

Regenerative Health Programme

Role of Complementary Therapies, Self-Help Approaches and Health Coaching in:

Type 2 Diabetes



American Diabetes Association. **Standards of medical care in diabetes 2010.** *Diabetes Care.* 2010;33 (suppl 1):S11–S61. No abstract
http://care.diabetesjournals.org/content/33/Supplement_1/S4.full

Mann J et al. **Evidence-based nutritional approaches to the treatment and prevention of diabetes mellitus.** *Nutr Metab Cardiovasc Dis* (2004) 14: 373–394. No abstract
<http://www.dnsg-easd.org/info/general/Document/get/12/documentId/guida.pdf>

De Greef K et al. **The effects of a pedometer-based behavioral modification program with telephone support on physical activity and sedentary behavior in type 2 diabetes patients.** *Patient Education and Counseling*, 26 August 2010
Abstract

Objective Effectiveness of a behavioral modification program on physical activity (PA) and sedentary behavior in diabetes patients.
Methods Ninety-two patients were randomly assigned to an intervention or control group. The 24-weeks intervention consisted of a face-to-face session, pedometer and seven telephone follow-ups. Mean selection criteria were 35–75 years; 25–35kg/m²; ≤12% HbA1c, treated for type 2 diabetes; no PA limitations. PA and sedentary behavior were measured by pedometer, accelerometer and questionnaire over the short- (24 weeks) and intermediate- (1 year) term.
Results The intervention group increased their steps/day by 2744, their total PA by 23min/day ($p < 0.001$) and decreased their sedentary behavior by 23min/day ($p < 0.05$) post-intervention. After 1 year the intervention group still had an increase of 1872 steps/day, 11min/day total PA and a decrease of 12min/day in sedentary behavior ($p < 0.001$).
Conclusion This pedometer-based behavioral modification program with telephone support showed lasting positive effects on steps/day, PA and sedentary behavior.
<http://www.pec-journal.com/article/S0738-3991%2810%2900411-8/abstract>

Janette Moran, Hilary Bekker, Gary Latchford. **Everyday use of patient-centred, motivational techniques in routine consultations between doctors and patients with diabetes.** *Patient Education and Counseling* - November 2008 (Vol. 73, Issue 2, Pages 224-231, DOI: 10.1016/j.pec.2008.07.006)
Abstract

Objective Facilitating lifestyle change and improved self-management are important aspects of diabetes treatment. Previous research shows motivational, patient-centred approaches are more effective at this than traditional, didactic approaches. This study

explores the degree to which doctors with no previous training in motivational techniques employ these methods to affect behaviour change in routine consultations.

Methods A cross-sectional design was employed. Forty-four routine consultations with nine physicians were tape-recorded, of which nineteen focussed on behaviour change; patient questionnaires assessed patient demographics, intention to self-manage and satisfaction with consultation. Physician behaviour was coded for use of motivational, behaviour change techniques, patient-centeredness and other verbal communication variables; patient communication was also assessed.

Results Lifestyle issues were raised in 43% of consultations but few motivational strategies were employed; 10% of physicians' communication was patient-centred. An association was found between physicians' use of patient-centred strategies and patients expressing views ($r=.44$, $p<.05$). Higher patient satisfaction with the consultation was related to physician partnership-building ($r=.37$, $p\leq.05$) and patients asking questions ($r=-.31$, $p\leq.05$). Familiarity between doctor and patient was associated with more physician recommendations and directives ($r=.35$, $p\leq.05$) and information giving ($r=.30$, $p\leq.05$), and more assertive responses by the patient ($r=.31$, $p\leq.05$).

Conclusion Effective communication strategies related to behaviour change were not used routinely in diabetes consultations in the clinic studied. More patient-centred approaches were associated with higher indicators of patient satisfaction.

<http://www.pec-journal.com/article/S0738-3991%2808%2900334-0/abstract>

Aune D, Ursin G, Veierod MB. **Meat consumption and the risk of type 2 diabetes: a systematic review and meta-analysis of cohort studies.** *Diabetologia* 2009 Nov;52(11):2277-87.

Abstract

Aims/hypothesis Diet is thought to play an important role in the aetiology of type 2 diabetes. Previous studies have found positive associations between meat consumption and the risk of type 2 diabetes, but the results have been inconsistent. We conducted a systematic review and meta-analysis of cohort studies of meat consumption and type 2 diabetes risk.

Methods We searched several databases for cohort studies on meat consumption and type 2 diabetes risk, up to December 2008. Summary relative risks were estimated by use of a random-effects model.

Results We identified 12 cohort studies. The estimated summary RR and 95% confidence interval of type 2 diabetes comparing high vs low intake was 1.17 (95% CI 0.92–1.48) for total meat, 1.21 (95% CI 1.07–1.38) for red meat and 1.41 (95% CI 1.25–1.60) for processed meat. There was heterogeneity amongst the studies of total, red and processed meat which, to some degree, was explained by the study characteristics.

Conclusions/interpretation These results suggest that meat consumption increases the risk of type 2 diabetes. However, the possibility that residual confounding could explain this association cannot be excluded.

<http://www.springerlink.com/content/v1h7374736t010t0/>

Cappuccio FP, D'Elia L, Strazzullo P, Miller MA. **Quantity and quality of sleep and incidence of type 2 diabetes: a systematic review and meta-analysis.** *Diabetes Care* 2010 Feb;33(2):414-20.

