



The MIND diet and how it might contribute to brain health

In the discussion of dietary solutions to prevent dementia, a commonly accepted concept is “what’s good for the heart is good for the brain”: the better a person’s cardiovascular health is, the less likely one is to develop Alzheimer’s disease ¹. Among existing eating cultures, the Mediterranean diet has received widespread attention for its association with the reduction of mortality from cardiovascular diseases ². In recent years, the research on dietary pattern has taken a step forward to promote brain health by introducing the Mediterranean-Dietary Approaches to Stop Hypertension Diet Intervention for Neurodegenerative Delay (MIND) diet. The diet is designed to reduce the risk of dementia through maintaining cardiovascular health, and by incorporating other protective nutrients, maximizing the effect of healthy dietary pattern ³.

The MIND diet is a hybrid of the Mediterranean eating and a diet designed to control hypertension, with modification made in accordance with recent research findings of food-related to brain health. On top of olive oil, nuts, whole grains, fish, beans and wine, as recommended in the Mediterranean diet, the MIND diet weighs more on green leafy vegetables and berries than other vegetables and fruits ⁴. The researchers put an “adherence score 0.5” or “adherence score 1” to the corresponding categories of food with different frequency and amount of consumption, summing up the adherence scores of all food consumption results in one’s total adherence score. They, based on the findings of 923 older subjects, identified three levels of adherence to the diet: the high adherence group with mean total score 9.6, moderate adherence group with mean total score 7.5, and low adherence group with mean total score: 5.6. Over the course of 4.5 years in average, they reported that, comparing with the low adherence group, those who had high adherence had a 53% reduction in the rate of developing Alzheimer’s disease, and the moderate adherence group also had a 35% reduction. The table below summarizes the calculation of the MIND diet adherence score.



	Diet component	Examples	Frequency and amount of intake	
			Score 0.5	Score 1
Brain healthy food groups	Green leafy vegetables	Kale, collards, spinach, lettuce	>2 to <6/ week	≥6 servings/ week
	Other vegetables	Eggplant, carrots, peppers, tomatoes, celery, broccoli	5 to <7/ week	≥1 serving/ day
	Berries	Blueberries, strawberries	1/ week	≥2 servings/ week
	Nuts	Walnuts, almonds	1/ month to <5/ week	≥5 servings/ week
	Whole grains	Quinoa, red rice, whole grain bread	1 to 2/ day	≥3 servings/ day
	Fish (not fried)	Tuna sandwich, mackerel, salmon	1 to 3/ month	≥1 meal/ week
	Beans	Soybeans, lentils	1 to 3/ week	>3 meals/ week
	Poultry (not fried)	Chicken, turkey	1/ week	≥2 meals/ week
	Wine	-	1/ month to 6/week	1 glass/ day
	Olive oil	-	N.A.	Consume as the primary oil
Unhealthy food groups	Butter and margarine	-	1 to 2/ day	<1 teaspoon/day
	Cheese	-	1 to 6/ week	<1 serving/ week
	Red meat and meat products	Burger, steak, pork, sausages	4 to 6/ week	<4 meals/ week
	Fast food/ fried food	French fries, chicken nuggets	1 to 3/ week	<1 time/ week
	Pastries and sweets	Cookies, candy, ice cream, cakes	5 to 6/ week	<5 servings/ week
			Total score	15

Morris, Tangney, Wang, Sacks, Bennett, Aggarwal⁵

The consumption of green leafy vegetables, such as lettuce, spinach, kale, collards, and other greens, was found to have a strong, inverse association with cognitive decline in a prospective cohort study. Monitoring the dietary habit and cognitive performance of 3,718



participants aged 65 years and older, researchers of the Chicago Health and Aging Project compared the association between a broad range of fruits and vegetables and the changes in cognitive performance over a period of six years. They found that the consumption of green leafy vegetables had the strongest inverse link with cognitive decline, followed by some yellow vegetables (e.g. zucchini, eggplant) and broccoli. Since vitamin E had been found to have an inverse association with the risk of cognitive decline, and green leafy vegetables are rich in vitamin E, a higher consumption of them may delay cognitive decline ⁶.

Berries contain an abundant amount of anthocyanidins, a flavonoid found to be beneficial to brain regions which are important for learning and memory ⁷. Researchers of the Nurses' Health Study in Massachusetts investigated the flavonoid intake and the rate of cognitive decline in a prospective cohort study with a sample of 16,010 women aged 70 and above. They reported that those who had a high consumption of berries (e.g. blueberries, strawberries) had a slower rate of cognitive decline than their peers, which was equivalent to up to 2.5 years of normal cognitive decline ⁸.

The MIND diet adds value on the Mediterranean diet in the sense that it specifies certain categories and amount of vegetable to take so that people have an easier guideline to follow in order to achieve healthy diet. The designers of the MIND diet suggest a weekly consumption of at least six servings of green leafy vegetables and no less than two servings of berries, while, to obtain benefit from the diet, an overall adherence of the MIND diet should be adopted. That includes sufficient intake of vegetables other than green leafy, whole grains, fish, poultry, nuts and beans. People are also recommended to cut back on fast food, which is perhaps the most contradictory to both the Mediterranean eating philosophy and common perception of healthy eating ⁵.

References

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