




Overview of MIND Diet

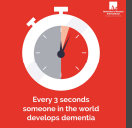
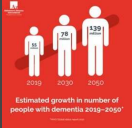
-  Emphasizes natural plant-based foods
-  Limits intakes of animal and high saturated fat foods
-  Rich in antioxidants, which can reduce oxidative stress

Possible Benefits

- Lower risk of dementia and Alzheimer's disease
- Slow brain aging
- Reduce inflammation
- Improve heart health
- Improve blood sugar control
- Lose weight
- Longer lifespan

Health Concerns & the Brain

- Alzheimer's disease/dementia
 - More than 6 million Americans are living with Alzheimer's disease
 - 6th leading cause of death in US




- Researchers wanted to examine foods and their effect on brain health.
- Led to the development of the MIND diet
 - Components from the Mediterranean and DASH diets with modifications based on previous nutrition research and the aging brain.



Green Leafy
Vegetables

At least 6 servings a week
(1 serving = 1 cup raw or ½ cup cooked)




- Spinach
- Kale
- Collards
- Mustard Greens
- Arugula

★
NUTRIENTS

Folate, vitamin E, vitamin K, carotenoids and flavonoids

Other Vegetables

At least 1 serving a day
(1 serving = ½ cup)



- Asparagus
- Broccoli
- Brussels sprouts
- Carrots
- Cauliflower
- Green Beans
- Mushrooms


- Onions
- Snow peas
- Squash
- Bell peppers
- Sweet potatoes
- Tomatoes

★
NUTRIENTS

Fiber, folate, potassium, vitamin A, vitamin C

Nuts

At least 5 servings a week
(1 serving = 1 oz)




1 oz =

24 almonds	12 macadamia nuts
18 cashews	35 peanuts
12 hazelnuts	15 pecan halves
8 Brazil nuts	14 walnut halves

NUTRIENTS
Fiber, magnesium, omega fatty acids

Berries

At least 2 servings a week
(1 serving = ¼ cup)




- Blackberries
- Blueberries
- Raspberries
- Strawberries

NUTRIENTS
Fiber, vitamin C, antioxidants

Beans and Legumes

At least 3 servings a week
(1 serving = ¼ cup)




- Black beans
- Pinto beans
- Cannellini beans
- Garbanzo beans
- Kidney beans
- Red/white beans
- Edamame

NUTRIENTS
Protein, fiber, folate, iron, phosphorus

Whole Grains

At least 3 servings a day
(1 serving = 1/2 cup or 1 slice)




- Whole grain bread
- Brown rice
- Wild rice
- Whole grain pasta
- Quinoa
- Barley
- Bulgur
- Farro
- Oats
- Whole grain cereal

NUTRIENTS
Fiber, iron, B vitamins, folate, selenium, potassium, magnesium

Fish

At least 1 serving a week
(1 serving = 3 to 5 oz)



- Salmon
- Tilapia
- Cod
- Halibut
- Mahi mahi
- Canned tuna

*Not fried

NUTRIENTS
Protein, omega fatty acids, iron, vitamin D

Poultry

At least 2 servings a week
(1 serving = 3 to 5 oz)



- Skinless chicken breast
- Skinless turkey breast

NUTRIENTS
Protein, vitamin B12

Extra Virgin Olive Oil


NUTRIENTS
Omega fatty acids, vitamin E

2 Tablespoons a day
Use as primary oil source

- Extra virgin olive oil

Use in:

- Salad dressings
- Sautéing
- Roasting vegetables and potatoes
- Dip for bread




Alcohol/Wine

NUTRIENTS
Resveratrol

1 serving a day
(1 serving = 5 oz wine)

- Red wine
- Purple grape juice or red grapes can be substitute
- *Consult with your doctor before starting to drink alcohol




Foods to Include Summary

Foods to Include	Minimum Frequency
Green Leafy Vegetables	≥6 servings a week
Other Leafy Vegetables	≥1 serving a day
Whole Grains	≥3 servings a day
Extra Virgin Olive Oil	≥2 Tablespoons a day
Nuts	≥5 servings a week
Berries	≥2 servings a week
Beans and Legumes	≥3 servings a week
Fish	≥1 serving a week
Poultry	≥2 servings a week
Alcohol/Wine	1 serving a day



Red Meat and Processed Meat

Less than 4 servings a week
(1 serving = 3 to 5 oz)



- Beef
- Lamb
- Pork
- Ham
- Burgers
- Hot dogs
- Sausage
- Bacon
- Roast beef
- Salami