Abstract

OBJECTIVE: To assess the relationship between habitual sleep disturbances and the incidence of type 2 diabetes and to obtain an estimate of the risk.

RESEARCH DESIGN AND METHODS: We conducted a systematic search of publications using MEDLINE (1955-April 2009), EMBASE, and the Cochrane Library and

manual searches without language restrictions. We included studies if they were prospective with follow-up >3 years and had an assessment of sleep disturbances at baseline and incidence of type 2 diabetes. We recorded several characteristics for each study. We extracted quantity and quality of sleep, how they were assessed, and incident cases defined with different validated methods. We extracted relative risks (RRs) and 95% CI and pooled them using random-effects models. We performed sensitivity analysis and assessed heterogeneity and publication bias.

RESULTS: We included 10 studies (13 independent cohort samples; 107,756 male and female participants, follow-up range 4.2-32 years, and 3,586 incident cases of type 2 diabetes). In pooled analyses, quantity and quality of sleep predicted the risk of development of type 2 diabetes. For short duration of sleep (< or =5-6 h/night), the RR was 1.28 (95% CI 1.03-1.60, P = 0.024, heterogeneity P = 0.015); for long duration of sleep (>8-9 h/night), the RR was 1.48 (1.13-1.96, P = 0.005); for difficulty in initiating sleep, the RR was 1.57 (1.25-1.97, P < 0.0001); and for difficulty in maintaining sleep, the RR was 1.84 (1.39-2.43, P < 0.0001).

CONCLUSIONS: Quantity and quality of sleep consistently and significantly predict the risk of the development of type 2 diabetes. The mechanisms underlying this relation may differ between short and long sleepers.

<http://www.ncbi.nlm.nih.gov/pubmed/19910503>

Esposito K, Maiorino MI, Ceriello A, Giugliano D. **Prevention and control of type 2 diabetes by Mediterranean diet: A systematic review.** Diabetes Research & Clinical Practice 2010;89(2):97-102. Abstract only

Abstract

We conducted a systematic review of the available studies that assessed the effect of a Mediterranean diet in type 2 diabetes. We searched publications up to 30 November 2009. Seventeen studies were included. Two large prospective studies report a substantially lower risk (83% and 35%, respectively) of type 2 diabetes in healthy people or in post-infarct patients with the highest adherence to a Mediterranean diet. Five randomized controlled trials have evaluated the effects of a Mediterranean diet, as compared with other commonly used diets, on indices of glycaemic control in subjects with type 2 diabetes. Improvement of fasting glucose and HbA1c levels was greater with a Mediterranean diet and ranged from 7 to 40mg/dl for fasting glucose, and from 0.1 to 0.6% for HbA1c. No trial reported worsening of glycaemic control with a Mediterranean diet. Two controlled trials in a secondary prevention setting demonstrated that post-infarct patients, including diabetic patients, had cardiovascular benefits from a Mediterranean diet. The evidence so far accumulated suggests that adopting a Mediterranean diet may help prevent type 2 diabetes, and also improve glycaemic control and cardiovascular risk in persons with established diabetes.

<http://www.ncbi.nlm.nih.gov/pubmed/20546959>

Qin L, Knol MJ, Corpeleijn E, Stolk RP. **Does physical activity modify the risk of obesity for type 2 diabetes: a review of epidemiological data.** European Journal of Epidemiology 2010;25(1):5-12.

Abstract

Obesity and physical inactivity are both risk factors for type 2 diabetes. Since they are strongly associated, it has been suggested that they might interact. In this study, we summarized the evidence on this interaction by conducting a systematic review. Two types of interaction have been discerned, statistical and biological interaction, which could give different results. Therefore, we calculated both types of interaction for the studies in our review. Cohort studies, published between 1999 and 2008, that

investigated the effects of obesity and physical activity on the risk of type 2 diabetes were included. We calculated both biological and statistical interaction in these studies. Eight studies were included of which five were suitable to calculate interaction. All studies showed positive biological interaction, meaning that the joint effect was more than the sum of the individual effects. However, there was inconsistent statistical interaction; in some studies the joint effect was more than the product of the individual effects, in other studies it was less. The results show that obesity and physical inactivity interact on an additive scale. This means that prevention of either obesity or physical inactivity, not only reduces the risk of diabetes by taking away the independent effect of this factor, but also by preventing the cases that were caused by the interaction between both factors. Furthermore, this review clearly showed that results can differ depending on what method is used to assess interaction.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2807936/?tool=pubmed>

Walker KZ, O'Dea K, Gomez M, Girgis S, Colagiuri R. **Diet and exercise in the prevention of diabetes.** Journal of Human Nutrition & Dietetics 2010 Aug;23(4):344-352. Abstract only

Abstract

Background: Individuals with impaired fasting glucose or impaired glucose tolerance are at high risk of progression to type 2 diabetes. Lifestyle modification through change to diet and exercise habit has considerable potential to prevent or delay the onset of this disease.

Methods: A systematic literature search was undertaken of Medline, EMBASE, the Cochrane library and the Cumulative Index to Nursing and Allied Health Literature for journal articles relevant to the question of whether type 2 diabetes can be prevented by lifestyle change.

