Integrative Medicine in Parkinson’s Disease (PD)

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Integrative Medicine in Parkinson’s Disease (PD)

• **What** is Integrative Medicine?
• **Why** Integrative Medicine in PD?
• **Which** Integrative therapies in PD?
  – Movement / Manipulative (Massage)
  – Mind-Body (Yoga)
  – Energetic (Acupuncture)
  – Supplements/Diet (Coq10)
Parkinson’s Disease: Health-Related Quality of Life, Economic Cost, and Implications of Early Treatment

Jack J. Chen, PharmD

- Balance
- Sensory (Smell)
- Gastrointestinal (constipation)
- Urinary
- Autonomic / Cardiovascular (low blood pressure)
- Mood (depression)
- Sleep (Insomnia)
- Fatigue
- Pain
- ...
Why Integrative Medicine? Balance

• Those with PD:
  – 70% had a fall within 1 year after diagnosis
  – 50% of this group fell again in the next year
• PD have a 3.2-fold ↑ risk of hip fracture than those without PD

Why look at Integrative Medicine? Balance

• “As pharmacological methods are only partially effective in addressing balance and gait problems, non-pharmacological approaches are needed to address these issues.”

9 trials:

- Antidepressants for depression moderate effect but non-significant
- Antidepressants on anxiety in PD was large but also non-significant
- 2 integrative treatments resulted in significant large effects:
  - Omega-3 supplementation
  - CBT
• Pain is frequent and disabling … and is **significantly more common in PD compared to the general population.**

• Pain reported by **83%** of PD patients.
  – Musculoskeletal pain in 70%,
  – Dystonic pain in 40%
  – Nerve pain in 20%
  – Central Nerve pain by 10%
Fatigue… associated with symptoms of:
- Depression and anxiety …
- Compromised motivation …
- Postural/gait impairment and Pai

related to neuroinflammatory mechanisms

…anti-inflammatory therapies, could be effective.

– n
Towards an understanding of fatigue in Parkinson disease

P Hagell,¹,² L Brundin³

• Fatigue may …related to neuroinflammatory mechanisms.

• ..novel treatment options, including anti-inflammatory therapies, could be effective.
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  – Energetic (Acupuncture)
  – Supplements/Diet (Omega-3s)
• Music therapy had a benefit on bradykinesia &
• Emotional functioning / mood
• Improvements in activities of daily living and in quality of life were also documented in the MT group
• Physical therapy improved rigidity
• “…beneficial effect related to its high level of sensory stimulation and high degree of personal interaction.

• …our study suggests a connection between emotions and the facilitation of movement.”
Biofeedback

• muscle biofeedback × 15 weeks
• Significant ↓ in muscle tension
• no change in motor skills compared with controls.

Massage

- Massage may reduce latency of PD medication
- Reduce rigidity & provide relief of tremor for 3 to 5 hours following therapy session.

Steefel L. Massage therapy as an adjunct healingis modality in Parkinson's Disease. Alternat Comp Titero1996
Neuromuscular therapy (NMT) pilot study

- 8 treatment resulted in a significant improvement in the movement ability
- Benefit in most subject not retained a week after the therapy sessions ended
Activity

• “60% of Americans >65 years do not achieve recommended daily activity
• …Activity levels in individuals with PD are 15% ↓ than those of age-matched controls
• Dance may … promote adherence while also incorporating … dynamic balance and continual adjustment to environmental demands.”
Randomly assigned to:
- Tango, Waltz/fox trot or Wait list

1-h classes 2x/ week; total 20 classes

Balance, functional mobility, forward and backward walking were evaluated

Results

• Both dance groups improved more than control group
  – Balance
  – 6-minute walk distance
  – Backward stride length

• Tango improved more than waltz/foxtrot
Mindful Exercise - Tai Chi
Tai chi and postural stability in patients with Parkinson's disease

- Funded by the National Institute of Neurological Disorders and Stroke
- 195 with PD randomized to tai chi, resistance training, or stretching.
- 60-minute sessions 2x/wk x 24 weeks.
- Outcomes: maximum excursion & directional control, stability of gait, falls strength, timed up-and-go tests, scores on UPDRS.

Tai Chi in PD

• The tai chi group performed better than the resistance-training & stretching in
  – Directional control
• The tai chi group outperformed the resistance-training group in
  – Stride length and functional reach
• Tai chi and resistance significantly lowered the incidence of falls
• No serious adverse events
9/10 studies showed a positive effect from acupuncture as compared with their control.

Only 2 studies described details about adverse events.

Need for better trials.
Does Integrative Medicine Enhance Balance in Aging Adults? – Proof of Concept for Benefit of Electro-acupuncture Therapy in Parkinson's Disease

Nima Toosizadeh¹, Hong Lei², Michael Schwenk¹,³, Scott J. Sherman², Esther Esternberg⁴, Jane Mohler³, and Bijan Najafi¹,³

¹ interdisciplinary Consortium on Advanced Motion Performance (iCAMP) and Southern Arizona Limb Salvage Alliance (SALSA), Department of Surgery, College of Medicine, University of Arizona, Tucson, USA.

