



Dementia Prevention through Nutrition and Exercise

Ozark Center Behavioral Health

Valerie Goodale FNP-BC, PMHNP-BC





Objectives

- Discuss nutrients, foods, and diets that show potential for dementia prevention as it relates to modifiable risk factors for dementia
- Discuss the benefits of exercise towards dementia prevention
- Discuss the type of exercise needed to improve brain function



Modifiable Risk Factors for Dementia Prevention

- Hypertension
- Obesity
- Smoking
- Physical Inactivity
- Excessive Alcohol Use
- Substance Abuse



Modifiable Risk Factors for Dementia Prevention



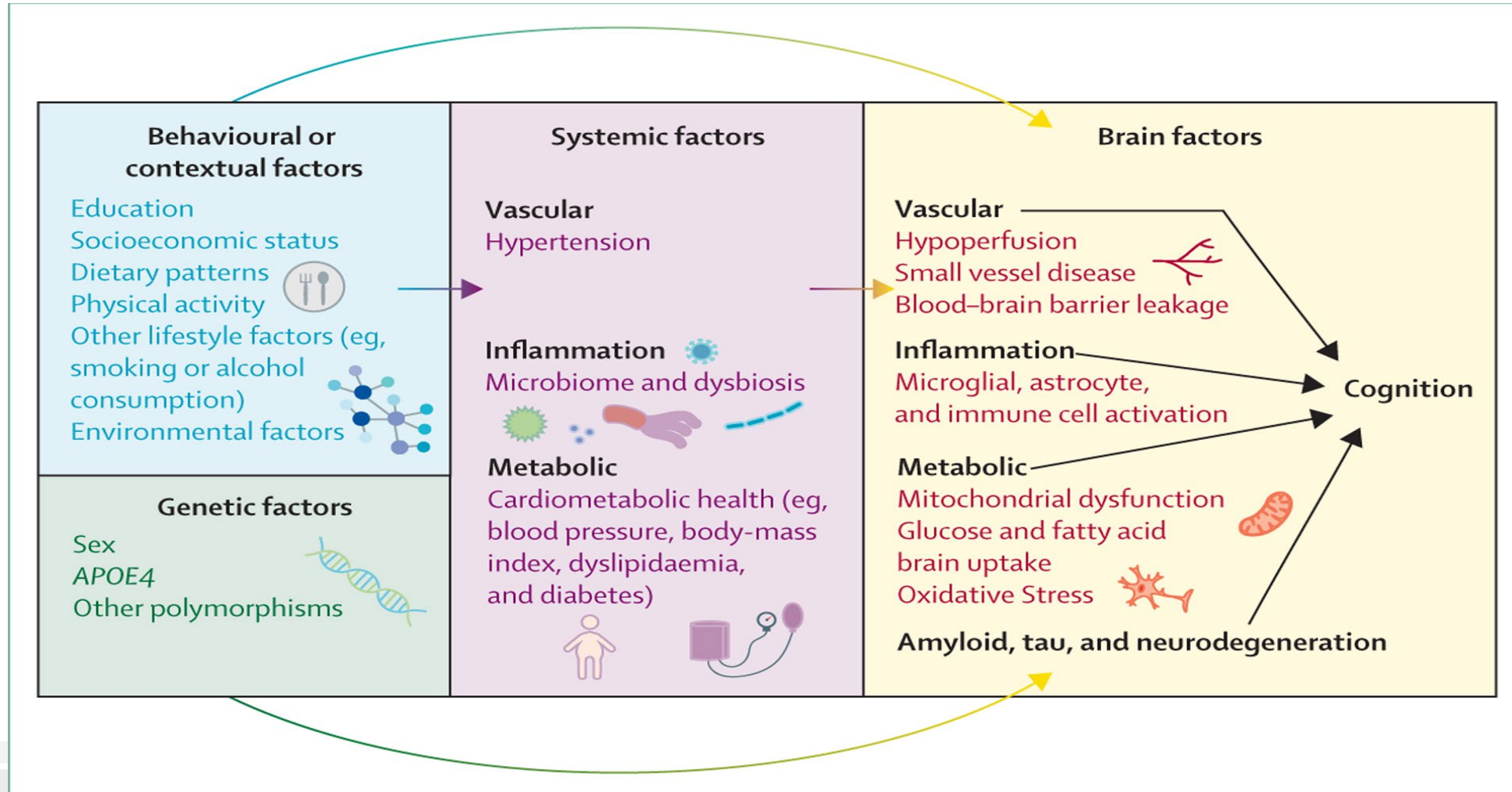
Did you know that there are known risks for **Alzheimer's disease and related dementias**?

