

# MIND-ful Diet to Boost Brain Power



TASTEFUL TUESDAY

Heather Krick, MS, RDN, CSOWM, LDN, CBC

Cynthia Klobodu, MPH

Dahlia Stott, BS

Adapted from Brandy-Joe Milliron, PhD and Karen Donaghy, MS

# Today's Topics

---

- Importance of Good Nutrition and Nutrition Education
- Cognitive Health
- The MIND Diet
- Strategies for optimizing cognitive health through foods

We have no conflicts of interest to disclose.



# Why is nutrition education important?

---

- Research is evolving
- Requirements change as we develop and age
- Media influence
- The health of the nation is changing



# Cognitive Health

WHAT'S GOOD FOR THE HEART IS ALSO GOOD  
FOR THE BRAIN



**HEART HEALTH**  
*is* **BRAIN HEALTH**

# Modifiable Lifestyle Behaviors

---

- Dietary intake
- Physical activity
- Mental and social activity
- Stress reduction



# Research on Physical Activity

---

- Prevent neurodegeneration
- Reduce stress and anxiety
- Improved verbal memory and learning
- Improve sleep
- Short-term and long-term memory
- Improved attention, processing speed, and decision-making

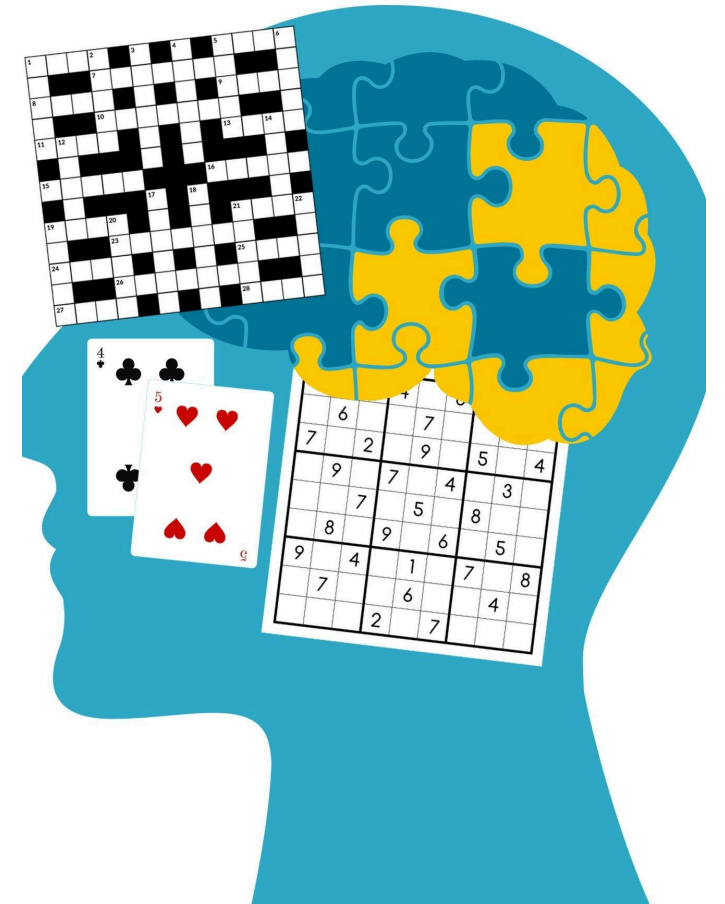


# Research on Mental Stimulation

---

Reduced odds of cognitive decline:

- Listening to the radio
- Reading
- Playing games (crosswords, cards, checkers, chess)
- Social activity and stress reduction practices





# Research on Dietary Habits

---

Heart disease risk factors are similar to risk factors for declining brain function:

- High intake of sodium and processed foods
- High intake of added sugars and simple carbohydrates
- High intake of saturated and *trans* fats
- Limited fruit, vegetable, and whole grain intake
- Limited dairy and unsaturated fat intake





# Research on Dietary Habits (cont.)

---

- Mediterranean diet and DASH diet (to lower blood pressure) are protective of cognitive function
- High intakes of vegetables, specifically green leafy vegetables, is associated with slower cognitive decline
- Berries may be protective of cognitive loss



