

Science-Based Nutrition Programs Compared circa 2019-2020



Nancy B. Emerson Lombardo, Ph.D.

**Adj. Asst. Prof. of Neurology/Boston University
School of Medicine, Alzheimer's Disease Center**

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Why Brain Foods?

- **Delay onset** of Alzheimer's by 5 years by itself...
 - Cut prevalence in half
- **Slow progression** of cognitive impairment
 - For MCI, AD
 - Stroke
 - And perhaps other dementias
- **Improve overall health, quality of life and longevity for everyone**
- **Same foods great for the body**

African Heritage Diet Pyramid



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Progress in Brain Health Nutrition Research

- Brain healthy lifestyles worldwide – **2000+**
 - **Publication- Memory Preservation Diet (MPN) - 2005**
 - In USA, research reaches public-importance of lifestyle in both prevention and treatment of AD-**since 2007**
 - Europe has 3 major nutrition prevention trials, **2010+**
 - First broad diet RCT clinical trial improves cognition-**2013**
 - Alzheimer’s Disease International releases Nutrition and Dementia report **2014**
 - +**FINNISH LIFESTYLE TRIAL** includes **nutrition-July 2014**
 - **AAIC 2015: Nutrition & Exercise Slows AD Pathology**
 - **AAIC 2017- 2019 –World Wide Strategy** – replicate FINGER trial with regional variations and coordinate studies
 - **Australian Mood Studies 2017** – Mediterranean Diet improves mood in just 3 months
- 2019:** Most major AD researchers & some physicians recommend nutrition and lifestyle as primary prevention available NOW



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Memory Preservation Nutrition Program




MPN™

Research-based Brain Healthy Nutrition: with
Practical Application
Menus, Recipes, Pantry Advice









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What is Memory Preservation Nutrition?


- An **evidence-based** nutrition program
- **Cutting Edge** – continually updated
- A **lifestyle program**, not a “diet”
- Based on 7 strategies and **easy to follow** principals
- **Flexible** for any type of cuisine or culture
- **Customizable** to meet individual taste and preference, medical needs and restrictions

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MPN™ - 7 Strategies

1. Increase Amt.& Variety of Anti-oxidants
2. Reduce Insulin Resistance
3. Reduce LDL cholesterol & avoid trans fats, reduce sugar intake.
4. Increase Omega-3s & Healthy Fats
5. Reduce Inflammation
6. Assure adequate B, C, D & E vitamins
7. *Eat probiotics and prebiotics (NEW in 2017!)*



*Disclaimer-Check with your Physician before making dietary changes



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MPN™ Principles

- Whole foods-not processed
 - More plant foods, fewer animal foods
 - Fish or seafood minimum 3x/week
 - Reduce all forms of sugar & refined carbs.; Desserts
 - Avoid transfats & HFCS. Read food labels
 - Spices, Leafy greens, Nuts/Seeds, Omega-3's, Whole Grains Every Day; Beans, Legumes or Lentils several times a week
 - Greater **variety** of foods, in moderation
 - How to maintain healthy gut? Pickles? Probiotics? Prebiotics?
- Consume 3 meals with 1-2 snacks
- “Drink Up!” Hydrate with water, herbal teas % 100% fruit juice
- Supplement if needed-Omega 3s, Vitamins B, D3 & E (all 8 forms vitamin E); Herb/Spice or Veggie/Fruit based supplements.


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MPN™ Goals for Brain Healthy Eating

- HEALTHY FATS – Daily
- SPICES/HERBS – Daily
- PROBIOTICS & PREBIOTICS - Daily
- WHOLE GRAINS – 70% of All Grains
- FISH/SEAFOOD – 3-5x/Week
- POULTRY – 2-4x/Week
- EGGS – 5+/Week
- RED MEAT – 1x or Less/Wk-Month
- BEANS/LENTILS – 5+x/Week
- NUTS/SEEDS – 5+x/Week © 2017 Nancy Emerson Lombardo
- VEGETABLES – 5-7+x/Day-vary & root veg.
- LEAFY GREENS – 1-3x/Day
- FRUIT (esp. Berries) – 3-5x/Day (Juice <4-6 oz/day)
- ADDED SUGAR – W <5-6tsp; M<8-9tsp*



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Brain Foods & Brain Busters

- There are 100s of delicious foods that can help protect the brain and enhance brain power
- Combinations of foods such as Mediterranean, DASH, MIND, Nordic or MPN diets are more potent than single brain foods
- There are fewer but very prevalent foods that actively harm the brain, especially when eaten in excess: sugar, trans fats, nitrates, refined carbs
- Thus important to increase use of brain foods as well as decreasing use of brain toxins



