaluate if MBI-Hd could produce a greater decrease in CRP, IL-6 and cortisol than an active control group receiving a lifestyle education program
- ▶ 2 month intervention

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**Workplace based mindfulness practice and inflammation:
A randomized trial**

- ▶ MBI-Id Significantly **enhanced mindfulness by 2-months and was maintained for up to a year when compared to the education control.**
- ▶ **No significant changes** were noted between interventions in **cortisol, IL-6 levels or self-reported measures of perceived stress, depression and sleep quality at 2-months.**
- ▶ Although **not statistically significant** ($p = .08$), the **CRP level at 2-months was one mg/ml lower in the MBI-Id group than in the education control group, which may have clinical significance**

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**Workplace based mindfulness practice and inflammation:
A randomized trial**

- ▶ **A larger MBI-Id effect on CRP** (as compared to control) occurred among **participants who had a baseline BMI <30 (-2.67 mg/ml) than for those with BMI >30 (-0.18 mg/ml).**
- ▶ **Conclusion: that MBI-Id should be more fully investigated as a low-cost self-directed complementary strategy for decreasing inflammation**
- ▶ **Seems most promising for non-obese subjects.**

Malarkey W, Jarjoura D, Klatt M. Workplace based mindfulness practice and inflammation: A randomized trial. Brain, Behavior, and Immunity. 2013;27:145-154.

32

Effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects With Coronary Heart Disease

- ▶ Paul-Labrador M, Polk D, Dwyer J, Velasquez I, Nidich S, Rainforth M et al. Effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects With Coronary Heart Disease. Archives of Internal Medicine. 2006;166(11):1218.
- ▶ **Background:**
 - ▶ **The metabolic syndrome is thought to be a contributor to coronary heart disease (CHD)**
 - ▶ **Components of the syndrome have been identified as possible therapeutic targets.**
 - ▶ **Previous data implicate neurohumoral activation related to psychosocial stress as a contributor to the metabolic syndrome.**
 - ▶ **The aim of this study was to evaluate the efficacy of transcendental meditation (TM) on components of the metabolic syndrome and Coronary Heart Disease.**

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Effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects With Coronary Heart Disease

- ▶ **Methods:**
- ▶ A **randomized, placebo controlled clinical trial of 16 weeks of TM or active control treatment (health education)**, matched for frequency and time, at an academic medical center in a total of **103 subjects with stable CHD**.
- ▶ Main outcome measures included **blood pressure, lipoprotein profile, and insulin resistance** determined by homeostasis model assessment (calculated as follows: **fasting plasma glucose level** [in milligrams per deciliter], **fasting plasma insulin level** [in microunits per milliliter]) $0.0552/22.5$; **endothelial function** measured by **brachial artery reactivity testing**; and **cardiac autonomic system activity** measured by **heart rate variability**.

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Effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects With Coronary Heart Disease

- ▶ **Results:**
- ▶ The **TM group had beneficial changes in adjusted systolic blood pressure, insulin resistance and heart rate variability** compared with the health education group, respectively. **There was no effect of brachial artery reactivity testing.**
- ▶ **Conclusions:**
- ▶ Use of **TM for 16 weeks in CHD patients improved blood pressure and insulin resistance components of the metabolic syndrome as well as cardiac autonomic nervous system tone** compared with a control group receiving health education. **These results suggest that TM may modulate the physiological response to stress and improve CHD risk factors, which may be a novel therapeutic target for the treatment of CHD.**

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Meditation and Cardiovascular Risk Reduction: A Scientific Statement From the American Heart Association

- ▶ **Meditation and Cardiovascular Risk Reduction: A Scientific Statement From the American Heart Association.** Journal of the American Heart Association. 2019;8(2).
- ▶ Despite numerous advances in the prevention and treatment of atherosclerosis, **cardiovascular disease remains a leading cause of morbidity and mortality. Novel and inexpensive interventions that can contribute to the primary and secondary prevention of cardiovascular disease are of interest.**
- ▶ Numerous studies have reported on the benefits of meditation. Meditation instruction and practice is **widely accessible and inexpensive** and may thus be a **potential attractive cost-effective adjunct to more traditional medical therapies.**
- ▶ Accordingly, this American Heart Association scientific statement **systematically reviewed the data on the potential benefits of meditation on cardiovascular risk.**

