Integrative Oncology

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Warning!
Irresponsible people working
“The good physician treats the disease; the great physician treats the patient who has the disease.”
~ Sir William Osler (1849-1919)

The physician is only nature's assistant.
~ Galen
The National institute of Health defines complementary and alternative medicine (CAM) as a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.
Integrative Medicine uses all appropriate therapies, both conventional and alternative, to facilitate the body's innate healing response. IM neither rejects conventional medicine nor accepts alternative therapies uncritically.
Integrative oncology can be defined as the rational, evidence-based combination of conventional therapy with complementary interventions into an individualized therapeutic regimen that addresses the whole person living with or beyond cancer—body, mind and spirit.
• "Everyone has a doctor in him or her; we just have to help it in its work. The natural healing force within each one of us is the greatest force in getting well."

~Hippocrates (460-377 B.C.)
Alternative Therapies
Legal implications

• "In the treatment of all the patients in this case, [petitioner] demonstrated that he lacked the basic understanding of the disease from which all the patients were suffering."

• "it is well settled that a patient's consent to or even insistence upon a certain treatment does not relieve a physician from the obligation of treating the patient with the usual standard of care."

FDA
• oversees the labeling of drugs and dietary supplements; manufacturing standards (GMPs), testing and drug approval process; and standards for devices and clinical laboratory practices. FDA is a REGULATORY AGENCY.

FTC
• controls the marketing and advertising of foods, drugs and dietary supplements. FTC is an ENFORCEMENT AGENCY.
• Nutrition
• Mind-body practices
• Manipulation practices
• Spirituality
• Energy practices
• Whole body system practices
35% of all cancers in the United States may be related to diet

Both what we eat and what we don't
"No illness which can be treated by the diet should be treated by any other means."

~ Moses Maimonides (1135-1204)
Only Irish Coffee provides in a single glass all four essential food groups: alcohol, caffeine, sugar, fat.”
—Alex Levine – Irish actor and musician
Obesity Trends* Among U.S. Adults
BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2010

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
SAD diet

- Standard
- American
- Diet
Let food be your medicine, and medicine be your food.

Hippocrates
Mind – Body Medicine

• NCCAM defines mind-body medicine as "...practices (that) focus on the interactions among the brain, mind, body, and behavior, with the intent to use the mind to affect physical functioning and promote health."

"For this is the great error of our day in the treatment of the human body, that physicians separate the soul from the body”.

Plato  380 B.C.
• Relaxation
• Mediation
• Guided Imagery
• Biofeedback
• Hypnosis
• Cognitive Behavioral therapy
• Psycho educational approaches
That's odd... my neck suddenly feels better...

Early Acupuncture
Limitations of Botanical Research

- Lack of standardization
- Similar names with very different plants
- Part of the plant used
- Type of extract
- Concentrations
- Doses
- Difficulty in controlling placebo group
Vitamina D ????
Grifola Frondosa

Polysaccharides pp 2179-2214
Trametes Versicolor

Biomedicines 2020, 8(5), 135;
https://doi.org/10.3390/biomedicines8050135
IS THAT GRASS?

YEAH... BUT I TAKE IT FOR MEDICINAL PURPOSES ONLY.
Fig. 2. Photomicrographs of ancient cannabis. (A) Photograph of the whole cannabis sample being transferred in laminar flow hood. (B) Photomicrograph of leaf material at low power displaying non-epidermal and amber sessile epidermal trichomes. Note retention of chlorophyll and...
Distribution of CB1 & CB2 receptors

CB2
- immunologic cells (modulation cell migration)
- microglia (possible role in Alzheimer’s?)
Response rate among patients with overall survival ≥2 months (n = 116).
Toxicity

- Hallucinations
- Tachycardia
- Labored breathing
- Obtundation

Wang GS JAMA Pediatrics, 2013

http://opiophilia.blogspot.com/2013_04_01_archive.html
DEATHS FROM ALCOHOL

DEATHS FROM CIGARETTES

DEATHS FROM MARIJUANA
# Marijuana Abuse/Dependency

<table>
<thead>
<tr>
<th>DRUG</th>
<th>LIFETIME RISK OF DEPENDENCE</th>
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</thead>
<tbody>
<tr>
<td>Nicotine</td>
<td>32%</td>
</tr>
<tr>
<td>Heroin</td>
<td>23%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>17%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>15%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>9%</td>
</tr>
</tbody>
</table>