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COMPARING BRAIN FOODS DIETS

- More about Nordic Prudent diet
- Comparing MPN, Mediterranean, DASH, MIND diets



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MIND Diet May Be Better than Mediterranean or DASH for cognition

- Martha Clare Morris, ScD – epidemiologist Chicago
- Combines elements of Med Diet and DASH Diet with other elements gleaned from her own research
- Developed “Point” System and Applied to Existing Data Bases. Limitations are low frequency of brain foods.
- This was a cohort or “circumstantial evidence” study similar to Columbia’s Med Diet studies.
- Smaller base of evidence than the MPN, several similarities (leafy greens) and some differences
- Positive results confirmed by independent studies using different data bases...6,000 and 7,000 people



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1st US Clinical Trial Fall 2016 :MIND

- Martha Clare Morris, ScD Rush University
- NIA \$14.5 Grant + Private funding
- Can a particular diet, MIND diet, prevent Alzheimer’s disease?
- Phase 3 trial, 5 year
- 600 ppl, 65+ years old
 - Sub par diet & Overweight
 - At risk for Alzheimer’s
- Sites: U of Chicago, Harvard Univ. Public Health-Boston – Study underway nearly 2 years



In Memoriam



MIND will be nutrition part of US POINTER

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Nordic Diet Shows Potential Better than MIND or Mediterranean for Swedes

- Nordic Prudent Dietary Pattern appears better than the MIND, Mediterranean or DASH diets in lowering risk of cognitive decline in 2,200 elderly Swedes; all better than unhealthy diet with processed foods, excess bad fats & sweets.
- Healthy Nordic Diet includes: **Eating more:** non-root vegetables, certain fruits - pears, apples, peaches, fish and poultry, canola oil, tea, water, and wine. **Eating less:** root vegetables, refined grains/cereals, butter/margarine, sugar/sweets/pastries, & fruit juice.
- Conclusion: **there are many brain healthy diets;** most of them rely on traditional whole foods and minimize processed and sugary foods, emphasize nutrient rich foods.



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Nordic Prudent Diet Pattern includes:

- **More frequent** consumption of non-root vegetables, apple/pears/peaches, whole grain pasta/rice, poultry, fish, vegetable oils (especially CANOLA OIL, rich in Omega3's and mono-unsaturated fats), tea and water, and light to moderate wine intake.
- **Less frequent** intake of root vegetables, refined grains/cereals, butter/margarine, sugar/sweets/pastries, and fruit juice.
- Weili Xu, MD, Ph.D., et al. at Karolinska Institute in Sweden
- Which Dietary Index May Predict Preserved Cognitive Function in Nordic Older Adults? (Funder(s): CoSTREAM project; EU's Horizon 2020 Research & Innovation Programme) AAIC July 2017 London, England



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Nordic Diet As Used in FINGER Trial

- 3 Individual counseling sessions (w/ study nutritionist year 1)
 - tailoring of the participant's daily diet
- 6 group sessions in Yr 1 & 1-3 in Yr 2).
 - information & support to facilitate change; include discussions and practical exercises, such as tools to assess one's own dietary behavior (e.g., fat or fiber intake).
- Diet is based mainly on the Finnish Nutrition
 - 10–20% of daily energy (E%) from proteins, 25–35E% from fat ; 45–55E% from carbohydrates 25–35 g/day dietary fiber, <5 g/day salt, and <5E% from alcohol.
- Food & nutrient intake is assessed by FFQ & 3-day food records at baseline, 12 & 24 months.

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Nordic Diet in FINGER Trial -2

- **Specific Goals:**
 - 25–35E% from HEALTHY fats
 - <10E% from saturated plus transfatty acids,
 - 10–20E% from monounsaturated fatty acids,
 - 5–10E% from polyunsaturated fatty acids
 - [including 2.5–3 g/day n-3 fatty acids],
 - 45–55E% from carbohydrates (<10E% refined sugar), 25–35 g/day dietary fiber.
- **Recommendations:**
 - High consumption of fruit and vegetables;
 - Whole grain in ALL cereal products;
 - Low-fat options in milk and meat products;
 - Sucrose intake <50 g/day;
 - Use vegetable margarine and rapeseed (canola) oil instead of butter
 - Fish: consume 2+/week – or daily fish oil supplement if not consuming enough fish
 - Vitamin D : 10–20 µg/day

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Comparing Brain Healthy Diet Programs: MPN, Med, Dash, MIND: Highlights




