Attaining Your Optimal Health... with Integrative Medicine

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Optimal Health
LIFESTYLE

The Backbone of Integrative Health
The Four Pillars of Wellness

Conventional Medicine

Body
Lifestyle Medicine

MIND
Stress Reduction

Meaning
Connection

Joy
Promoting Happiness and Gratitude

You Have the Power to Promote Your Own Wellness
Objectives

- Discuss "What is Integrative Oncology"
- Discover why integrative care is important in MPNs
- Review lifestyle medicine interventions
- Emphasize the care of Mind, Meaning, and Joy
- Consider Complementary Care Modalities
Integrative Oncology: The New Definition

“Integrative oncology is a patient-centered, evidence-informed field of cancer care that utilizes mind and body practices, natural products, and/or lifestyle modifications from different traditions alongside conventional cancer treatments. Integrative oncology aims to optimize health, quality of life, and clinical outcomes across the cancer care continuum and to empower people to prevent cancer and become active participants before, during, and beyond cancer treatment.”

Claudia M. Witt, et al.  
*JNCI Monographs*, Volume 2017, Issue 52, 1 November 2017
Why Is Integrative Oncology Important?

- Unmet symptom needs
- Desire for and use of complementary approaches
- Potential to impact outcomes and treatment toxicity
- Potential to decrease cost of care
The Four Pillars of Wellness

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Meaning
Connection, Spirituality

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Promoting Happiness and Gratitude

You Have the Power to Promote Your Own Wellness
“LET FOOD BE THY MEDICINE AND MEDICINE BE THY FOOD”
- HIPPOCRATES
Benefits of Mediterranean Diet


1. Use of olive oil as the main culinary fat
2. Consumption of ≥4 tablespoons/d of olive oil (including oil used for frying, salads, out-of-house meals, etc.)
3. Consumption of ≥2 servings/d of vegetables
4. Consumption of ≥3 servings of fruits
5. Consumption of <1 serving/d of red meat, hamburger or meat products (ham, sausage, etc.)
6. Consumption of <1 serving/d of butter, margarine, or cream
7. Consumption of <1 serving/d of sweetened and/or carbonated beverages
8. Consumption of ≥1 serving/d of wine
9. Consumption of ≥3 servings/week of legumes
10. Consumption of ≥3 servings/week of fish or shellfish
11. Consumption of <3 servings/week of commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits or custard
12. Consumption of ≥3 servings/week of nuts (including peanuts)
13. Preferential consumption of chicken, turkey or rabbit meat instead of veal, pork, hamburger or sausage
14. Consumption of ≥2 servings/week of sofrito, a sauce made with tomato and onion, leek or garlic and simmered with olive oil.
Physical Activity
Exercise Recommendations

- 150-300 min of moderate intensity or 75-150 min vigorous intensity
- Breast cancer meta-analysis (136 Physical Activity Studies)

<table>
<thead>
<tr>
<th></th>
<th>Cardiovascular</th>
<th>Strength</th>
<th>Flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>3-5 days per week</td>
<td>2-3 days per week</td>
<td>2 days per week</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>20-30 min</td>
<td>8-12 repetitions of all major muscle groups</td>
<td>10-30 seconds per stretch</td>
</tr>
<tr>
<td><strong>Intensity</strong></td>
<td>Moderate (40-60% of heart rate reserve)</td>
<td>Gradually increasing to tolerance</td>
<td>Slow static stretching</td>
</tr>
</tbody>
</table>

Source: McNeely, et al. 2006

Paucity of data in literature for physical activity interventions in hematologic disease.

Key Eligibility
- MPN Patient
- Not Depressed
- PS<3
- Not already doing yoga or Mindfullness
- <150 Min of weekly exercise

Active Yoga
- 12 Weeks
- >/= 60 Min/ Week
- Fitbit tracking (Blinded)
- Daily Logs-Yoga and activity
- Blood (2 Timepoints)
  - TNFa
  - IL6
- Saliva (2 Timepoints, 4x each timepoint)
  - Cortisol
  - MPN Sx, QOL, Sleep

Wait List Control (N=30)
- 12 Weeks
- Fitbit tracking/Blinded
- Usual Level of Activity
- Daily Logs - Activity
- MPN Sx, QOL, Sleep

Post 12 week Cross Over

Online Registration & Randomization

MPN Yoga Team:
Arizona State University: Jennifer Huberty PhD
Linda Larkey, PhD
Ryan Eckert, B.S.
Mayo Clinic Arizona
R. Mesa, MD
Amylou Dueck, PhD
K. Gowin, MD
62 patients enrolled, 48 completed intervention

Patients averaged 40 min per week yoga

Significant decrease in TNF-a from baseline to week 12 (p=0.005)