# What about the MIND diet?

---



# The MIND Diet





# The MIND Diet

---

**Mediterranean-Dash  
Intervention for  
Neurodegenerative  
Delay**



# The MIND Diet (cont.)

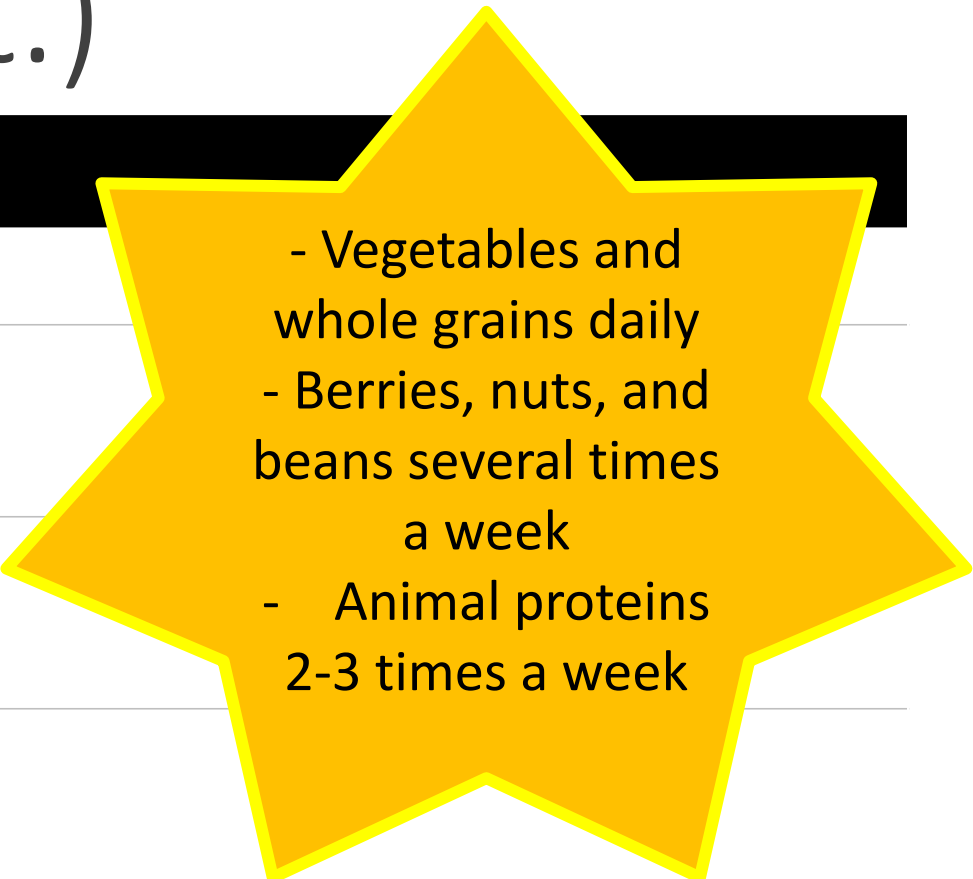
---

- Encourage plant-based foods, whole grains, fish, and poultry
- Limit red meat and saturated fats
- Limit added sugars
- Limit refined grains
- Limit fried foods



# The MIND Diet (cont.)

Food	Frequency
Berries	2 or more servings/week
Vegetables	2 or more servings/day
Whole grains	3 or more servings/day
Nuts	5 or more servings/week
Beans	4 or more servings/week
Seafood	1 or more serving/week
Poultry	2 or more servings/week
Limit	Red meat, saturated fats (butter, margarine), cheese, refined grains, added sugars and fried foods

- 
- Vegetables and whole grains daily
  - Berries, nuts, and beans several times a week
  - Animal proteins 2-3 times a week

# Berries, Berries, Berries

---

- **Blueberries**, blackberries, strawberries, cranberries, raspberries, and red grapes
- Vitamin C, fiber
- Blue/purple color = antioxidants
- Intake associated with improved cognition and reduce cognitive decline



**2 or more servings each week**  
(each serving is ½ cup)



# Green Veggies

---

- Prioritize dark leafy greens
  - Spinach, kale, collard greens, arugula, green and purple lettuces
- Include hearty, cruciferous vegetables each day
  - Broccoli, Brussels sprouts, cauliflower, cabbage (red or green), bok choy, radishes, turnips, watercress