Item	MPN	MIND	Medit'rn	DASH
Database	Broad: 30 yrs of epidem., animal, lab, RCTs & neuroscience	Mostly epidemiological incl. Chicago, Nurses Study	Epidem. & Clinical Trials – Predi-Med	Clinical Trials for Heart, Epid for brain
Antioxidants	Eat more, a variety. Includes tested foods lower A-beta	Not emphasized	Not emphasized	Not emphasized
Inflammation	Central strategy supported by all Recom'd foods & strategies	silent	silent	silent
Omega 3's/O-6	Restore balance, more O-3/fewer O-6; Fish 3-5/wk	Fish 1 x/week, no mention O6	Fish 6+/week No mention O6	No separate fish or O3 or O6 recom.
Control LDL Cholesterol	Limit Sugar, eat foods to lower	silent	silent	silent

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Comparing Brain Healthy Diet Programs:




Item	MPN	MIND	Medit'rn	DASH
Leafy Greens	1-2+/day, most imp't veg. O-3, B vit, Vit E, anti-ox. Cooked, or raw,	6+/wk; Green salad daily, key for brain health	No special mention typical to include lots	No special mention, included in Veg
Fruits	3-5/day. Whole fruits, limit juices Berries are stars for brain; Apples boost acetyl choline	Silent except for Berries ½ cup/day	3+/day, doesn't single out berries	4+/day Eat lots of fruit, ditto re berries
Spices/ Herbs	Increase amounts, eat daily, variety, anti-inflammatory & high in anti-oxidants	silent	silent	silent
Sweets, Sugar	Limit, AHA limits on added sugar, change recipes, fruit for dessert	Less than 5 Pastries/week	Least frequent food to eat, use fruit as dessert	Tight limits <=5/ week 1 TB =1 serving
Probiotics, Prebiotics	Another key to brain health	silent	silent	Silent
Grains	1+/day; 70%+ whole grains	3 servings/day all whole grains	Typical to have some every meal	6-8 serv/ day, 1/3 whole

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 **Table#3-Comparing Brain Healthy Diet Programs**


Item	MPN	MIND	Medit'rn	DASH
Nuts & Seeds	1 oz+/daily	5+/week (1 oz)	Combined with beans: 6+/week Predimed 6+ nuts	Lumped Nuts, seeds & beans
Beans & Lentils	3-5+/week	4/week (1/2 cup)	PLUS beans 3+	4+/week
Combined N&B	10+/week	9+/week	6-9+/week	4-5/week
Fats & Oils	2-4 TB olive oil, fish oil, flax, coconut, lim sat Avoid Transfats	1+ TB olive oil/day Mono & Polysat Limit Sat fats Max butter 1 TB	Olive oil primary oil 2-4 TB	Low-fat, no mention of healthy oils
Other Vegetable	5-7+/day, all types, key to brain health, more impnt than fruits esp leafy greens	1-2+/day -least emphasis on veg	4-5 servings/ day	4-5/day all kinds given equal weight

Maintain health blood sugar & insulin resistance, fruit for dessert
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 **Table#4-Comparing Brain Healthy Diet Programs**



Item	MPN	MIND	Medit'rn	DASH
Red Meat (Beef, Pork, Lamb)	<1/week or <1/ month, avoid nitrates	Limit intake, no mention of nitrates	Less than other animal foods, free range,wild	Lean meats, lumps with poultry, fish— total <6/wk
Poultry	2-4+/week	2+/week	<3x/week	Lumped with meat
Eggs	Up to 7/week free range or 03	silent		Lumped with meats
Dairy	Limit, healthy ch. +GK yogurt, ferm	Lo fat dairy, <u>full fat cheese</u> <1/week Butter: 1 TBsp/day	Low fat dairy, <1.5 full fat dry	Low fat dairy, 2x/day, silent re probiotics

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Table # 5-Comparing Brain Healthy Diets

Item	MPN	MIND	Medit'rn	DASH
Hydration	Water daily, occasional wine, esp. red wine	1 glass wine other alcohol daily	1 glass wine/ day	Silent
Vitamins	Supplement B complex, D, E and C	Silent	Silent	Silent
Sodium	Follow heart healthy limit of 2300, or 1500 with heart risk factors; reduce, Use seaweed	Silent	Silent	Major emphasis on sodium reduction. Limit to < 2400mg/ day; no mention seaweed


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Future Brain Foods Research

African Heritage Diet Pyramid

Mediterranean Diet , MIND Diet, Alz Prevention Diet, MPN, Nordic - More Trials.

- Other Heritage e.g. African Heritage better?
- Closer look at spices, herbs, hot peppers
- Boost anti-oxidant & anti-inflammatory foods
- How to offset toxicity of sugar
- Probiotics, prebiotics & healthy gut
- If auto-immune disease, which foods help?
- What about fasting, if afflicted?
- Liver & bile acid dysfunction –
 - how to prevent, treat




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Contact:

nemerson@brainwellness.com

nemerson@bu.edu

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