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Meditation and Cardiovascular Risk Reduction: A Scientific Statement From the American Heart Association

- ▶ Neurophysiological and neuroanatomical studies demonstrate that meditation can have long-standing effects on the brain, which provide some biological plausibility for beneficial consequences on the physiological basal state and on cardiovascular risk.
- ▶ Studies of the effects of meditation on cardiovascular risk have included those investigating physiological response to stress, smoking cessation, blood pressure reduction, insulin resistance and metabolic syndrome, endothelial function, inducible myocardial ischemia, and primary and secondary prevention of cardiovascular disease.
- ▶ Overall, studies of meditation suggest a possible benefit on cardiovascular risk, although the overall quality and, in some cases, quantity of study data are modest.

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Meditation and Cardiovascular Risk Reduction: A Scientific Statement From the American Heart Association

- ▶ Given the low costs and low risks of this intervention, meditation may be considered as an adjunct to guideline-directed cardiovascular risk reduction by those interested in this lifestyle modification, with the understanding that the benefits of such intervention remain to be better established.
- ▶ Further research on meditation and cardiovascular risk is warranted. Such studies, to the degree possible, should utilize randomized study design, be adequately powered to meet the primary study outcome, strive to achieve low drop-out rates, include long-term follow-up, and be performed by those without inherent bias in outcome.

38

Mindfulness meditation and the immune system: a systematic review of randomized controlled trials

- ▶ Black D, Slavich G. Mindfulness meditation and the immune system: a systematic review of randomized controlled trials. *Annals of the New York Academy of Sciences*. 2016;1373(1):13-24.
- ▶ The first comprehensive review of randomized controlled trials examining the effects of mindfulness meditation on immune system parameters
- ▶ Specific focus on five outcomes: (1) circulating and stimulated inflammatory proteins, (2) cellular transcription factors and gene expression, (3) immune cell count, (4) immune cell aging and (5) antibody response.
- ▶ This analysis revealed substantial heterogeneity across studies with respect to patient population, study design, and assay procedures.

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Mindfulness meditation and the immune system: a systematic review of randomized controlled trials

- ▶ The findings suggest **possible effects of mindfulness meditation on specific markers of inflammation, cell-mediated immunity and biological aging.**
- ▶ These results are tentative and require further replication. On the basis of this analysis, we describe the limitations of existing work and suggest possible avenues for future research.
- ▶ **Mindfulness meditation may be salutogenic for immune system dynamics**, but additional work is needed to examine these effects.

40

Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis

- ▶ Hilton L, Hempel S, Ewing B, Apaydin E, Xenakis L, Newberry S et al. Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis. *Annals of Behavioral Medicine*. 2016;51(2):199-213.
- ▶ **Purpose**
 - ▶ To synthesize evidence on efficacy and safety of mindfulness meditation interventions for the treatment of chronic pain in adults.
- ▶ **Method**
 - ▶ A systematic review on randomized controlled trials (RCTs) with meta-analyses using the Hartung-Knapp-Sidik-Jonkman method for random-effects models.
 - ▶ Quality of evidence was assessed using the GRADE approach. **Outcomes included pain, depression, quality of life, and analgesic use.**

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Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis

- ▶ **Results**
 - ▶ Thirty-eight RCTs met inclusion criteria; seven reported on safety.
 - ▶ Low-quality evidence that mindfulness meditation is associated with a small decrease in pain compared with all types of controls in 30 RCTs.
 - ▶ Statistically significant effects were also found for depression symptoms and quality of life.
- ▶ **Conclusions**
 - ▶ Mindfulness meditation improves pain and depression symptoms and quality of life
 - ▶ Additional well-designed, rigorous, and large-scale RCTs are needed to decisively provide estimates of the efficacy of mindfulness meditation for chronic pain.

42

A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals

- ▶ Dharmawardene M, Givens J, Wachholtz A, Makowski S, Tjia J. A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals. *BMJ Supportive & Palliative Care*. 2015;6(2):160-169.
- ▶ Background
 - ▶ Burnout, stress and anxiety have been identified as areas of concern for informal caregivers and health professionals.
 - ▶ Meditation interventions are gaining acceptance as tools to improve well-being in a variety of clinical contexts, however their effectiveness as an intervention for caregivers remains unknown.
- ▶ Aim
 - ▶ Explore the effect of meditative intervention on physical and emotional markers of well-being as well as job satisfaction and burnout.