**2 or more servings each day**  
(each serving is 2 cups raw leafy greens or ½-1 cup cooked)

# Crucifers: What the Science Says

- Fiber, calcium, iron, antioxidants, potassium, vitamins C and K
- Specific antioxidants linked to cognitive health
- Contain neuroprotective compounds that preserve cognitive health



# A Rainbow of Colors

- Carrots, peppers, squash, sweet potato, tomatoes
- Fiber, antioxidants, vitamins A, E, and C
- The deeper/brighter the color, the higher the antioxidant content



**Aim to eat something of each color each day**



# What about Roots?

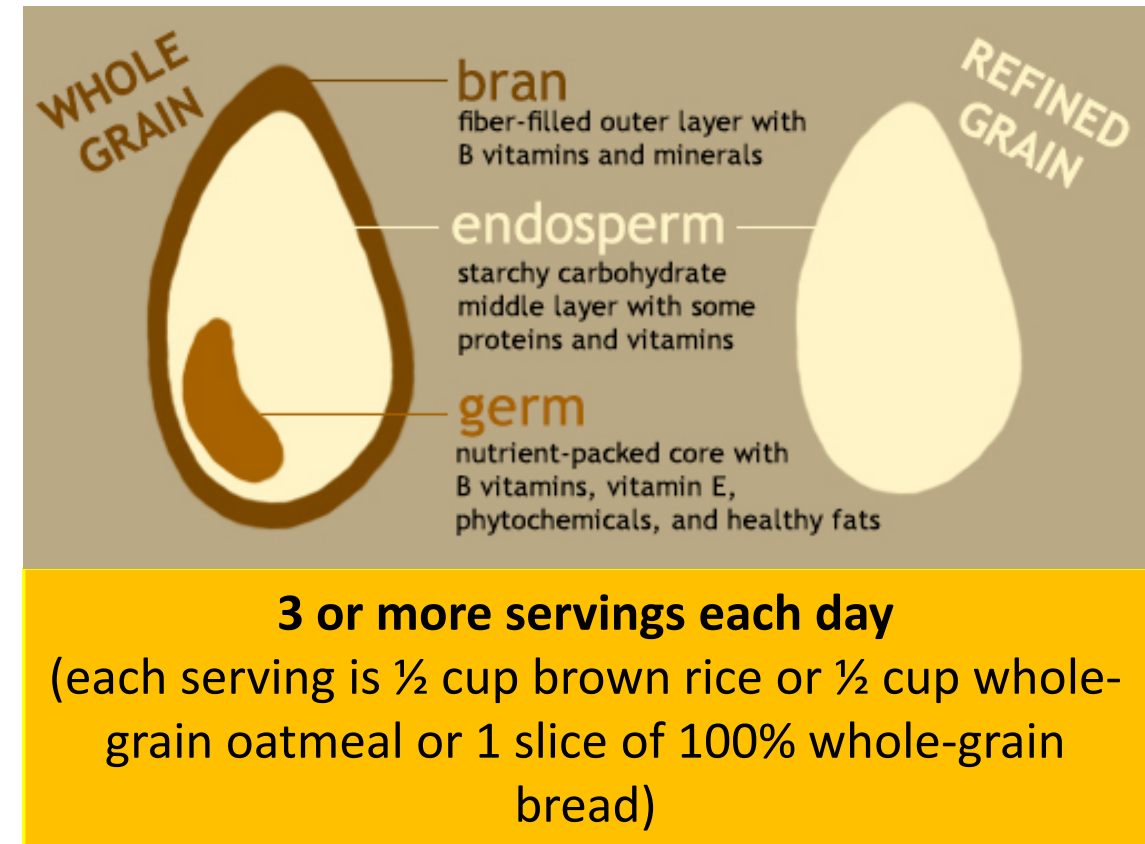
- No need to peel – just a quick scrub!
  - Fiber and antioxidants concentrate near the surface of the skin
- Opt for pre-cut fresh or frozen
- Try adding frozen root vegetables to soups and stews!