Results: Four cohort studies in a total of 4864 high risk individuals followed for a period of 2.5–6 years were identified. These showed that lifestyle change may reduce the incidence of type 2 diabetes by 28–59%. Moreover, follow-up studies also indicate that diabetes incidence rates continue to be depressed many years after the discontinuation of a lifestyle intervention. Evidence from a meta-analysis confirms this evidence and suggests that it would be necessary to treat 6.4 (95% confidence interval 5.0–8.4) individuals to prevent or delay one case of diabetes through lifestyle intervention. An examination of weight loss diets (low fat, high protein or Mediterranean) suggests each may be effective but each has limitations requiring care in food selection. Evidence also suggests that the maintenance of weight loss also requires regular exercise with an additional expenditure of approximately 8.4 MJ week⁻¹ (2000 kcal week⁻¹).

Conclusions: Diabetes can be prevented by lifestyle change. The challenge is to develop public health approaches to support individuals with respect to incorporating the lifestyle changes needed to reduce the risk of diabetes into their everyday life.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-277X.2010.01061.x/abstract>

Yuen A, Sugeng Y, Weiland TJ, Jelinek GA. **Lifestyle and medication interventions for the prevention or delay of type 2 diabetes mellitus in prediabetes: a systematic review of randomised controlled trials.** Australian and New Zealand Journal of Public Health 2010 Apr;34(2):172-178. Abstract only

Abstract

Objective: To assess lifestyle and pharmacological interventions aiming to delay type 2 diabetes mellitus (T2DM) in prediabetes.

Methods: We searched the Cochrane Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, PsycINFO, Web of Science, BIOSIS and LILACS databases, examined

reference lists and contacted authors. We included randomised controlled trials (RCTs) on both lifestyle and medication interventions in prediabetes. These studies were at least 12 month duration and aimed to delay T2DM.

Results: Four studies investigating lifestyle and medication with a total of 5,196 participants were identified. There was a high risk of bias in the studies and the interventions utilised varied considerably; thus, meta-analysis was not undertaken. The comparison between lifestyle and medication interventions was largely dependent on the intensity of the lifestyle program while we could not adequately assess their effects on cardiovascular morbidity. Adverse events with metformin and acarbose were common. Conclusion: There is substantial evidence that intensive lifestyle programs and medications delay T2DM in impaired glucose tolerance though it remains unclear which is more effective.

Implications: Both interventions seem to be able to delay T2DM. However, both have issues with adherence and side effects and more RCTs are required.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2010.00503.x/abstract>

Asthma

Kealoha MK. **What's new in alternative therapies for asthmatic children?** Journal of Community Health Nursing. 2009; 26(4):198-205.

Abstract

Nurses require current information about popular complementary and alternative medicine for pediatric asthma. This integrative review searched scientific literature in PubMed and WEB of Science from 2004 to 2009 via key terms: asthma complementary medicine, nursing complementary pediatric asthma, asthma herbal, and herbal pediatric asthma. Nine journal articles met the inclusion criteria of containing data collection and analysis for biologically based therapies for pediatric asthma. Evidenced-based research on this focus topic is still in its initial stages. Two themes of maximizing the diet and augmenting conventional therapy with Traditional Chinese Medicine may serve as conduits of patient education.

<http://www.ncbi.nlm.nih.gov/pubmed/19866388>

Markham AW, Wilkinson JM. **Complementary and alternative medicines (CAM) in the management of asthma: an examination of the evidence.** J Asthma. 2004 Apr;41(2):131-9.

Abstract

Although individuals are using Complementary and Alternative Medical (CAM) therapies to help manage their asthma, there is no clear direction in the current guidelines for the use of CAM in asthma. This literature review undertakes to determine the current science regarding the use of CAM in asthma management. Electronic literature searched all EBM Reviews, Medline, OVID full text, and PubMed and National Complementary and Alternative Medication databases for Randomised Controlled Trials (RCT) published in English between 1997 and 2002 with keywords "asthma" and "complementary medicine" or "complementary therapy" or "alternative medicine" or "alternative therapy." Abstracts (N=197) were reviewed for inclusion in the review and duplicates discarded (N=65). Abstracts of non-RCT studies, review articles, and surveys were also discarded (N=66). Abstracts discussing environmental control measures and pharmaceutical alternatives to steroid therapy were discarded (N=9). The 15 final studies were grouped within three categories: mind-body and relaxation, manual therapies, and

diet and reviewed for statistical and clinical significance, suggesting some CAM therapies have shown minimally significant improvements in asthma quality of life (breathing exercises) or pulmonary function (relaxation) and immune function (relaxation and acupuncture) in select asthma populations. Although CAM therapy is being used in the management of asthma, these 15 studies show a tendency to little or no significant difference between placebo or sham therapy. This may be due, in part, to the enhanced placebo effect of sham therapies used as control and the small size of most studies. Although the changes in the immune function seen in two studies are provocative, these changes did not translate to changes in lung function. More research is needed to assist in determining the efficacy of CAM therapies in asthma management.
<http://www.ncbi.nlm.nih.gov/pubmed/15115165>

Allen S, Britton JR, Leonardi-Bee JA. **Association between antioxidant vitamins and asthma outcome measures: systematic review and meta-analysis.** *Thorax*. 2009; 64(7):610-9.