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A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals

- ▶ Design
 - ▶ Systematic review of randomized clinical trials and pre-post intervention studies with meditative interventions for caregivers.
- ▶ Data Sources
 - ▶ PubMed, EMBASE, CINAHL and PsycINFO were searched up to November 2013. Of 1561 abstracts returned, 68 studies were examined in full text with 27 eligible for systematic review.

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A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals

- ▶ Results
 - ▶ Controlled trials of informal caregivers showed statistically significant improvement in depression, anxiety, stress and self-efficacy at an average of 8 weeks following intervention initiation.
 - ▶ Controlled trials of health professionals showed improved emotional exhaustion, personal accomplishment and life satisfaction an average of 8 weeks following intervention initiation.
- ▶ Conclusions
 - ▶ Meditation provides a small to moderate benefit for informal caregivers and health professionals for stress reduction, but more research is required to establish effects on burnout and caregiver burden.

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Empathy and Compassion

- ▶ Empathy:
 - ▶ Ability to imagine oneself in the condition of another; a vicarious participation in another's emotions.
- ▶ Compassion:
 - ▶ A deep sympathy for the sorrows of others, with an urge to alleviate their pain
 - ▶ Sympathy: a general kinship with another's feelings no matter of what kind
- ▶ Good Resource: Stanford Center for Compassion and Altruism Research

46

Perception of Empathy in the Therapeutic Encounter:
Effects on the Common Cold

- ▶ Rakei D, Barrett B, Zhang Z, Hoeft T, Chewing B, Marchand L et al. Perception of empathy in the therapeutic encounter: Effects on the common cold. Patient Education and Counseling. 2011;85(3):390-397.
- ▶ Objective: To evaluate the effects of patient-practitioner interaction on the severity and duration of the common cold.
- ▶ Methods: Randomized controlled trial of 719 patients with new cold onset
 - ▶ Randomized to three groups: no patient-practitioner interaction, "standard" interaction or an "enhanced" interaction.
 - ▶ Cold severity was assessed twice daily. Patients randomized to practitioner visits used the Consultation and Relational Empathy (CARE) measure to rate clinician empathy. Interleukin 8 (IL-8) and neutrophil counts were obtained from nasal wash at baseline and 48 hours later.

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Perception of Empathy in the Therapeutic Encounter:
Effects on the Common Cold

- ▶ Results: Patients' perceptions of the clinical encounter were associated with reduced cold severity and duration.
 - ▶ Encounters rated perfect on the CARE score had reduced severity (Perfect: 223, sub-perfect: 271, p=0.04) and duration (Perfect: 5.89 days, sub-perfect: 7.00 days, p=0.003). CARE scores were also associated with a more significant change in IL-8 (Perfect: mean IL-8 change: 1586, sub-perfect: 72, p=0.02) and neutrophil count (Perfect: 49, sub-perfect: 12, p=0.09).
- ▶ Conclusions: When patients perceive clinicians as empathetic, rating them perfect on the CARE tool, the severity, duration and objective measures (IL-8 and neutrophils) of the common cold significantly change.
- ▶ Practice Implications: This study helps us understand the importance of the perception of empathy in a therapeutic encounter.

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Acts of kindness reduce depression in individuals low on agreeableness

- ▶ Mongrain, M., Barnes, C., Barnhart, R., & Zalan, L. B. (2018). Acts of kindness reduce depression in individuals low on agreeableness. *Translational Issues in Psychological Science, 4*(3), 323-334.
- ▶ **Low Agreeableness** is a personality dimension involving **hostility, antagonistic behaviors, and the propensity for conflict.**
- ▶ Within the repertoire of positive psychology interventions, **the practice of compassion may be a particularly redemptive for these individuals** given their deficits in this domain.
- ▶ **"Helping"** has previously been found to boost momentary positive affect in non-altruists (Conway, Rogelberg, & Pitts, 2009).

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Acts of kindness reduce depression in individuals low on agreeableness

- ▶ **Hypothesis:** individuals low on trait Agreeableness would report greater benefits from compassion interventions, including reductions in depression and increases in life satisfaction.
- ▶ **Two compassion exercises were investigated:** (a) a loving-kindness meditation (LKM) exercise, and (b) an acts of kindness exercise. **Control:** journaling of interpersonal relationships.
- ▶ Participants were drawn from an international sample (N = 648) and were randomly assigned to one of the 3 conditions.
- ▶ All groups completed their exercise online every other day for 3 weeks.