Butter and Stick Margarine

Less than 1 Tablespoon a day



- Butter
- Stick margarine

Regular Cheese

Less than 1 serving a week
(1 oz = 1 slice cheese, 1 cheese stick, or ¼ cup shredded cheese)

Full fat cheeses:

- Cheddar cheese
- Colby cheese
- Swiss cheese
- Mozzarella cheese



Pastries and Other Sweets

Less than 5 treats a week


- Cake
- Sweet rolls
- Donut
- Cookies
- Brownies
- Pie
- Candy
- Ice cream
- Pudding



Fried Foods and Fast Foods

Less than 1 time a week

- Fast food
- Fast casual restaurants
- Chicken strips
- Onion rings
- French fries
- Mozzarella sticks
- Potato chips



Foods to Limit Summary

Foods to Limit	Maximum Frequency
Butter and Stick Margarine	<1 Tablespoon a day
Red Meat and Processed Meat	<4 servings a week
Regular Cheese	<1 serving a week
Pastries and Other Sweets	<5 treats a week
Fried Foods and Fast Foods	<1 time a week

Evidence Behind MIND Diet

Development of MIND Diet

- MIND diet first established and researched in 2014
- MIND diet score of 0-15 (high quality) was created to target nutrients related to cognitive decline and incident dementia


"MIND Diet Score More Predictive than DASH or Mediterranean Diet Scores" published in *Alzheimer's & Dementia*

MIND	
MIND Component	Max Score
Whole Grains (≥3x/wk)	1
Green Leafy (≥1x/wk)	1
Other Vegetables (≥1x/d)	1
Beans (≥3x/wk)	1
Red Meats and processed (≤1x/wk)	1
Fats (≤1x/wk)	1
Woolly (≤1x/wk)	1
Beans (≤1x/wk)	1
Nuts (≤1x/wk)	1
Fast Food (≤1x/wk)	1
Oliva Oil primary oil	1
Beans, soybeans (1x/d)	1
Olives (1x/wk)	1
Publica, avocad (1x/wk)	1
Alcohol (none to 1)	1
Total MIND Score	10

Calculate Your
MIND Diet
Score


MIND	
MIND components	Max Score
Whole Grains ≥3/d	1
Green Leafy ≥6/wk	1
Other Vegetables ≥1/d	1
Berries ≥2/wk	1
Red Meats and products <4/wk	1
Fish ≥1/wk	1
Poultry ≥2/wk	1
Beans ≥3/wk	1
Nuts ≥5/wk	1
Fast fried food <1/wk	1
Olive Oil primary oil	1
Butter, margarine <1/d	1
Cheese <1/wk	1
Pastries, sweets <5/wk	1
Alcohol/wine 1/d	1
Total MIND Score	15

MIND Diet &
the Brain



- "MIND Diet Associated with Reduced Incidence of Alzheimer's Disease" published in *Alzheimer's & Dementia* in 2015
- 923 participants with no AD at baseline completed food frequency questionnaire and at least two neuropsychological assessments
- Participants in top tertile (8.5-12.5) of MIND diet score had **53% reduction** in the rate of developing AD compared to the lowest tertile (2.5-6.5).
- Participants in the middle tertile (7.0-8.0) had **35% reduction** in AD rate compared to the lowest tertile.

MIND Diet &
the Brain

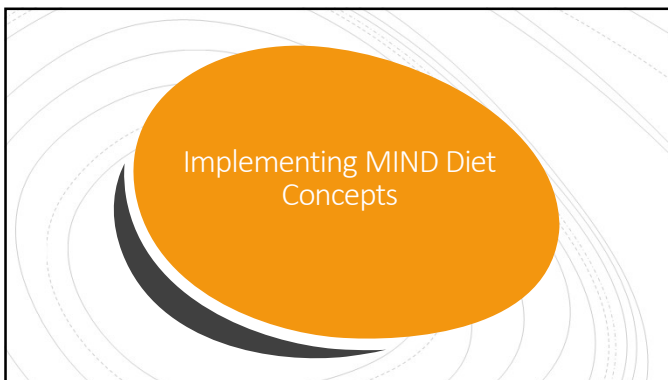


- "The Mediterranean, Dietary Approaches to Stop Hypertension (DASH), and Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) Diets Are Associated with Less Cognitive Decline and a Lower Risk of Alzheimer's Disease - A Review" published in *Advances in Nutrition* in 2019
- Observational studies indicate that the MIND diet may be more protective against cognitive decline and AD than the Mediterranean and DASH diets.
- More evidence on the MIND diet is required to draw firmer conclusions.