Abstract

BACKGROUND: Epidemiological studies suggest that dietary intake of vitamins A, C and E may be associated with the occurrence of asthma. A systematic review and meta-analysis was conducted in accordance with MOOSE guidelines to determine whether vitamins A, C and E, measured as dietary intakes or serum levels, are associated with asthma.

METHODS: MEDLINE, EMBASE, CINAHL, CAB abstracts and AMED (up to November 2007), conference proceedings and bibliographies of papers were searched to identify studies of asthma, wheeze or airway responsiveness in relation to intakes and serum concentrations of vitamins A, C and E. Pooled odds ratios (OR) or mean differences (MD) with 95% confidence intervals (CI) were estimated using random effects models. **RESULTS:** A total of 40 studies were included. Dietary vitamin A intake was significantly lower in people with asthma than in those without asthma (MD -82 microg/day, 95% CI -288 to -75; 3 studies) and in people with severe asthma than in those with mild asthma (MD -344 microg/day; 2 studies). Lower quantile dietary intakes (OR 1.12, 95% CI 1.04 to 1.21; 9 studies) and serum levels of vitamin C were also associated with an increased odds of asthma. Vitamin E intake was generally unrelated to asthma status but was significantly lower in severe asthma than in mild asthma (MD -1.20 microg/day, 95% CI -2.3 to -0.1; 2 studies).

CONCLUSIONS: Relatively low dietary intakes of vitamins A and C are associated with statistically significant increased odds of asthma and wheeze. Vitamin E intake does not appear to be related to asthma status.

<http://www.ncbi.nlm.nih.gov/pubmed/19406861>

Slader CA, Reddel HK, Jenkins CR, Armour CL, Bosnic-Anticevich SZ. **Complementary and alternative medicine use in asthma: who is using what?** *Respirology*. 2006, 11(4):373-87.

Abstract Consumer interest in complementary and alternative medicine (CAM) has grown dramatically in Western countries in the past decade. However, very few patients volunteer information about CAM use unless directly questioned by their health-care practitioner. Therefore, by being informed about the prevalence and modality of CAM use for asthma, as well as characteristics of users, health-care practitioners may be better able to identify patients who use CAM. In turn, this may facilitate proactive discussion and optimization of the patient's overall asthma management. This review aims to summarize the current knowledge about use of CAM by people with asthma, and

to assess the applicability of the available studies to the broader asthmatic population. Computerized literature searches were conducted on Medline, Embase, Cochrane and Allied and Complementary Medicine (AMED) databases from their inception to 13 April 2005. Search terms included: complementary medicine/therapies, alternative medicine/therapies and asthma. The bibliographies of accessible articles were searched for further papers. Seventeen studies have examined the use of CAM by people with asthma. The reported level of use for adults ranged from 4% to 79%, and for children from 33% to 89%. Among the most commonly used CAMs were: breathing techniques, herbal products, homeopathy and acupuncture. There is no strong evidence for effectiveness for any of these modalities. There is little consistency among available prevalence studies making conclusions difficult. Nevertheless, the high rates of CAM use reported in some studies indicate that CAM use should be taken into account when managing patients with asthma.
<http://www.ncbi.nlm.nih.gov/pubmed/16771907>

Obesity

Pollak K et al. **Physician Communication Techniques and Weight Loss in Adults: Project CHAT.** American Journal of Preventive Medicine, October 2010 (Vol. 39, Issue 4, Pages 321-328).

Background Physicians are encouraged to counsel overweight and obese patients to lose weight.

Purpose It was examined whether discussing weight and use of motivational interviewing techniques (e.g., collaborating, reflective listening) while discussing weight predicted weight loss 3 months after the encounter.

Methods Forty primary care physicians and 461 of their overweight or obese patient visits were audio recorded between December 2006 and June 2008. Patient actual weight at the encounter and 3 months after the encounter (n=426); whether weight was discussed; physicians' use of motivational interviewing techniques; and patient, physician, and visit covariates (e.g., race, age, specialty) were assessed. This was an observational study and data were analyzed in April 2009.

Results No differences in weight loss were found between patients whose physicians discussed weight or did not. Patients whose physicians used motivational interviewing-consistent techniques during weight-related discussions lost weight 3 months post-encounter; those whose physician used motivational interviewing-inconsistent techniques gained or maintained weight. The estimated difference in weight change between patients whose physician had a higher global motivational interviewing-Spirit score (e.g., collaborated with patient) and those whose physician had a lower score was 1.6 kg (95% CI=-2.9, -0.3, p=0.02). The same was true for patients whose physician used reflective statements: 0.9 kg (95% CI=-1.8, -0.1, p=0.03). Similarly, patients whose physicians expressed only motivational interviewing-consistent behaviors had a difference in weight change of 1.1 kg (95% CI=-2.3, 0.1, p=0.07) compared to those whose physician expressed only motivational interviewing-inconsistent behaviors (e.g., judging, confronting).

Conclusions In this observational study, use of motivational interviewing techniques during weight loss discussions predicted patient weight loss.