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Acts of kindness reduce depression in individuals low on agreeableness

- ▶ Trait Agreeableness was assessed at baseline with the Big Five Inventory (John & Srivastava, 1999).
- ▶ Measures of depression and life satisfaction were administered at baseline, at post test, and 1 and 2 months later at follow-up assessments.
- ▶ Findings showed that participants in both experimental conditions (Loving Kindness Meditation and Acts of Kindness) reported significant reductions in depression at post test compared with those in the control condition.
- ▶ Those low on Agreeableness, doing acts of kindness, reported the greatest reductions in depression, and increases in life satisfaction at 2 months, compared with those in the LKM and control conditions.

51

Energy Healing and Distant Healing

- ▶ The concept of subtle energy and methods of its use for healing has been described by numerous cultures for thousands of years. These **vital energy concepts** (which include the Indian term **prana**, the Chinese term **chi**, and the Japanese term **qi**) all refer to so-called **subtle or nonphysical energies that permeate existence and have specific effects on the body-mind of all conscious beings**. Similar concepts in the West are reflected in the concepts of **Holy spirit**, or **spirit**, and can be dated back to writings in the Old Testament as well as the practice of **laying on of hands**.
- ▶ MacNutt F. Healing. Notre Dame: Ave Maria Press; 1974.

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Energy Healing and Distant Healing

- ▶ **Distant healing intention (DHI)** may be defined as **"a compassionate mental act intended to improve the health and well-being of another person at a distance."**
 - ▶ Sicher FTE, Moore D 2nd, Smith HS. A randomized double-blind study of the effect of distant healing in a population with advanced AIDS. Report of a small scale study. The Western Journal of Medicine. 1998; 169:353-63.
- ▶ **Terms used to describe Distant Healing interventions include intercessory prayer, spiritual healing, non-directed prayer, intentionality, energy healing, shamanic healing, non-local healing, non-contact Therapeutic Touch, and Reiki.**
 - ▶ Each of these methods involves a distinct theoretical, theological, cultural, or pragmatic approach toward healing through the application of one person's intention towards another.
 - ▶ Schitzz M, Hoef H, Eikenaa L, Vieten C, Radin D. Distant Healing of Surgical Wounds: An Exploratory Study. EXPLORE. 2012;8(4):223-230.

53

**Biofield Therapies: Helpful or Full of Hype?
A Best Evidence Synthesis**

- ▶ Jain S, Mills P. Biofield Therapies: Helpful or Full of Hype? A Best Evidence Synthesis. International Journal of Behavioral Medicine. 2009;17(1):1-16.
- ▶ **Biofield therapies (such as Reiki, therapeutic touch, and healing touch) are complementary medicine modalities that remain controversial and are utilized by a significant number of patients, with little information regarding their efficacy.**
- ▶ **Purpose:** This **systematic review examines 66 clinical studies** with a variety of biofield therapies in different patient populations.
- ▶ **Method:** We conducted a **quality assessment as well as a best evidence synthesis** approach to examine evidence for biofield therapies in **relevant outcomes for different clinical populations**.

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Biofield Therapies: Helpful or Full of Hype?
A Best Evidence Synthesis

- ▶ **Results:** Studies overall are of **medium quality**, and generally meet minimum standards for **validity of inferences**. Biofield therapies show **strong evidence for reducing pain intensity** in pain populations, and **moderate evidence for reducing pain intensity hospitalized and cancer populations**. There is **moderate evidence for decreasing negative behavioral symptoms in dementia** and **moderate evidence for decreasing anxiety for hospitalized populations**. There is **equivocal evidence** for biofield therapies' effects on **fatigue and quality of life for cancer patients**, as well as for **comprehensive pain outcomes and affect in pain patients** and for **decreasing anxiety in cardiovascular patients**.
- ▶ **Conclusion:** There is a need for **further high-quality studies** in this area. Implications and future research directions are discussed.