² Department of Neurology, College of Medicine, University of Arizona, Tucson, USA.
Diet / Supplements in Parkinson’s Disease (PD)
Optimization of pharmacologic treatment … is essential, but nutritional interventions should also be planned with regard to:

- Prevent weight loss or gain;
- Optimization of levodopa pharmacokinetics;
- Improve GI function (e.g., difficulty swallowing and constipation);
- Prevention and treatment of nutritional deficiencies (vitamins and minerals).

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The MIND, Mediterranean and DASH dietary patterns are associated with decreased risk of Parkinsonism and may slow the progression of Parkinsonian signs with age.
# The MIND Diet

Mediterranean-DASH diet Intervention for Neurodegenerative Delay

## WHAT TO EAT

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Example Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>• 3 servings of whole grains</td>
</tr>
<tr>
<td></td>
<td>• 1 serving of vegetables</td>
</tr>
<tr>
<td></td>
<td>• 1 glass of wine (5 oz)</td>
</tr>
<tr>
<td>Most days</td>
<td>• Leafy green vegetables (6x)</td>
</tr>
<tr>
<td></td>
<td>• Nuts (5x)</td>
</tr>
<tr>
<td>Every other day</td>
<td>• Beans (3x)</td>
</tr>
<tr>
<td>Twice a week</td>
<td>• Poultry</td>
</tr>
<tr>
<td></td>
<td>• Berries</td>
</tr>
<tr>
<td>Once a week</td>
<td>• Fish</td>
</tr>
</tbody>
</table>

## WHAT TO LIMIT

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Example Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 T. a day</td>
<td>• Butter and stick margarine</td>
</tr>
<tr>
<td>Less than 5x/week</td>
<td>• Pastries and sweets</td>
</tr>
<tr>
<td>Less than 4x/week</td>
<td>• Red meat</td>
</tr>
<tr>
<td>Less than 1x/week</td>
<td>• Whole-fat cheese</td>
</tr>
<tr>
<td></td>
<td>• Fried fast food</td>
</tr>
</tbody>
</table>
CONCLUSIONS:

The consumption of a fermented milk containing multiple probiotic strains and prebiotic fiber was superior to placebo in improving constipation in patients with PD.
“A significantly higher prevalence of hypovitaminosis in PD vs both healthy controls and patients with AD. These data support a possible role of vitamin D insufficiency in PD.”

Arch.Neur.2008
Omega-3s in PD

- Effect of fish oil supplementation (vs placebo) in PD with depression
  - 42% with $\geq 50\%$ ↓ in depression
  - 22% with remission
  - 6% discontinued fish oil

Putting It All Together...
<table>
<thead>
<tr>
<th><strong>ESSENCE</strong></th>
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<tbody>
<tr>
<td><strong>Education</strong></td>
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<tr>
<td>- Knowledge about the condition and its management</td>
</tr>
<tr>
<td>- Information on the effects of lifestyle factors on health including reducing, or eliminating harmful behaviours and increasing health promoting behaviours</td>
</tr>
<tr>
<td><strong>Stress management</strong></td>
</tr>
<tr>
<td>- Promoting group-support, meditations and greater emotional intelligence</td>
</tr>
<tr>
<td><strong>Spirituality</strong></td>
</tr>
<tr>
<td>- Increasing individual’s ability to explore personal ‘meaning’ and/or ‘purpose’ in life</td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
</tr>
<tr>
<td>- Promoting increased physical activity for reduced risk of chronic disease and improved mental health outcomes, such as self-esteem, depression and anxiety</td>
</tr>
<tr>
<td><strong>Nutrition</strong></td>
</tr>
<tr>
<td>- Encouraging health nutrition though the provision of information on the benefits of micronutrients in food and outcomes of a diabetogenic diet</td>
</tr>
<tr>
<td>- Promoting simple strategies for improving health food choices</td>
</tr>
<tr>
<td><strong>Connectedness</strong></td>
</tr>
<tr>
<td>- Information about the importance of professional and emotional support in the self-management of chronic disease</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td>- Raising awareness of the importance of reducing exposure to harmful chemicals</td>
</tr>
<tr>
<td>- Promoting increased sun exposure (at safe levels)</td>
</tr>
</tbody>
</table>

The effects of a mindfulness-based lifestyle program for adults with Parkinson’s disease: a mixed methods, wait list controlled randomised control study

- Improvement in function and wellbeing associated with PD
- Improvements ...activities in daily living and mindfulness were retained at 6-months post intervention
Conclusion

• Integrative Medicine important to approach the larger complex of PD
• Several IM therapies with strong, consistent evidence
• Other areas need to be considered on a case by case basis: nutrient deficiency
• Important to discuss all treatments you are considering so they can be coordinated for optimized care.
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THANK YOU!
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