<http://www.ajpm-online.net/article/S0749-3797%2810%2900402-2/abstract>

Jakicic JM, Otto AD. **Treatment and prevention of obesity: what is the role of exercise?** Nutr Rev. 2006;64:S57-S61. Abstract only

Abstract

The increasing prevalence of overweight and obesity highlight the need for improved intervention strategies to counteract this significant public health problem. To this end, it appears that increases in energy expenditure through exercise and other forms of physical activity may be an important component of effective interventions to enhance initial weight loss and the prevention of weight regain. However, to achieve these outcomes, adequate levels of exercise and physical activity appear to be necessary, with 60 to 90 min/d currently being recommended. While this appears to be a significant amount of activity, overweight and obese adults should be counseled to progressively increase to these levels of exercise and physical activity. Moreover, there is significant evidence that even if an overweight or obese adult is unable to achieve this level of activity, that significant health benefits can be realized by participating in at least 30 minutes of daily activity that is at least moderate in intensity. Therefore, it is important to have interventions that target these levels of physical activity to improve health-related outcomes and to facilitate long-term weight control.

http://www.pec-journal.com/medline/record/ivp_00296643_64_S57

Guh DP, Zhang W, Bansback N, Amarsi Z, Birmingham CL, Anis AH. **The incidence of co-morbidities related to obesity and overweight: a systematic review and meta-analysis.** BMC Public Health 2009 Mar 25;9:88.

Background Overweight and obese persons are at risk of a number of medical conditions which can lead to further morbidity and mortality. The primary objective of this study is to provide an estimate of the incidence of each co-morbidity related to obesity and overweight using a meta-analysis.

Methods A literature search for the twenty co-morbidities identified in a preliminary search was conducted in Medline and Embase (Jan 2007). Studies meeting the inclusion criteria (prospective cohort studies of sufficient size reporting risk estimate based on the incidence of disease) were extracted. Study-specific unadjusted relative risks (RRs) on the log scale comparing overweight with normal and obese with normal were weighted by the inverse of their corresponding variances to obtain a pooled RR with 95% confidence intervals (CI).

Results A total of 89 relevant studies were identified. The review found evidence for 18 co-morbidities which met the inclusion criteria. The meta-analysis determined statistically significant associations for overweight with the incidence of type II diabetes, all cancers except esophageal (female), pancreatic and prostate cancer, all cardiovascular diseases (except congestive heart failure), asthma, gallbladder disease, osteoarthritis and chronic back pain. We noted the strongest association between overweight defined by body mass index (BMI) and the incidence of type II diabetes in females (RR = 3.92 (95% CI: 3.10–4.97)). Statistically significant associations with obesity were found with the incidence of type II diabetes, all cancers except esophageal and prostate cancer, all cardiovascular diseases, asthma, gallbladder disease, osteoarthritis and chronic back pain. Obesity defined by BMI was also most strongly associated with the incidence of type II diabetes in females (12.41 (9.03–17.06)).

Conclusion Both overweight and obesity are associated with the incidence of multiple co-morbidities including type II diabetes, cancer and cardiovascular diseases.

Maintenance of a healthy weight could be important in the prevention of the large disease burden in the future. Further studies are needed to explore the biological mechanisms that link overweight and obesity with these co-morbidities.

<http://www.biomedcentral.com/1471-2458/9/88>

Calle EE, Rodriguez C, Walker-Thurmond K, Thun MJ. **Overweight, obesity, and mortality from cancer in a prospectively studied cohort of U.S. adults.** *New England Journal of Medicine* 2003; 348(17):1625–1638.

Background The influence of excess body weight on the risk of death from cancer has not been fully characterized.

Methods In a prospectively studied population of more than 900,000 U.S. adults (404,576 men and 495,477 women) who were free of cancer at enrollment in 1982, there were 57,145 deaths from cancer during 16 years of follow-up. We examined the relation in men and women between the body-mass index in 1982 and the risk of death from all cancers and from cancers at individual sites, while controlling for other risk factors in multivariate proportional-hazards models. We calculated the proportion of all deaths from cancer that was attributable to overweight and obesity in the U.S. population on the basis of risk estimates from the current study and national estimates of the prevalence of overweight and obesity in the U.S. adult population.

Results The heaviest members of this cohort (those with a body-mass index [the weight in kilograms divided by the square of the height in meters] of at least 40) had death rates from all cancers combined that were 52 percent higher (for men) and 62 percent higher (for women) than the rates in men and women of normal weight. For men, the relative risk of death was 1.52 (95 percent confidence interval, 1.13 to 2.05); for women, the relative risk was 1.62 (95 percent confidence interval, 1.40 to 1.87). In both men and women, body-mass index was also significantly associated with higher rates of death due to cancer of the esophagus, colon and rectum, liver, gallbladder, pancreas, and kidney; the same was true for death due to non-Hodgkin's lymphoma and multiple myeloma. Significant trends of increasing risk with higher body-mass-index values were observed for death from cancers of the stomach and prostate in men and for death from cancers of the breast, uterus, cervix, and ovary in women. On the basis of associations observed in this study, we estimate that current patterns of overweight and obesity in the United States could account for 14 percent of all deaths from cancer in men and 20 percent of those in women.

Conclusions Increased body weight was associated with increased death rates for all cancers combined and for cancers at multiple specific sites.