SOURCE: Bostwick, 2012 (reference list).
Marijuana’s Medical Potential: Research Evidence

• Reduces nausea
• Stimulates appetite
• Pain relief
• Controls muscle pain, spasms
• Reduces tics (Tourette’s Syndrome)
• Reduces convulsions (epilepsy)

Research

- Cannabis 16919 articles
- Cannabis Cancer 517
- Cannabis Cancer (Clinical Trial) 19
Control weight
Healthy eating
Appropriate use of supplements
Regular physical activity
Breathing and stress reduction
Guided imagery or self-hypnosis
Connect with family and friends
Engage in spirituality and religion
<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Diagnosis</th>
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<th>Outcome Measures</th>
<th>Study Type</th>
<th>Study Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leffler et al.</td>
<td>34</td>
<td>DJD of knee or</td>
<td>Combination of glucosamine hydrochloride (1500 mg/d), chondroitin sulfate (1200</td>
<td>16 wk</td>
<td>% pain relief, VAS, physical examination score, patient</td>
<td>Randomized, double-blind, placebo-</td>
<td>The combination therapy relieved symptoms of knee OA. A larger dataset is needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>low back</td>
<td>mg/d), and manganese ascorbate (228 mg/d)</td>
<td></td>
<td>assessment</td>
<td>controlled crossover trial</td>
<td>to determine the value of this therapy for spinal DJD. Weak evidence.</td>
</tr>
<tr>
<td>McAlindon et al.</td>
<td>205</td>
<td>Knee OA</td>
<td>Glucosamine hydrochloride (1500 mg/d)</td>
<td>12 wk</td>
<td>Change in pain score, stiffness, physical function,</td>
<td>Double-blind, randomized, placebo-</td>
<td>Results suggest that although glucosamine</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and analgesic use</td>
<td>controlled trial</td>
<td>appears to be safe, it is no more effective than placebo in treating the</td>
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<td></td>
<td></td>
<td></td>
<td>symptoms of knee OA. No evidence.</td>
</tr>
<tr>
<td>Clegg et al.</td>
<td>1583</td>
<td>Knee OA</td>
<td>Glucosamine hydrochloride (1500 mg/d) and chondroitin sulfate (1200 mg/d)</td>
<td>24 wk</td>
<td>VAS, SF-36, Health Assessment Questionnaire, acetaminophen use</td>
<td>Multicenter, double-blind, placebo-</td>
<td>Glucosamine and chondroitin sulfate alone or in combination did not reduce pain</td>
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<td></td>
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<td></td>
<td></td>
<td>controlled trial</td>
<td>effectively in the overall group of patients with OA of the knee. No evidence.</td>
</tr>
<tr>
<td>Fransen et al.</td>
<td>605</td>
<td>Knee OA</td>
<td>Glucosamine sulfate (1500 mg/d) and chondroitin sulfate (800 mg)</td>
<td>2 y</td>
<td>Change in pain score and JSN</td>
<td>Randomized, double-blind, placebo-</td>
<td>Glucosamine-chondroitin combination resulted in a significant reduction in JSN</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>controlled trial</td>
<td>at 2 y. All groups had pain reduction, but treatment group had no significant</td>
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<td></td>
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<td></td>
<td>symptomatic benefit above placebo. No evidence.</td>
</tr>