Small to moderate effect sizes for sleep disturbance, pain intensity, anxiety, and depression.
Effectiveness of exercise-based rehabilitation to patient with MPNs

- 5-day interdisciplinary exercise-based rehabilitation, 12 week self-directed
- Fatigue (BFI, MDFI), Symptoms (MPN SAF), Anxiety/Depression (HADS) at 12 weeks
- No significant difference observed on fatigue, QOL
- Significant increase in physical capacity

The Four Pillars of Wellness

- **Body**: Lifestyle Medicine
- **MIND**: Stress Reduction
- **Spirit**: Finding meaning
- **Joy**: Promoting Happiness and Gratitude
Joy is far less vulnerable than happiness. Joy seems to be a part of the unconditional wish to live, not holding back because our life may not meet our preferences and expectations. Joy seems to be a function of the willingness to accept the whole, and to show up to meet with whatever is there.

Rachel Naomi Remen,
Kitchen Table Wisdom
The Four Pillars of Wellness

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Body
Lifestyle Medicine

MIND
Stress Reduction

Joy
Promoting Happiness and Gratitude

Spirit
Finding meaning

Complementary

Complementary

Complementary

Complementary
Complementary Care Modalities

- Acupuncture
- Naturopathic care
- Chinese herbal medicine
- Meditation
- Ayurveda
- Hypnosis
- Native Healing, Prayer lodge, ceremony
- Biofeedback
- Essential Oils
- Homeopathy
- Meditation
- Prayer
- Pet Therapy
- Reiki
- Massage
- Cranial Sacral
- Laugh therapy
- Music Therapy
- ETC!

Data suggests 40-60% of cancer patients use complementary and alternative medicine.
-NHS survey 2012
Acupuncture
Botanical Medicine

Resources:
- Natural Medicines Database
  https://naturalmedicines.therapeuticresearch.com
- Memorial Sloan Kettering Cancer Center: About Herbs
Issues with Botanicals

- Source and contamination
- Pharmacologic Interaction
- Safety
- Bioavailability
- Difficultly with Study: Source, Funding
- LOSS of Synergy and "plant medicine"

Finding Quality Dietary Supplements

When it comes to supplements, the quality of products may be quite variable. Look for products that have been evaluated by quality assurance companies. They will bear the label print of USP, NSF, or Consumer Labs to ensure the product has been tested, contains what the label indicates, and is free of toxic chemicals.
The SIMM study: Survey of integrative medicine in myeloproliferative neoplasms

Krisstina Gowin¹ | Blake T. Langlais² | Heidi E. Kosiorek² | Amylou Dueck² |
Denise Millstine³ | Jennifer Huberty⁴ | Ryan Eckert⁵ | Ruben A. Mesa⁵
SIMM Study

- 858 Patients (338 ET, 188 PV, 315 MF)
- Patients used broad spectrum of integrative therapies (aerobic activity (51%), massage (28%), yoga (25%), nutrition (25%), strength training (23%), acupuncture (19%), mediation (19%), etc.
- Natural products used in prior 6 months by 48% ET, 42% MF, and 45% PV patients
- 20% reported NOT disclosing supplement use to physician
- Only 24% received nutrition advice
- 80% felt integrative “felt integrative need were NOT heard by provider”
- **OMEGA-3 Supplementation**
  - Correlated with Lower MPN SAF, BFI
  - Caution with blood thinners (may increase risk of bleeding)

**Correlation Does Not = Causation**
**Trials are needed!**

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### Supplement utilization

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Yes</th>
<th>No</th>
<th>p value (t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPN-SAF TSS, mean (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td>27.7 (17.6)</td>
<td>26.9 (17.9)</td>
<td>0.56</td>
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<tr>
<td>Multivitamin</td>
<td>26.5 (16.3)</td>
<td>27.3 (18.2)</td>
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<tr>
<td>Magnesium</td>
<td>27.0 (15.9)</td>
<td>27.2 (18.3)</td>
<td>0.92</td>
</tr>
<tr>
<td>Omega 3</td>
<td>24.4 (16.3)</td>
<td>27.8 (18.0)</td>
<td>0.03</td>
</tr>
<tr>
<td>Calcium</td>
<td>25.2 (15.7)</td>
<td>27.4 (18.1)</td>
<td>0.22</td>
</tr>
<tr>
<td>Turmeric</td>
<td>24.2 (16.4)</td>
<td>27.5 (17.9)</td>
<td>0.09</td>
</tr>
<tr>
<td>Green tea</td>
<td>24.1 (17.7)</td>
<td>27.5 (17.8)</td>
<td>0.08</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>26.1 (15.8)</td>
<td>27.2 (17.9)</td>
<td>0.67</td>
</tr>
<tr>
<td>Medicinal marijuana</td>
<td>31.7 (17.7)</td>
<td>27.0 (17.8)</td>
<td>0.25</td>
</tr>
<tr>
<td>Medicinal mushroom</td>
<td>39.5 (23.2)</td>
<td>27.0 (17.7)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

