



Nutrition & its Role in Parkinson's Disease

By Mandy Murphy, RD

January 10, 2013

Objectives

After today, you will be able to:

- Identify components of a plant-based diet & understand how they can serve in PD
- Plan your meals accordingly to optimize drug absorption & avoid interactions
- Make adjustments in meals & foods consumed to deal with common PD conditions
- Know about alternative nutrition therapies for treating PD

Today's Agenda

- Plant-Based Diet
- General Lifestyle Recommendations
- Drug-Interactions & Food Timing
- Combatting Common PD Conditions
- Alternative Treatments for PD
- Questions
(& hopefully answers!)

Mandy's Background & Disclaimer

What is an Registered Dietitian (RD)?

Please consult your personal physician before acting on any of the following recommendations.

The following recommendations are not intended to replace any of your current treatment plans or medications directed by your personal physician.

Today's Agenda

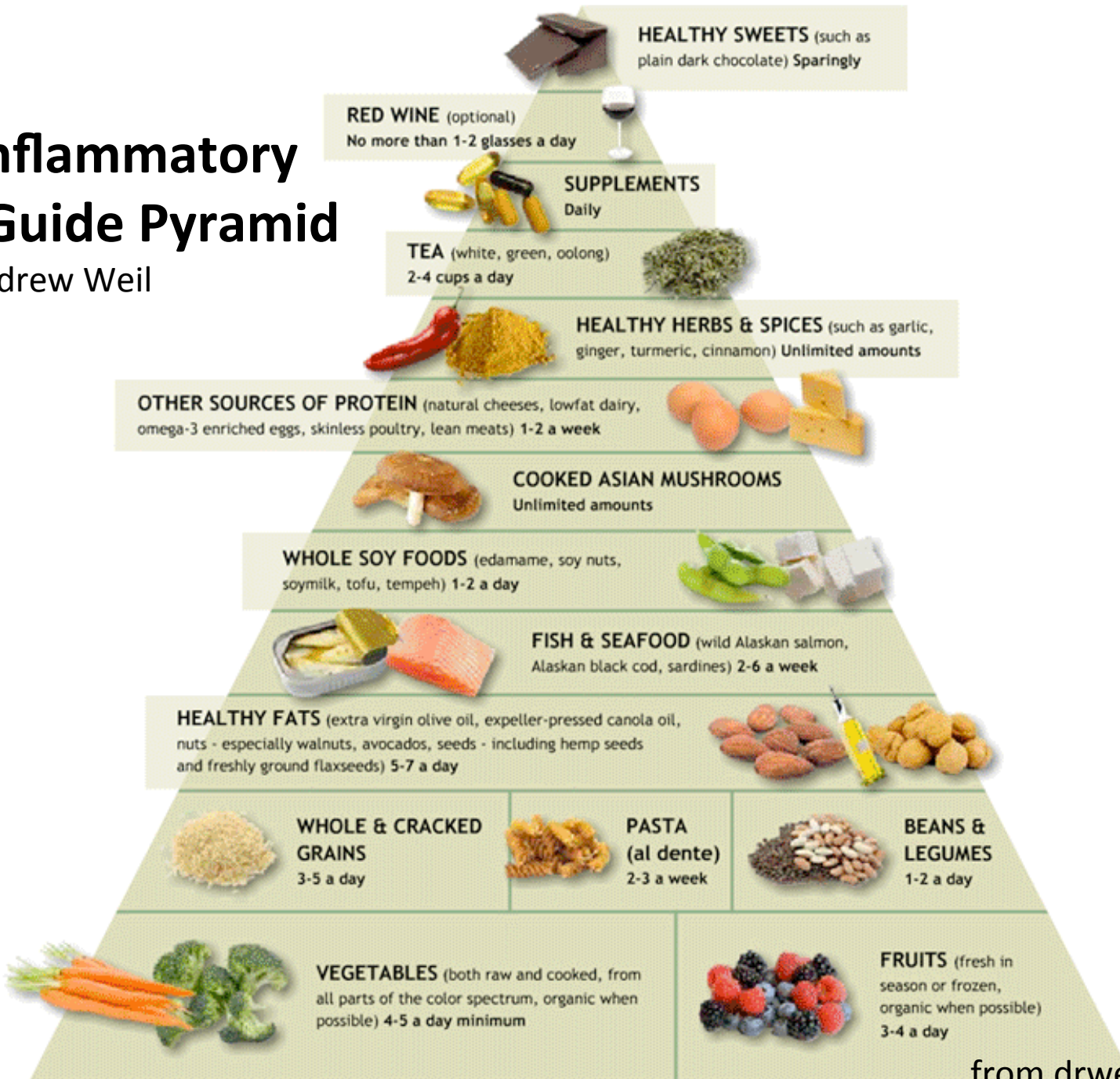
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Why a plant-based diet?