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Distant Healing Intention therapies: An overview of the scientific evidence

- ▶ Radin D, Schlitz M, Baur C. Distant Healing Intention Therapies: An Overview of the Scientific Evidence. *Global Advances in Health and Medicine*. 2015;4(1_suppl):gahmj.2015.012.
- ▶ This article provides a **broad overview of "distant healing intention" (DHI) therapies**, ie, **intentional healing modalities claimed to transcend the usual constraints of distance through space or time**.
- ▶ We provide a **summary of previous reviews and meta-analyses** that have explored a **diverse array of DHI modalities, outcome measures, and experimental protocols**. While **some significant experimental effects have been observed**, the **evidence to date does not yet provide confidence in its clinical efficacy**.
- ▶ The purported **"nonlocal" nature of DHI** raises **significant methodological and theoretical challenges**. We recommend several avenues for **improving future research**.

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Distant Healing Intention therapies: An overview of the scientific evidence

- ▶ Theoretical speculations aside, **most experiments studying DHI have focused on a pragmatic question: Does it work?**
- ▶ There are **2 aspects to this question**.
 - ▶ The first is about proof of principle: **If person A and person B are strictly isolated by shielding, distance, or time, is there empirical evidence that A can affect B in any way?**
 - ▶ The second aspect is about DHI's efficacy as a healing therapy:
 - ▶ **Can A in fact heal B?**

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Distant Healing Intention therapies: An overview of the scientific evidence

- ▶ Proof-of-principle studies
- ▶ Been examined through 3 classes of experiments:
 - ▶ (1) mind-to-mind connections
 - ▶ (2) direct interactions between mind and matter
 - ▶ (3) laboratory analogs of DHI, known as experiments on "distant mental interactions with living systems" or DMILS.
- ▶ Hundreds of experiments in these 3 classes have been published and meta-analyzed. Cumulatively, they provide evidence that "Yes, A can affect B at a distance."
 - ▶ The effect sizes observed in these experiments tend to be small in magnitude, and it is not entirely clear that the interaction is causal in the classic sense of that term, but the correlations observed in controlled experiments have been independently and successfully repeated in laboratories around the world.

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Distant Healing Intention therapies: An overview of the scientific evidence

- ▶ The second question: **Can A in fact heal B?** Not a simple answer.
- ▶ Despite the continuing popularity of DHI as an alternative healing modality, when it comes to assessing clinical efficacy, high-quality experiments have so far failed to show reliable effects.
 - ▶ The contradiction between persistent popularity and lack of clinical effectiveness may be due on the one hand to some healers, in some contexts, who do seem to produce remarkable outcomes and on the other hand by conventional RCT (randomized clinical trial) protocols that may be incompatible with the nature of DHI phenomena.
 - ▶ Tools must match the requirements of the subject, and if the right tools are not available, then new ones must be devised. In other words, it is inadvisable to use a sledgehammer to study the surface structure of a soap bubble.

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Distant Healing Intention therapies: An overview of the scientific evidence

- ▶ Whether future clinical trials can be devised that more clearly reveal that efficacy remains to be seen.
- ▶ In sum, the implications of DHI for basic science epistemology and ontology and for pragmatic efforts to improve health and healing are vast, deep, and perennially intriguing.

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Conclusions

- ▶ There is evidence to support the use of these interventions, in conjunction with other indicated treatments.
 - ▶ Particularly given the lack of side effects and cost effectiveness.
- ▶ More high quality research needs to be done.
 - ▶ To demonstrate replicability
 - ▶ To investigate new applications
 - ▶ To investigate means to optimize these interventions.

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Conclusions

- ▶ The Vis Medicatrix Naturae
- ▶ As naturopathic doctors we rely on the fact that we have evolved to be self regulating and self healing, as long as we establish the conditions for health.
- ▶ A perennial question is, what is the source and mechanism of this evolution and ordering of life?
- ▶ One way to name it is The Vis Medicatrix Naturae, The Healing Power of Nature, which I define as the innate and ordered intelligence in all living organisms that orders our evolution, form and function, including self regulation and self healing.
- ▶ However, similar to the mystery of the source and mechanism of these spiritual therapies, the honest answer is, we don't know what it is... yet.

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Conclusions

- ▶ As we go forward, let us be bold and creative, but let us also be humble... We might adopt as a motto for this field the comment of astronomer-physicist Sir Arthur Eddington,
- ▶ "Something unknown is doing we don't know what."
 - ▶ "Healing Words" Larry Dossey, M.D.

▶ I say: "Let's do it!"

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Conclusions

May the Vis be with you.