MIND Diet & the Brain

- "Adherence to the MIND diet is associated with 12-year all-cause mortality in older adults" published in *Public Health Nutrition* in 2020
- 882 participants from Lothian Birth Cohort completed FFO at baseline and then follow up assessments every 3 years with mean follow up time of 12.1 years
 - 206 deaths at 12.1 years (23%)
- Adjusting for age, sex and energy intake, MIND diet was associated with lower risk of mortality at 12 year follow up (HR 0.81; 95% CI 0.74, 0.88, $p < 0.001$) while traditional diet had a higher risk of mortality (HR 1.30; 95% CI 1.13, 1.49, $p = 0.001$).
- In fully adjusted model which additionally adjusted for health variables, associations with MIND diet remained significant (HR 0.88; 95% CI 0.79, 0.97, $p = 0.01$).
 - Risk of death was reduced by 12% per unit increase in MIND diet score



Implementing MIND Diet Concepts



How to Make Changes

- Choose ONE thing to change at a time
- Write down your goal and monitor progress
- Find an accountability partner
- Be open to trying something new

Change Happens One Step at a Time

Where to Start

- Food groups**
 - Am I missing a main food group?
 - Can I make healthier choices in a particular food group?
- Snacks**
 - What do I choose for snacks?
 - What do I keep on hand for snacks?
- Beverages**
 - Can I reduce intake of sugary beverages?
 - How can I drink more water?
- Eating out**
 - How often do I eat out?
 - Can I choose a healthy side item instead of French fries?

Example Day

- Breakfast:**
 - 6 ounces Greek yogurt topped with 1/4 cup blueberries and 1/4 cup strawberries
 - 1 slice whole-grain toast with half an avocado, mashed
- Snack:** raw vegetables with hummus
- Lunch:**
 - 2 cups bean chili with zucchini and peppers
 - 1 oz whole grain dinner roll
- Snack:** 1 oz almonds, unsalted
- Dinner:**
 - 4 ounces salmon
 - 1/2 cup couscous
 - Salad using 1/2 cup arugula, 1/4 cup spinach, and 2 tablespoons vinaigrette/olive oil dressing
 - "8 oz red wine"

Summary

- MIND diet may protect against cognitive decline, dementia, and Alzheimer's disease
- Higher MIND diet scores may provide extra benefit
- Closer adherence to MIND diet may lower all-cause mortality
- Start with one change at a time!





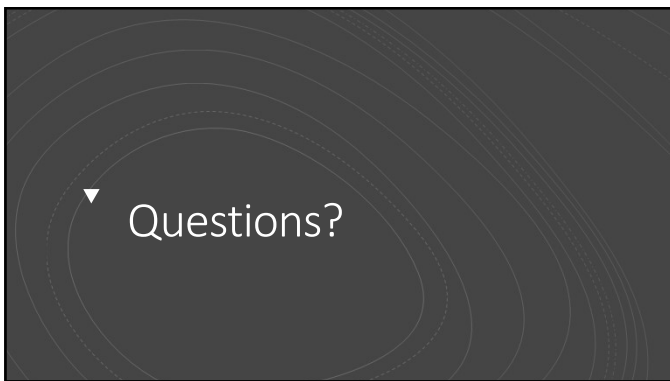
Resources

- Recipes:
 - MIND Diet Recipes for Alzheimer's Prevention (verywellfit.com)
 - MIND Diet Meals – (minddietmeals.com)
 - MIND Diet Recipes Archives – Oat&Sesame (oatandsesame.com)



References

- Corley J. Adherence to the MIND diet is associated with 12-year all-cause mortality in older adults. *Public Health Nutr.* 2020 Sep 3:1-10. doi: 10.1017/S1368890020002878.
- Morris MC, Tangney CC, Wang Y, Sacks FM, Bennett DA, Aggarwal NT. MIND diet associated with reduced incidence of Alzheimer's disease. *Alzheimer's & Dementia.* 2015;11(9):1007-1014. doi: 10.1016/j.jalz.2014.11.009
- Morris MC, Tangney CC, Wang Y, et al. MIND Diet Score More Predictive than DASH or Mediterranean Diet Scores. *Alzheimer's & Dementia.* 2014 July;10(4):168. doi: 10.1016/j.jalz.2014.04.164.
- van den Brink AC, Brouwer-Brolsma EM, Berendsen AAM, van de Rest O. The Mediterranean, Dietary Approaches to Stop Hypertension (DASH), and Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) Diets Are Associated with Less Cognitive Decline and a Lower Risk of Alzheimer's Disease—A Review. *Adv Nutr.* 2019 Nov 1;10(6):1040-1058. doi: 10.1093/advances/nmz054.



Questions?