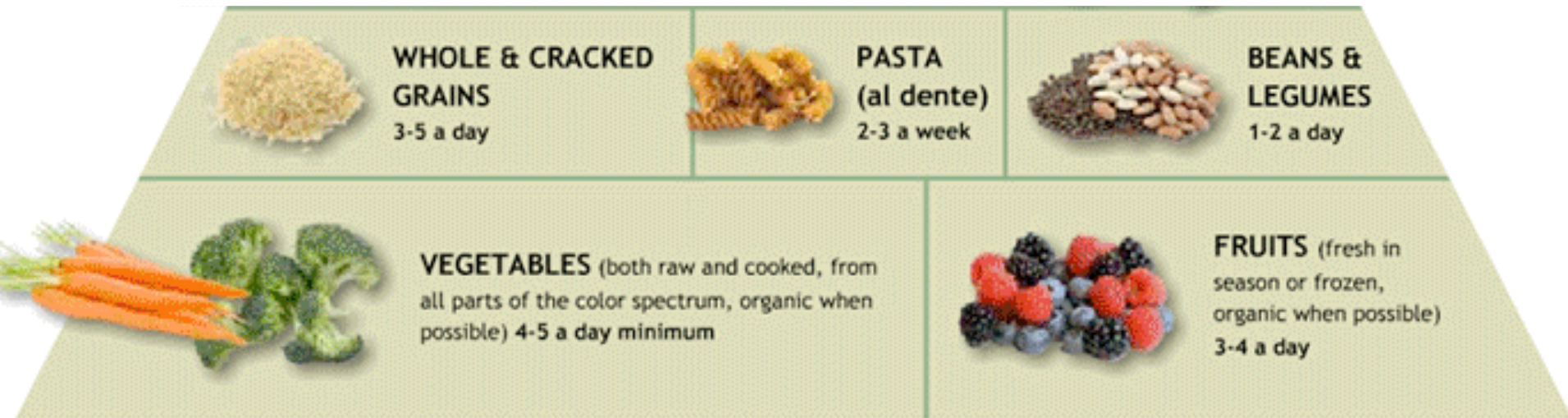
- Nutrient-dense
- High fiber
- Easily manipulated to help with chewing/
swallowing difficulties
- Naturally lower in protein, higher in complex
carbohydrates