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### Brief fatigue inventory, mean (SD)

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Yes</th>
<th>No</th>
<th>p value (t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D</td>
<td>4.7 (2.5)</td>
<td>4.4 (2.6)</td>
<td>0.21</td>
</tr>
<tr>
<td>Multivitamin</td>
<td>4.5 (2.5)</td>
<td>4.5 (2.6)</td>
<td>0.97</td>
</tr>
<tr>
<td>Magnesium</td>
<td>4.7 (2.4)</td>
<td>4.4 (2.6)</td>
<td>0.33</td>
</tr>
<tr>
<td>Omega 3</td>
<td>4.1 (2.5)</td>
<td>4.6 (2.6)</td>
<td>0.02</td>
</tr>
<tr>
<td>Calcium</td>
<td>4.4 (2.4)</td>
<td>4.5 (2.6)</td>
<td>0.64</td>
</tr>
<tr>
<td>Turmeric</td>
<td>4.4 (2.7)</td>
<td>4.5 (2.6)</td>
<td>0.61</td>
</tr>
<tr>
<td>Green tea</td>
<td>4.0 (2.7)</td>
<td>3.7 (2.6)</td>
<td>0.10</td>
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<tr>
<td>Vitamin E</td>
<td>4.4 (2.4)</td>
<td>4.5 (2.6)</td>
<td>0.90</td>
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<tr>
<td>Medicinal marijuana</td>
<td>5.6 (1.9)</td>
<td>4.5 (2.6)</td>
<td>0.06</td>
</tr>
<tr>
<td>Medicinal mushroom</td>
<td>5.1 (3.2)</td>
<td>4.5 (2.6)</td>
<td>0.48</td>
</tr>
</tbody>
</table>

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*SIMM study, Gowin et al 2020.*
SIMM STUDY RESULTS

• **MPN-SAF:**
  - Lower with aerobic activity/strength training
  - Higher in massage/support groups

• **Quality of Life**
  - Higher with massage/support groups
  - Lower with aerobic activity/strength

• **Depression**
  - Depression were less likely with Aerobic activity, yoga, strength training

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**TABLE 5** Adjusted intervention comparisons for symptom burden, QOL, depression, and fatigue

<table>
<thead>
<tr>
<th></th>
<th>Overall (N = 858)</th>
<th>MPN-SAF TSS, mean yes/no</th>
<th>Qol., mean yes/no</th>
<th>PHQ-2, odds ratio (95% CI)</th>
<th>BFI, mean yes/no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic activity</td>
<td>33.39% (α = 4.5D)</td>
<td>4.25% (α = 4.5D)</td>
<td>0.60 (0.42, 0.86)</td>
<td>5.1 (5.5)</td>
<td></td>
</tr>
<tr>
<td>Massage</td>
<td>40.5% (α = 2.44)</td>
<td>5.0% (α = 4.6)</td>
<td>1.05 (0.72, 1.53)</td>
<td>6.1 (5.4)</td>
<td></td>
</tr>
<tr>
<td>Yoga</td>
<td>35.1% (α = 0.7)</td>
<td>4.5% (α = 4.8)</td>
<td>0.61 (0.39, 0.94)</td>
<td>5.5 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>35.4% (α = 2.6)</td>
<td>4.6% (α = 4.8)</td>
<td>1.09 (0.71, 1.67)</td>
<td>5.5 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Strength training</td>
<td>34.0% (α = 7.7)</td>
<td>4.2% (α = 4.9)</td>
<td>0.58 (0.37, 0.91)</td>
<td>5.2 (5.7)</td>
<td></td>
</tr>
<tr>
<td>Acupuncture</td>
<td>38.2% (α = 166)</td>
<td>5.1% (α = 4.7)</td>
<td>0.74 (0.47, 1.17)</td>
<td>5.9 (5.5)</td>
<td></td>
</tr>
<tr>
<td>Meditation</td>
<td>35.4% (α = 100)</td>
<td>4.7% (α = 4.8)</td>
<td>0.62 (0.38, 1.01)</td>
<td>5.4 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Breathing exercise</td>
<td>35.9% (α = 158)</td>
<td>5.1% (α = 4.7)</td>
<td>1.47 (0.95, 2.28)</td>
<td>6.1 (5.5)</td>
<td></td>
</tr>
<tr>
<td>Chiropractic</td>
<td>36.7% (α = 70)</td>
<td>4.8% (α = 4.8)</td>
<td>0.75 (0.46, 1.21)</td>
<td>5.4 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Support groups</td>
<td>42.3% (α = 124)</td>
<td>5.4% (α = 4.6)</td>
<td>1.45 (0.91, 2.31)</td>
<td>6.2 (5.5)</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Results adjusted for alcohol consumption, smoking status, BMI, current dietary modification, and MPN type. Odds ratios show the likelihood of a PHQ-2 score ≥2 (yes vs. no). Yes: Those who participated in intervention; No: Those who did not participate in intervention.