not enough aerobic physical activity	cigarette smoking	excessive alcohol use	obesity
hypertension	diabetes	depression	hearing loss

Keep your brain healthy!
Talk to your health care provider about things you can do to reduce your risk

 bit.ly/mm7120a2 **MMWR**
MAY 20, 2022

Biological Pathways Between Cognition and Diet





Dietary Approaches to Dementia Prevention








- Mediterranean Dietary Approach to Hypertension (DASH diet)
- Neurodegenerative Delay (MIND) diet

(Yassine et al., 2022)

Dietary Approaches to Dementia Prevention

DASH Eating Plan

The Benefits: Lowers blood pressure & LDL "bad" cholesterol.

 Eat This	 Limit This
 Vegetables	 Fatty meats
 Fruits	 Full-fat dairy
 Whole grains	 Sugar sweetened beverages
 Fat-free or low-fat dairy	 Sweets
 Fish	 Sodium intake
 Poultry	
 Beans	
 Nuts & seeds	
 Vegetable oils	

www.nhlbi.nih.gov/DASH

BRAIN HEALTHY MEAL PLAN RECOMMENDATION

PACIFIC NEUROSCIENCE INSTITUTE®

THE MIND DIET

15 dietary components: 10 brain-healthy foods to focus on; 5 food groups to limit

HEALTHY FOOD GROUPS

 **AT LEAST THREE SERVINGS OF WHOLE GRAINS EACH DAY**

AT LEAST ONE SERVING OF GREEN LEAFY VEGETABLES & ONE OTHER VEGETABLE EACH DAY



BERRIES AT LEAST TWICE A WEEK

AT LEAST FIVE ONE-OUNCE SERVINGS OF NUTS A WEEK



BEANS OR LEGUMES AT LEAST FOUR TIMES A WEEK

FISH AT LEAST ONCE A WEEK
Avoid high-mercury fish: Mackerel (King), Marlin, Orange Roughy, Shark, Swordfish, Tilefish, Ahi Tuna



POULTRY AT LEAST TWICE A WEEK



USE OLIVE OIL AS ADDED FAT



NO MORE THAN ONE GLASS OF WINE A DAY
In addition, with clinical guidance, add nutrients such as Omega-3 fatty acids and curcumin; monitor Vitamin D and B12 levels.

FOOD GROUPS TO LIMIT



RED MEAT LESS THAN FOUR TIMES A WEEK

Including beef, pork, lamb, and products made from these meats

NO MORE THAN ONE TABLESPOON A DAY OF BUTTER OR MARGERINE



CHEESE & FRIED FOOD/FAST FOOD NO MORE THAN ONCE A WEEK

LIMIT PASTRIES AND SWEETS TO LESS THAN FIVE TIMES A WEEK



The Mind Diet

- <https://www.youtube.com/watch?v=hoPg4bkKemQ>

(Mayo Clinic, 2023)