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Abbreviations: DJD, degenerative joint disease; JSN, joint space narrowing; OA, osteoarthritis; SF-36, 36-item short-form survey; VAS, visual analog scale.
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<tr>
<td>Sherman et al\cite{17} (2011)</td>
<td>228</td>
<td>CLBP</td>
<td>Viniyoga, stretching, or self-care book</td>
<td>6, 12, 26 wk</td>
<td>RMDQ, symptom bothersomeness, patient satisfaction</td>
<td>Randomized controlled trial</td>
<td>Yoga classes were more effective than a self-care book, but not more effective than stretching classes, in managing CLBP with benefits lasting at least several months. Weak evidence.</td>
</tr>
<tr>
<td>Saper et al\cite{19} (2013)</td>
<td>95</td>
<td>CLBP</td>
<td>Hatha yoga</td>
<td>12 wk</td>
<td>RMDQ</td>
<td>Randomized, parallel-group, closing trial</td>
<td>Patients with CLBP attending once- or twice-weekly yoga classes experienced similar improvements in pain and back-related function. Weak evidence. This trial reported 30% improvement in overall symptoms. Women in the yoga group showed significantly greater improvements on FM symptoms and functioning. Weak evidence.</td>
</tr>
<tr>
<td>Carson et al\cite{22} (2010)</td>
<td>53</td>
<td>FM</td>
<td>Yoga</td>
<td>8 wk</td>
<td>Standardized questionnaires, physical tests, and daily diaries</td>
<td>Randomized controlled trial</td>
<td>Yoga classes were more effective than a self-care book, but not more effective than stretching classes, in managing CLBP with benefits lasting at least several months. Weak evidence.</td>
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<tr>
<td>D’Souza et al\cite{23} (2008)</td>
<td>141</td>
<td>Tension or migraine headaches</td>
<td>Relaxation training versus written emotional disclosure</td>
<td>2 wk, 1, 3 mo</td>
<td>Immediate mood, headache frequency and severity, physical symptoms</td>
<td>Randomized controlled trial</td>
<td>A brief relaxation training was effective for tension headaches, compared with written emotional disclosure, which had no effect on health status for headaches. Strong evidence.</td>
</tr>
<tr>
<td>Kabat-Zinn et al\cite{24} (1985)</td>
<td>90</td>
<td>Chronic pain</td>
<td>MM</td>
<td>10 wk</td>
<td>Pain score, activity levels, pain-related drug use</td>
<td>Randomized controlled trial</td>
<td>Statistically significant reductions were observed in pain, symptoms, and mood disturbance. Pain drug use decreased and activity levels and self-esteem increased. Weak evidence.</td>
</tr>
<tr>
<td>Cherkov et al\cite{26} (2016)</td>
<td>342</td>
<td>CLBP</td>
<td>MBSR, CBT</td>
<td>4, 8, 26, 52 wk</td>
<td>RMDQ, self-report pain, bothersomeness</td>
<td>Randomized, interviewer-blind, clinical trial</td>
<td>Among adults with CLBP, treatment with MBSR or CBT, compared with usual care, resulted in greater improvement in back pain and functional limitations at 26 wk, with no significant differences in outcomes between MBSR and CBT. Strong evidence.</td>
</tr>
<tr>
<td>Zgierska et al\cite{25} (2016)</td>
<td>35</td>
<td>CLBP</td>
<td>MM</td>
<td>8, 26 wk</td>
<td>Adherence to protocol, treatment satisfaction, experience evaluations</td>
<td>Randomized controlled trial</td>
<td>Adherence to protocol, treatment satisfaction, experience evaluations</td>
</tr>
</tbody>
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Abbreviations: CLBP, chronic low back pain; FM, fibromyalgia; RMDQ, Roland-Morris Disability Questionnaire.