Anti-Inflammatory Food Guide Pyramid

by Dr. Andrew Weil



Base of Vegetables, Fruits, Whole Grains & Legumes



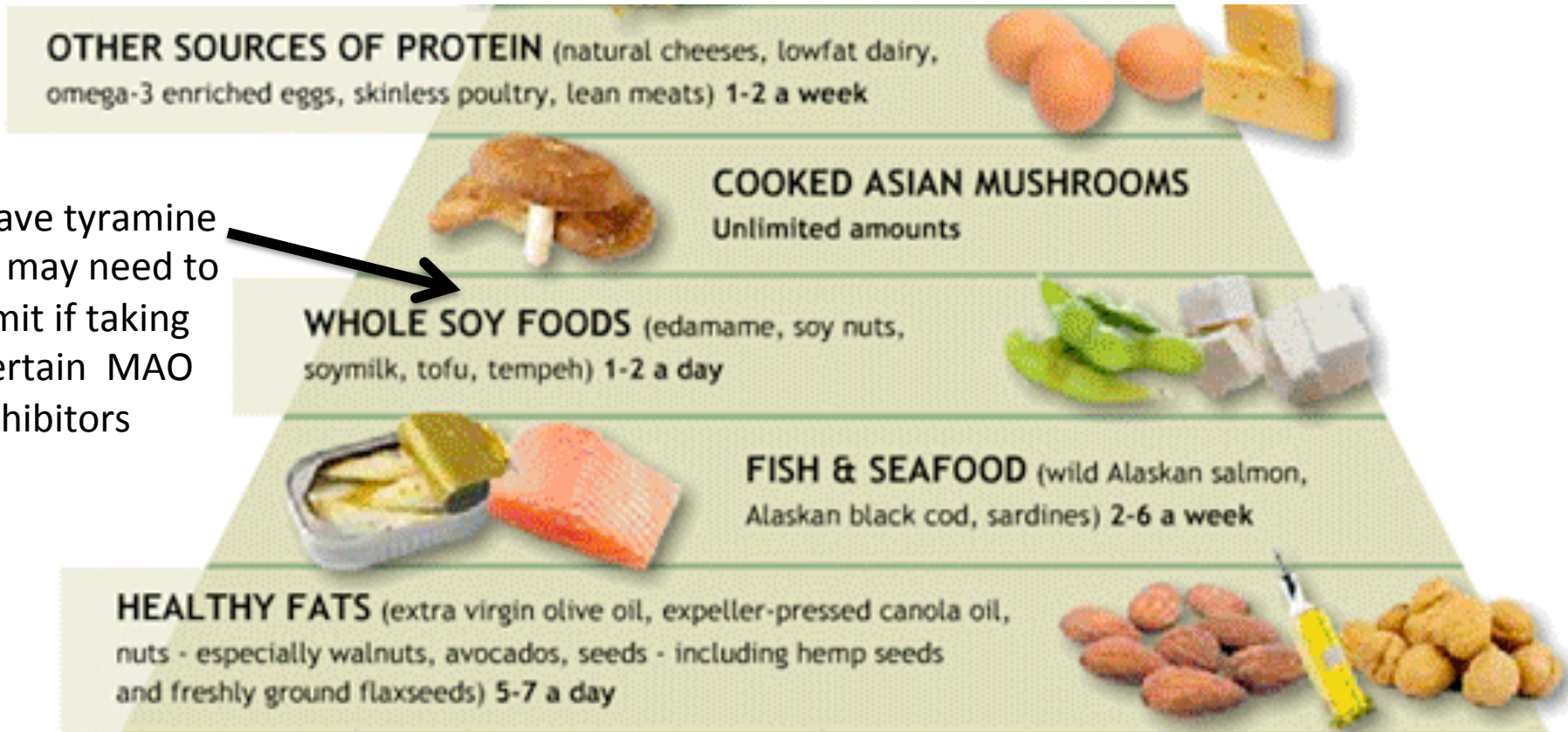
- Add lots of color to every meal by choosing a variety of fruits & vegetables
- Beans & lentils are naturally lower in protein
- Aim for whole, unprocessed grains

What Comes from the Earth



Healthy Fats & Proteins

Have tyramine
& may need to
limit if taking
certain MAO
Inhibitors



- Healthy fat in moderation
- Lower in protein
 - Naturally plant-based diet has carbohydrate to protein ration ranging from 3:1 to 5:1

Finishing off the plate



- Spice it up! Use ginger, turmeric, garlic, cinnamon
- Green tea—source of anti-oxidants & fluids
- Dark chocolate with >70% cocoa solids—source of flavonoids & may boost serotonin levels.