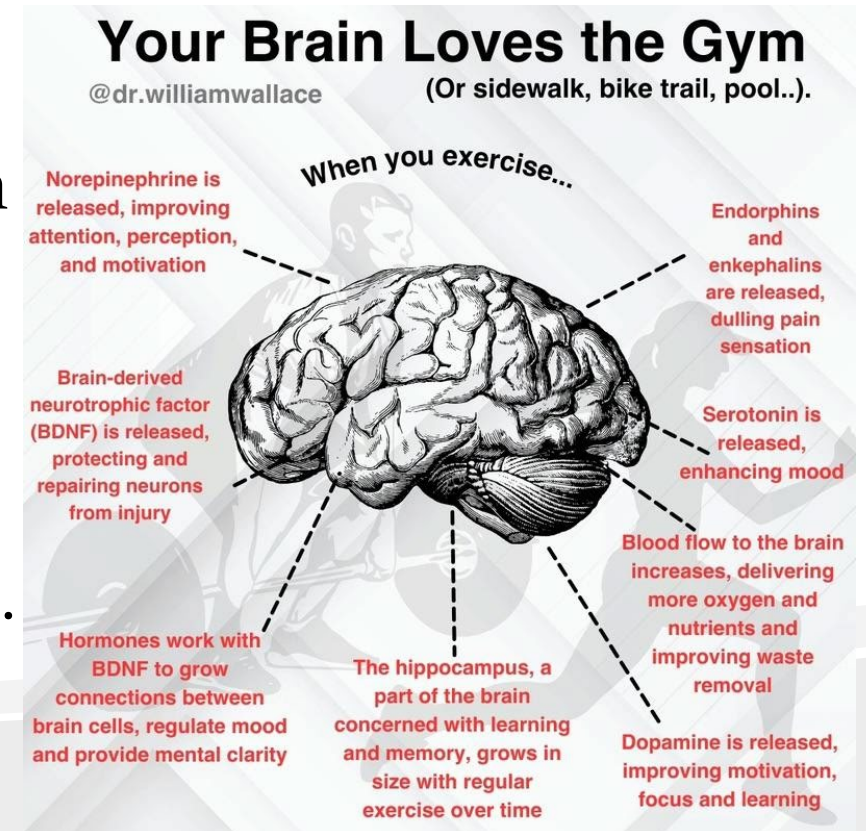
Exercise and Dementia Prevention

- Helps modulate risk factors
- Induces neuroplastic changes in the brain
- More beneficial in preclinical or early stages of dementia (Muller, Taubert, & Muller, 2019)