Abbreviations: BFI, brief fatigue inventory; CI, confidence interval; MPN-SAF TSS, Myeloproliferative Neoplasm Symptom Assessment Form Total Symptom Score; PHQ-2, patient health questionnaire; Qol., quality of life.

* p value <0.03.

** p value <0.01.
SIMM Study-Take Home Points

**HIGH Level of Need** for Integrative Education and Research

Need to communicate with provider
My Health Study:

- Mobile Wellness Application
- 30 participants
- Encouraged to set up at least two goals
- Questionnaires at baseline, 12 weeks (MPN SAF, PROMIS sleep, Diet, Physical activity)

**HOW DOES IT WORK?**

- SCORE how satisfied you are in the 7 Core Areas of Health
- EXPLORE your health by answering simple questions.
- MAKE A GOAL in any Core Area of Health
- TAKE ACTION—step-by-step to reach your goal in 1–3 months.
43% set up at least 1 goal (ranging 1-5).
53% were retained at 12 weeks
Total Symptom score improved at 12 weeks p=0.001.
No significant impact on sleep, diet, physical activity was detected but limited due to small number
Planned next phase to include health coaching, inflammatory laboratory marker assessment
Take Home Points

- DISCUSS YOUR TREATMENT PLAN WITH PROVIDERS
- Eat Intentionally
- Move often
- Breathe
- Manage Stress
- Cultivate Joy
Tumor Promoting inflammation

- Chronic infections, obesity, smoking, alcohol consumption, environmental pollutants and high fat diets are now recognized as major risk factors for most common types of cancer; and, importantly, all these risk factors are linked to cancer through inflammation.

Benefits of the Mediterranean Diet: Insights From the PREDIMED Study

Miguel A. Martínez-González a,b,c,*, Jordi Salas-Salvadó b,c,d, Ramón Estruch b,c,e, Dolores Corella c,f, Montse Fito c,g, Emilio Ros c,e, for the PREDIMED INVESTIGATORS

aDepartment of Preventive Medicine and Public Health, University of Navarra, IDSNA (Navarra Health Research Institute), Pamplona, Spain
bThe PREDIMED Research Network (RD 06/0045), Instituto de Salud Carlos III, Madrid, Spain
cCentro de Investigación Biomédica en Red Fisiopatología de la Obesidad y Nutrición (CIBERobn), Instituto de Salud Carlos III, Madrid, Spain
dHuman Nutrition Department, Hospital Universitari Sant Joan, Institut d’Investigació Sanitaria Pere Virgili, Universitat Rovira i Virgili, Reus, Spain
eInstitut d’Investigacions Biomèdiques August Pi i Sunyer, Hospital Clinic, University of Barcelona, Barcelona, Spain
fDepartment of Preventive Medicine and Public Health, University of Valencia, Valencia, Spain
gCardiovascular and Nutrition Research Group, Institut de Recerca Hospital del Mar, Barcelona, Spain
Mediterranean Diet and Invasive Breast Cancer Risk Among Women at High Cardiovascular Risk in the PREDIMED Trial: A Randomized Clinical Trial
Curcumin (Curcuma Long)
Curcumin and Cancer: An “old-age” disease with an “age-old” solution

Preetha Anand, Chitra Sundaram, Sonia Jhuranı, Ajay Kumar B. Kunnumakkar, Bharat B. Aggarwal

Curcumin and Cancer

Table 1 / Effect of curcumin alone or in combination on molecular targets of cancer treatment.

<table>
<thead>
<tr>
<th>Type of cancer</th>
<th>Molecular targets of curcumin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate cancer</td>
<td>(Bcl-2, IL-10, IL-11, HLA-A, BAX, BRCA2, MAPK, p53 protein)</td>
</tr>
<tr>
<td>(NF-κB, Akt, BAD-2, BRCA4, BRCA2, PTEN, NS3A, CSF-1R, EGF, NF-κB)</td>
<td></td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>(COX-2, NF-kB, IL-6, Bcl-x, cyclin D1, c-ERc, VEGF, IκB, EGF, MMP-9, PGE2)</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>(COX-2, NF-kB, IL-6, Bcl-x, cyclin D1, c-ERc, VEGF, IκB, EGF, MMP-9, PGE2)</td>
</tr>
</tbody>
</table>

Nutrition Reviews Vol. 73(3):155–165