Abbreviations: CBT, cognitive behavioral therapy; CLBP, chronic low back pain; MBSR, mindfulness-based stress reduction; MM, mindfulness meditation; RMDQ, Roland-Morris Disability Questionnaire.
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<tr>
<td>Lauche et al.</td>
<td>114</td>
<td>Chronic neck pain</td>
<td>Tai chi</td>
<td>12 wk</td>
<td>VAS</td>
<td>Randomized controlled trial</td>
<td>Results indicate that tai chi exercises and conventional neck exercises are equally effective in improving pain and quality of life. Weak evidence.</td>
</tr>
<tr>
<td>Tsai et al.</td>
<td>55</td>
<td>Knee osteoarthritis and CI</td>
<td>Sun style tai chi</td>
<td>20 wk</td>
<td>WOMAC, physical function, stiffness score, mini-mental state examination</td>
<td>Pilot cluster randomized trial</td>
<td>All measures improved significantly more over time in the tai chi group than in controls. Practicing tai chi can be efficacious in reducing pain and stiffness in elders with knee OA and CI. Weak evidence.</td>
</tr>
<tr>
<td>Wang et al.</td>
<td>66</td>
<td>Fibromyalgia</td>
<td>Yang style tai chi</td>
<td>12, 24 wk</td>
<td>FIQ, SF-36, quality of life</td>
<td>Single-blind, randomized controlled trial</td>
<td>The tai chi group had clinically important improvements in the FIQ total score and quality of life. Tai chi may be a useful treatment for fibromyalgia. Weak evidence.</td>
</tr>
<tr>
<td>Jones et al.</td>
<td>101</td>
<td>Fibromyalgia</td>
<td>Yang style tai chi</td>
<td>12 wk</td>
<td>FIQ, BPI, sleep, self-efficacy for pain control</td>
<td>Parallel-group randomized controlled trial</td>
<td>Tai chi group compared with the education group demonstrated clinically and statistically significant improvements in FIQ, BPI, and sleep. Tai chi appears to be a safe and an acceptable exercise modality that may be useful as an adjunctive therapy for fibromyalgia. Strong evidence.</td>
</tr>
<tr>
<td>Liang et al.</td>
<td>178</td>
<td>Chronic neck pain</td>
<td>Acupuncture</td>
<td>1, 3 mo</td>
<td>Northwick Park Neck Pain Questionnaire, VAS, SF-36, doctors' judgment</td>
<td>2-arm, randomized, sham-controlled and single-blinded clinical trial</td>
<td>Traditional acupuncture relieved pain intensity and improved quality of daily life with relative long-term clinical efficacy in patients with chronic neck pain. Strong evidence.</td>
</tr>
<tr>
<td>MacPherson et al.</td>
<td>517</td>
<td>Chronic neck pain</td>
<td>Acupuncture, Alexander technique, or usual care alone</td>
<td>3, 6, 12 mo</td>
<td>Pain disability scores, self-care, self-efficacy, lifestyle</td>
<td>3-arm, randomized controlled multicenter trial</td>
<td>Patients in the acupuncture group showed improved self-efficacy and significant reductions in pain and disability scores at 12 mo. Strong evidence.</td>
</tr>
<tr>
<td>Haake et al.</td>
<td>1162</td>
<td>CLBP</td>
<td>Verum acupuncture, sham acupuncture, or conventional therapy</td>
<td>1.5, 3, 6 mo</td>
<td>Von Korff chronic pain grade scale, Hanover Functional Ability Questionnaire</td>
<td>Double-blinded randomized controlled trial</td>
<td>LBP improved after acupuncture treatment for at least 6 mo. Effectiveness of acupuncture, either verum or sham, was almost twice that of conventional therapy. Strong evidence.</td>
</tr>
<tr>
<td>Charkin et al.</td>
<td>638</td>
<td>CLBP (mechanical)</td>
<td>Individualized/standardized/simulated acupuncture, or usual care</td>
<td>8, 26, 52 wk</td>
<td>RMDQ, symptom bothersomeness</td>
<td>Randomized controlled trial</td>
<td>Although acupuncture was found effective for CLBP tailoring needling sites to each patient and penetration of the skin appeared to be unimportant in eliciting therapeutic benefits. Weak evidence.</td>
</tr>
<tr>
<td>Wang et al.</td>
<td>159</td>
<td>Low back and posterior pelvic pain associated with pregnancy</td>
<td>Auricular acupuncture</td>
<td>1, 2 wk</td>
<td>VAS, disability rating index</td>
<td>Randomized controlled trial</td>
<td>Pregnant women who received a 1 wk continuous auricular acupuncture treatment reported significantly less pain compared to other groups. However, the reduction of pain was not sustained for every participant. Weak evidence.</td>
</tr>
<tr>
<td>Berman et al.</td>
<td>570</td>
<td>Knee osteoarthritis</td>
<td>Acupuncture</td>
<td>8, 12, 26 wk</td>
<td>WOMAC, SF-36, patient global assessment, 6-min walk distance</td>
<td>Randomized controlled trial</td>
<td>At 26 wk, the true acupuncture group experienced significantly greater improvement than the sham group in the WOMAC scores and patient global assessment. Strong evidence.</td>
</tr>
</tbody>
</table>

Abbreviations: BPI, Brief Pain Inventory; CI, cognitive impairment; FIQ, Fibromyalgia Impact Questionnaire; SF-36, 36-item short-form survey; VAS, visual analog scale; WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index.
Absence of evidence is not evidence of absence

The risk of the intervention is what should drive the required level of evidence