<http://www.uoguelph.ca/hhns/grad/courses/HBNS6710/HBNS6710W04Calle.pdf>

Foster GD, Makris AP, Bailor B. **Behavioural treatment of obesity.** *Am J Clin Nutr.* 2005;82:230S–235S. Abstract only

Abstract

Behavioral treatment is an approach used to help individuals develop a set of skills to achieve a healthier weight. It is more than helping people to decide what to change; it is helping them identify how to change. The behavior change process is facilitated through the use of self-monitoring, goal setting, and problem solving. Studies suggest that behavioral treatment produces weight loss of 8-10% during the first 6 mo of treatment. Structured approaches such as meal replacements and food provision have been shown to increase the magnitude of weight loss. Most research on behavioral treatment has been conducted in university-based clinic programs. Although such studies are important, they tell us little about the effectiveness of these approaches in settings outside of specialized clinics. Future research might focus more on determining how these behavioral techniques can be best applied in a real-world setting.

http://www.pec-journal.com/medline/record/ivp_00029165_82_230S

Avenell A, Broom J, Brown TJ, Poobalan A, Aucott L, Stearns SC, et al. **Systematic review of the long-term effects and economic consequences of treatments for**

obesity and implications for health improvement. Health Technol Assess. 2004;8:1–182. <http://www.hta.ac.uk/pdfexecs/summ821.pdf>

Depression and anxiety

Smeeding S et al. **Outcome Evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for Chronic Pain and Stress-Related Depression, Anxiety, and Post-Traumatic Stress Disorder.** The Journal of Alternative and Complementary Medicine. August 2010, 16(8): 823-835.

Abstract

Objectives: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind–body skills.

Methods: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI<19, n=82), low depression (BDI<19, n=93), and absence of PTSD (n=102) compared to veterans with high anxiety (BAI≥19, n=77), high depression (BDI>19, n=67), and presence of PTSD (n=63).

Results: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d=0.52), the high-depression group (Cohen's d=0.46), and the PTSD group (Cohen's d=0.41).

Conclusions: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.

<http://www.liebertonline.com/doi/abs/10.1089/acm.2009.0510>

Streeter et al. **Effects of Yoga Versus Walking on Mood, Anxiety, and Brain GABA Levels: A Randomized Controlled MRS Study.** The Journal of Alternative and Complementary Medicine. November 2010, 16(11): 1145-1152.

doi:10.1089/acm.2010.0007.

Abstract

Objectives: Yoga and exercise have beneficial effects on mood and anxiety. γ -Aminobutyric acid (GABA)-ergic activity is reduced in mood and anxiety disorders. The practice of yoga postures is associated with increased brain GABA levels. This study addresses the question of whether changes in mood, anxiety, and GABA levels are specific to yoga or related to physical activity.

Methods: Healthy subjects with no significant medical/psychiatric disorders were randomized to yoga or a metabolically matched walking intervention for 60 minutes 3

times a week for 12 weeks. Mood and anxiety scales were taken at weeks 0, 4, 8, 12, and before each magnetic resonance spectroscopy scan. Scan 1 was at baseline. Scan 2, obtained after the 12-week intervention, was followed by a 60-minute yoga or walking intervention, which was immediately followed by Scan 3.

Results: The yoga subjects (n=19) reported greater improvement in mood and greater decreases in anxiety than the walking group (n=15). There were positive correlations between improved mood and decreased anxiety and thalamic GABA levels. The yoga group had positive correlations between changes in mood scales and changes in GABA levels.

Conclusions: The 12-week yoga intervention was associated with greater improvements in mood and anxiety than a metabolically matched walking exercise. This is the first study to demonstrate that increased thalamic GABA levels are associated with improved mood and decreased anxiety. It is also the first time that a behavioral intervention (i.e., yoga postures) has been associated with a positive correlation between acute increases in thalamic GABA levels and improvements in mood and anxiety scales. Given that pharmacologic agents that increase the activity of the GABA system are prescribed to improve mood and decrease anxiety, the reported correlations are in the expected direction. The possible role of GABA in mediating the beneficial effects of yoga on mood and anxiety warrants further study.

<http://www.liebertonline.com/doi/abs/10.1089/acm.2010.0007>

Freeman MP, Fava M, Lake J, Trivedi MH, Wisner KL, Mischoulon D. **Complementary and alternative medicine in major depressive disorder: the American Psychiatric Association Task Force report.** Journal of Clinical Psychiatry. 2010, 71(6):669-81.

BACKGROUND Although mindfulness-based therapy has become a popular treatment, little is known about its efficacy.

OBJECTIVES To conduct an effect size analysis of this popular intervention for anxiety and mood symptoms in clinical samples.

DATA SOURCES A literature search was conducted using PubMed, PsycInfo, the Cochrane Library, and manual searches.

REVIEW METHODS The search identified 39 studies totaling 1,140 participants receiving mindfulness-based therapy for a range of conditions, including cancer, generalized anxiety disorder, depression, and other psychiatric or medical conditions.

RESULTS Effect size estimates suggest that mindfulness-based therapy was moderately effective for improving anxiety (Hedges' $g = 0.63$) and mood symptoms (Hedges' $g = 0.59$) from pre to post-treatment in the overall sample. In patients with anxiety and mood disorders, this intervention was associated with effect sizes (Hedges' g) of 0.97 and 0.95 for improving anxiety and mood symptoms, respectively. These effect sizes were robust, unrelated to publication year or number of treatment sessions, and were maintained over follow-up.