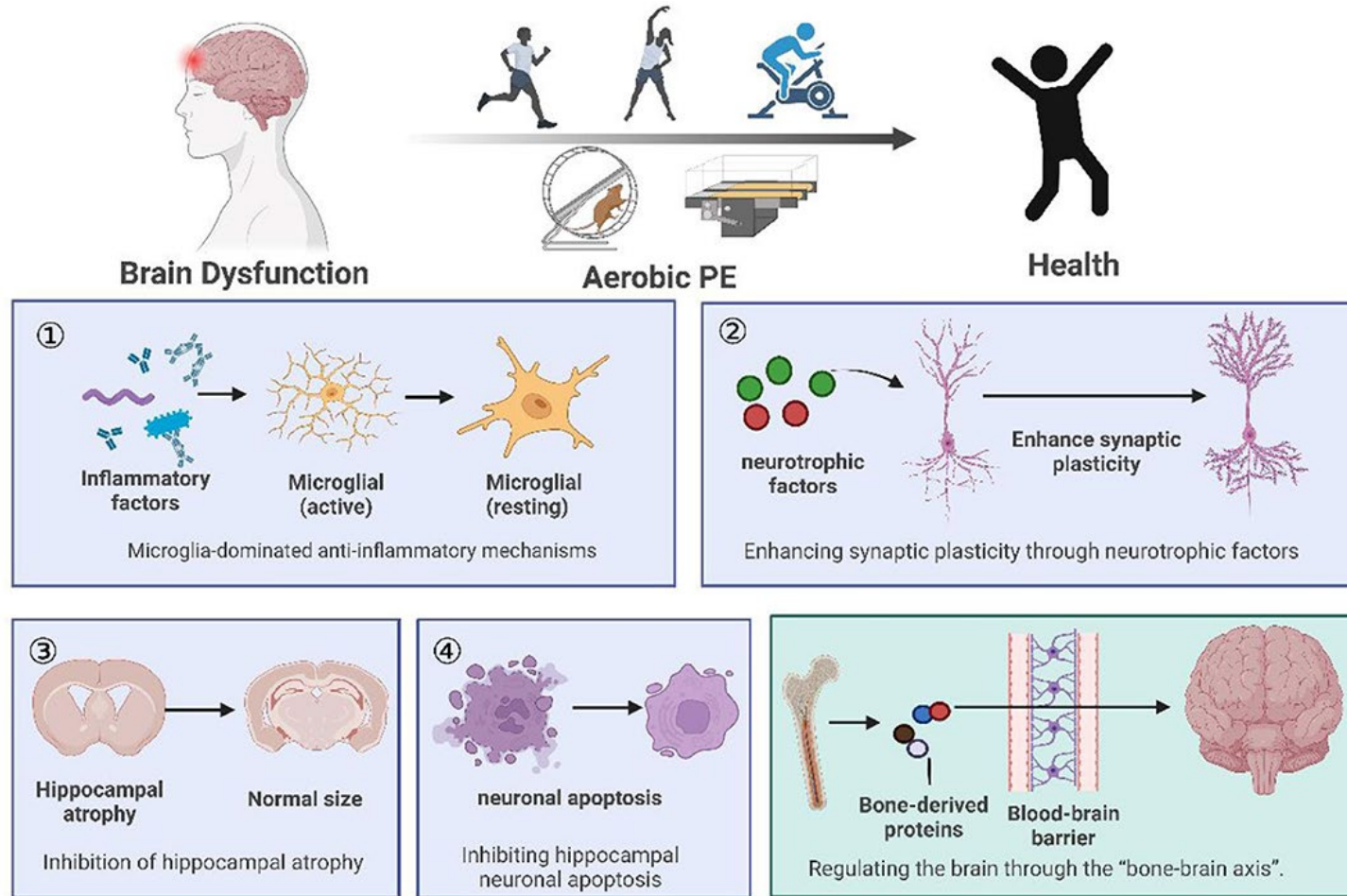
How Exercise Creates Improved Neuroplasticity

- BDNF-brain derived neurotrophic factor (exercise enhances this)
- Increase Blood Flow, O₂
- Enhanced Synaptic Activity in the Brain

Wallace, 2023.



Brain Dysfunction and Benefits of Exercise



Jia et al.,
2022.



Neuroplasticity and Exercising

- <https://www.youtube.com/watch?v=AtK1ksJT7HI>
(Neuroplasticity, 2022)



Brain Derived Neurotrophic Factor

- A protein crucial for neuronal survival and synaptic plasticity.
- Stimulates new neuronal connections and strengthens old ones.
- Implicated in issues with Alzheimer's Disease, ALS, and Parkinson's Disease (Wang et al., 2024)



BDNF and Exercise

- <https://www.youtube.com/watch?v=UN3tXLyaSTA>

(Harvard Medical School Continuing Education, 2022)



The Type of Exercise Matters

- Non-responders vs. responders-Goal of training is 4-5 days per week vs. 1-2 days per week
- High Intensity, Lower Volume Exercise
- Personalized preventative exercise strategies (Muller, Taubert, & Muller, 2019)



Exercise Specifics

- Aerobic Exercise
- Resistance Training
- Mind-Body Exercise (yoga, tai chi)



National Council on Aging Proven Programs

- Fit and Strong- 8 week program that works on flexibility, strength training, and aerobic walking
- Geri-Fit- progressive resistance strength training exercise program designed to increase strength, flexibility, range of motion, mobility, gait, and balance. Exercises are performed seated in chairs (optional standing) in a group setting class. Ongoing classes are held twice-weekly for 45 minutes
- Tai Chi Prime- six-week class series proven to reduce the risk of falling. Classes feature instruction in tai chi and qi gong basics, home practice coaching, home practice, and exercises to embed into activities of daily living
- (National Council on Aging, 2025)



Tai Chi

- <https://www.youtube.com/watch?v=9vljJou-avg>
- (Mayo Clinic, 2018)



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