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Lifestyle Recommendations

- Daily gentle exercise & physical activity
 - light hand weights
 - walking
 - Tai chi and/or stretching
- Maintain healthy weight
- Drink sufficient fluids
- Small, frequent meals
- Avoid/limit:
 - caffeine (↑adrenaline),
 - alcohol (disrupts central nervous system),
 - smoking (↑incontinence),
 - sugar & artificial sweeteners,
 - Processed foods

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Protein & Levodopa (L-DOPA)

- 1. Limit overall protein intake & spread evenly** throughout day (0.5 – 1 gram/ kg bodyweight)
- 2. Limit protein throughout day** with increased amounts of protein at evening meal & before bed
- 3. High carbohydrate & low protein**—increase insulin levels, increase transport of amino acids, decrease competition for transport

Vitamin B6 & Levodopa

- Pyridoxine (Vitamin B6) is required for one of enzymes needed for conversion of L-dopa to dopamine
- Diets high in Vitamin B6 may speed conversion of L-dopa to dopamine before it reaches brain, reducing amount that actually reaches brain
- If taking combination medication (e.g. Sinemet), no risk
- Supplements of more than 15mg B6 not recommended

Monoamine Oxidase Inhibitors (MAOIs)

- MAO-B Inhibitors do not restrict tyramine unless taken in high dosages
 - **Rasagiline** (Azilect)
 - **Selegiline** (Deprenyl, Eldepryl, Emsam)
- Traditionally, MAOIs interact with tyramine, which can cause hypertensive reactions:
 - Fermented meats or fish, liver
 - Aged cheese
 - Soybean products
 - Red wine & beer
 - Sauerkraut



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Combating Constipation

- Good gut bacteria/microflora, and probiotics
 - unsweetened, plain yogurt
 - Probiotic supplements
- Sufficient fluid intake
 - Water, unsweetened tea, broth, soups
- High fiber intake
 - Plant-based diet
 - Ground flaxseed
- Movement and physical activity

Optimizing Chewing & Swallowing

- Suck on crushed ice and/or something acidic (small amounts of lemon juice) to stimulate salivary glands 20 minutes before eating
- Try gargling with Alkolol before eating to cut down on mucus production
- Keep chin pointed down while chewing & swallowing
- Take bite-sized portions



Avoiding Acid reflux

- Aim for **small meals** throughout day
- Avoid eating several hours before laying down
- Save larger amounts of liquids for between meals
- Pay attention to **trigger foods**, such as alcohol, caffeine, spicy foods, tomatoes, peppermint, chocolate



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L-Dopa Foods

- Young fava beans
- Mucuna beans (mucuna pruriens, velvet beans)



Glutathione

- Powerful antioxidant & free radical scavenger
- Allows dopamine to become more effective & increases serotonin
- Glutathione IV Drip Trial-David Perlmutter, MD
 - Double blinded, placebo controlled
 - 1400 mg IV drip, 10 minutes, 3x/week
 - 2009 trial in 21 patients for 4 weeks
- Foods
 - Asparagus
 - Avocado
 - Cruciferous vegetables (broccoli, Brussel sprouts, cauliflower, cabbage)



Other treatments to consider

- **Acupuncture/acupressure**—improved nerve function
- **Lymphatic Massage**—improved circulation, relaxation
- **Reflexology**—stimulate blood flow, strengthen Central Nervous System
- **Meditation**—stress reduction



Supplements*

- **Conenzyme Q10**—powerful antioxidant
- **Vitamin C**—antioxidant and free radical scavenger
- **Vitamin D**—bone health, may alleviate depression
- **Vitamin E**—antioxidant, homocysteine reduction
- **Essential fatty acids (DHA & EPA)**—heart and brain health
- **Nicotinamide adenine dinucleotide (NADH)**—improves brain function
- **Probiotic**—optimal microflora/gut bacteria
- **N-acetyl cysteine (NAC)**—increases levels of glutathione
- **Milk thistle**—liver detoxifier

*Please consult with your personal physician before considering any supplements, altering any treatment plan, or determining appropriate dosage

Questions?





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THANKS!

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