CONCLUSION These results suggest that mindfulness-based therapy is a promising intervention for treating anxiety and mood problems in clinical populations.

http://article.psychiatrist.com/dao_1-login.asp?ID=10006918&RSID=82428552429371

Hofmann SG, Sawyer AT, Witt AA, Oh D. **The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review.** Journal of Consulting and Clinical Psychology. 2010, 78(2):169-83.

BACKGROUND Although mindfulness-based therapy has become a popular treatment, little is known about its efficacy.

OBJECTIVES To conduct an effect size analysis of this popular intervention for anxiety and mood symptoms in clinical samples.

DATA SOURCES A literature search was conducted using PubMed, PsycInfo, the Cochrane Library, and manual searches.

REVIEW METHODS

The search identified 39 studies totaling 1,140 participants receiving mindfulness-based therapy for a range of conditions, including cancer, generalized anxiety disorder, depression, and other psychiatric or medical conditions.

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<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2848393/?tool=pubmed>

Hou WH, Chiang PT, Hsu TY, Chiu SY, Yen YC. **Treatment effects of massage therapy in depressed people: a meta-analysis.** *Journal of Clinical Psychiatry.* 2010, 71(7):894-901.

Objective: To systematically investigate the treatment effects of massage therapy in depressed people by incorporating data from recent studies.

Data Sources: A meta-analysis of randomized controlled trials (RCTs) of massage therapy in depressed people was conducted using published studies from PubMed, EMBASE, PsycINFO, and CINAHL electronic database from inception until July 2008. The terms used for the search were derived from medical subheading term (MeSH) massage combined with MeSH depression. Hand searching was also checked for bibliographies of relevant articles. Retrieval articles were constrained to RCTs/clinical trials and human subjects. No language restrictions were imposed.

Study Selection: We included 17 studies containing 786 persons from 246 retrieved references. Trials with other intervention, combined therapy, and massage on infants or pregnant women were excluded.

Data Extraction: Two reviewers independently performed initial screen and assessed quality indicators by Jadad scale. Data were extracted on publication year, participant characteristics, and outcomes by another single reviewer.

Data Synthesis: All trials showed positive effect of massage therapy on depressed people. Seventeen RCTs were of moderate quality, with a mean quality score of 6.4 (SD = 0.85). The pooled standardized mean difference in fixed- and random-effects models were 0.76 (95% CI, 0.61–0.91) and 0.73 (95% CI, 0.52–0.93), respectively. Both indicated significant effectiveness in the treatment group compared with the control group. The variance between these studies revealed possible heterogeneity ($\tau^2 = 0.06$, Cochran $\chi^2_{16} = 25.77$, $P = 0.06$).

Conclusions: Massage therapy is significantly associated with alleviated depressive symptoms. However, standardized protocols of massage therapy, various depression rating scales, and target populations in further studies are suggested.

http://article.psychiatrist.com/dao_1-login.asp?ID=10006792&RSID=82428552429637

Rocha Araujo DM, Vilarim MM, Nardi AE. **What is the effectiveness of the use of polyunsaturated fatty acid omega-3 in the treatment of depression?** *Expert Review of Neurotherapeutics.* 2010, 10(7):1117-29.

This systematic review aims to identify the effect of polyunsaturated fatty acid omega-3 on depressive disorder. A bibliographical search was conducted in the databases SciELO, PubMed and ISIWEB. The keywords used were: “depression” and “omega-3 fatty acids”, “depression” and “omega-3 polyunsaturated fatty acid”, “depression” and “n-3 fatty acids”. A total of 19 studies were identified: four double-blind randomized studies, four cohorts, two cross-sectional lines and nine case–controls. Only five studies presented dropout of less than 30% and controlled for the most important confounding variables. Of the evaluated studies, 13 showed a significant positive association between omega-3 and depression, while six studies did not show a relationship between the referred variables. Therefore, future studies with similar methodology would aid in determining the precise effect of omega-3 on depressive disorders.http://www.expert-reviews.com/doi/abs/10.1586/ern.10.77?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Shih M, Yang YH, Koo M. **A meta-analysis of hypnosis in the treatment of depressive symptoms: a brief communication.** International Journal of Clinical and Experimental Hypnosis. 2009, 57(4):431-42.

Abstract

The efficacy of hypnosis in the treatment of depressive symptoms was subjected to a meta-analysis. Studies were identified using Google Scholar and 6 electronic databases: PubMed, Cochrane Library, PsiTri, PsychLit, Embase, and the Cochrane Depression, Anxiety and Neurosis Review Group (CCDAN). The keywords used were (a) hypnosis, (b) hypnotherapy, (c) mood disorder, (d) depression, and (e) dysthymia. Six studies qualified and were analyzed using the Comprehensive Meta-Analysis software package. The combined effect size of hypnosis for depressive symptoms was 0.57. Hypnosis appeared to significantly improve symptoms of depression ($p < .001$). Hypnosis appears to be a viable nonpharmacologic intervention for depression. Suggestions for future research are discussed.

<http://www.informaworld.com/smpp/content~db=all?content=10.1080/00207140903099039>

Wang C, Bannuru R, Ramel J, Kupelnick B, Scott T, Schmid CH. **Tai Chi on psychological well-being: systematic review and meta-analysis.** BMC

Complementary and Alternative Medicine. 2010;10:23.

Background Physical activity and exercise appear to improve psychological health. However, the quantitative effects of Tai Chi on psychological well-being have rarely been examined. We systematically reviewed the effects of Tai Chi on stress, anxiety, depression and mood disturbance in eastern and western populations.

Methods Eight English and 3 Chinese databases were searched through March 2009. Randomized controlled trials, non-randomized controlled studies and observational studies reporting at least 1 psychological health outcome were examined. Data were extracted and verified by 2 reviewers. The randomized trials in each subcategory of health outcomes were meta-analyzed using a random-effects model. The quality of each study was assessed.

Results Forty studies totaling 3817 subjects were identified. Approximately 29 psychological measurements were assessed. Twenty-one of 33 randomized and nonrandomized trials reported that 1 hour to 1 year of regular Tai Chi significantly increased psychological well-being including reduction of stress (effect size [ES], 0.66; 95% confidence interval [CI], 0.23 to 1.09), anxiety (ES, 0.66; 95% CI, 0.29 to 1.03), and depression (ES, 0.56; 95% CI, 0.31 to 0.80), and enhanced mood (ES, 0.45; 95% CI, 0.20 to 0.69) in community-dwelling healthy participants and in patients with chronic

conditions. Seven observational studies with relatively large sample sizes reinforced the beneficial association between Tai Chi practice and psychological health. Conclusions Tai Chi appears to be associated with improvements in psychological well-being including reduced stress, anxiety, depression and mood disturbance, and increased self-esteem. Definitive conclusions were limited due to variation in designs, comparisons, heterogeneous outcomes and inadequate controls. High-quality, well-controlled, longer randomized trials are needed to better inform clinical decisions.
<http://www.biomedcentral.com/1472-6882/10/23>

Okamoto A, Kuriyama H, Watanabe S, Aihara Y, Tadai T, Imanishi J, et al. **The effect of aromatherapy massage on mild depression: a pilot study.** *Psychiat Clin Neuros.* 2005;59:363. No abstract
<http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1819.2005.01385.x/pdf>

Yim et al. **A review of the effects of aromatherapy for patients with depressive symptoms.** *J Complement Alternat Med* Vol 15, No 2, 2009, pg 187-195.
Abstract

Purpose: We reviewed studies from 2000 to 2008 on using essential oils for patients with depression or depressive symptoms and examined their clinical effects. Methods: The review was conducted among five electronic databases to identify all peer-reviewed journal papers that tested the effects of aromatherapy in the form of therapeutic massage for patients with depressive symptoms.

Results: The results were based on six studies examining the effects of aromatherapy on depressive symptoms in patients with depression and cancer. Some studies showed positive effects of this intervention among these three groups of patients. Conclusions: We recommend that aromatherapy could continue to be used as a complementary and alternative therapy for patients with depression and secondary depressive symptoms arising from various types of chronic medical conditions. More controlled studies with sound methodology should be conducted in the future to ascertain its clinical effects and the underlying psychobiologic mechanisms.

<http://bit.ly/eWlyTa>

Meeks TW, Wetherell JL, Irwin MR, Redwine LS, Jeste DV. **Complementary and alternative treatments for late-life depression, anxiety, and sleep disturbance: a review of randomized controlled trials** *J Clin Psychiatry.* 2007 Oct;68(10):1461-71.

Objective: We reviewed randomized controlled trials of complementary and alternative medicine (CAM) treatments for depression, anxiety, and sleep disturbance in nondemented older adults.

Data sources: We searched PubMed (1966-September 2006) and PsycINFO (1984-September 2006) databases using combinations of terms including depression, anxiety, and sleep; older adult/elderly; randomized controlled trial; and a list of 56 terms related to CAM.

Study selection: Of the 855 studies identified by database searches, 29 met our inclusion criteria: sample size ≥ 30 , treatment duration ≥ 2 weeks, and publication in English. Four additional articles from manual bibliography searches met inclusion criteria, totaling 33 studies.

Data extraction: We reviewed identified articles for methodological quality using a modified Scale for Assessing Scientific Quality of Investigations (SASQI). We categorized a study as positive if the CAM therapy proved significantly more effective than an inactive control (or as effective as active control) on at least 1 primary psychological outcome. Positive and negative studies were compared on the following

characteristics: CAM treatment category, symptom(s) assessed, country where the study was conducted, sample size, treatment duration, and mean sample age.

Data synthesis: 67% of the 33 studies reviewed were positive. Positive studies had lower SASQI scores for methodology than negative studies. Mind-body and body-based therapies had somewhat higher rates of positive results than energy- or biologically-based therapies.

Conclusions: Most studies had substantial methodological limitations. A few well-conducted studies suggested therapeutic potential for certain CAM interventions in older adults (e.g., mind-body interventions for sleep disturbances and acupuncture for sleep and anxiety). More rigorous research is needed, and suggestions for future research are summarized.

http://article.psychiatrist.com/dao_1-login.asp?ID=10003281&RSID=60055396938366

1. Cardiovascular disease
2. High blood pressure
3. Cancer
4. Arthritis
5. Type II Diabetes
6. Asthma
7. Obesity
8. Depression and anxiety