**Keep the skin on!**

# Whole Grains for the Win

- Refined grains do not contain the bran and germ – where most of the nutrients are stored
- Opt for at least half of your grains to come from whole-grain sources
- Rich in fiber, protein, and antioxidants
- [wholegrainscouncil.org](http://wholegrainscouncil.org)



# Whole Grains: What the Science Says

---

- Associated with increased thickness in areas of the brain associated with emotion, language, and memory
- Supports cardiovascular function, which supports brain health
- Lower intake – associated with inflammation and cognitive decline in older ages





# Nuts and Seeds

- Excellent for heart and brain health
- Higher **walnut** consumption linked to improved cognitive test scores
- Add great texture to any meal
  - Try adding them to cereal, oatmeal, yogurt, salads, stir-fry
- Buy in bulk, go for unsalted, store in refrigerator to avoid spoilage



**5 or more servings each week**  
(each serving is 1 ounce: 24 almonds; 18 cashews; 12 hazelnuts; 15 pecans; 14 walnut halves)



# Beans, Peas, and Legumes

---

- Cannellini, navy, great northern, garbanzo, pinto, black, kidney, heirloom varieties
- Excellent source of fiber, protein, antioxidants, and B-vitamins
- Diets high in plant-based associated with improved brain health
- Try adding to soup or making your own hummus



**4 or more servings each week**  
(each serving is  $\frac{1}{2}$  cooked  
beans or legumes)

# Fish and Poultry

- Fatty fish contains omega-3 fatty acids, which are neuroprotective
  - Salmon, mackerel, herring, sardines
- Prioritize food sources of omega-3s
  - Lab-grown omega-3s are available as supplements



**1 or more servings fish each week**  
**2 servings poultry each week**  
(each serving is 3 ounces)



# MIND-ful Recipes



# MIND-fully delicious: Pumpkin Spice Oatmeal

---

## INGREDIENTS

Whole-grain oats (2 cups)  
Water (4 cups)  
Raisins (1/3 cup)  
Dried cranberries (1/4 cup)  
Canned pumpkin (1 cup)  
Pumpkin pie spice (2 tsp.)  
Maple syrup or agave nectar (2 tbsp.)  
Vanilla extract (1/2 tsp.)

## INSTRUCTIONS

Combine all ingredients in a saucepan.  
Cook over medium heat until liquid is mostly absorbed, stirring occasionally.





# MIND-fully delicious: Super Simple Salmon

---

## INGREDIENTS

Salmon, fresh or frozen (6 ounces)

Garlic powder (1 tbsp.)

Dried basil (1 tbsp.)

Salt (1/2 tsp.)

Olive oil (1-2 tbsp.)

Lemon wedges (2-4)

## INSTRUCTIONS

Fully thaw salmon fillets if frozen.

Mix together garlic powder, basil, and salt in a small bowl. Rub equal amounts on the salmon fillets.

Add olive oil to a skillet over medium heat. Cook the salmon until browned and flaky – about 5 minutes per side.

Serve each fillet with a lemon wedge.



# MIND-fully delicious: Easy Chickpea Salad Sandwich

---

## INGREDIENTS

15-ounce can chickpeas  
(or 1.5 cups cooked chickpeas)  
Celery stalk (1-2)  
Onion powder (1 tsp.)  
Mayonnaise (1-2 tbsp.)  
Lemon juice (1 tbsp.)  
Salt and pepper (as desired)  
100% whole-wheat bread (2-4  
slices)  
Dark, leafy greens (1 cup)

## INSTRUCTIONS

Thinly slice the celery.  
Drain and rinse the chickpeas. Smash the chickpeas in a medium bowl with a fork.  
Combine the chickpeas, celery, onion powder, mayonnaise, lemon juice, salt, and pepper.  
Spoon the chickpea salad on bread and add a mound of lettuce. Layer as desired.



# MIND-fully delicious: Maple-Walnut Sweet Potatoes and Carrots

---

## INGREDIENTS

Sweet potatoes (4 medium)  
Baby carrots (1/2 bag)  
Chopped walnuts (1 cup)  
Brown sugar (1/2 cup packed)  
Dried cranberries (1/2 cup)  
Maple syrup (1/2 cup)  
Apple cider (1/4 cup)  
Salt (1/4 tsp.)

## INSTRUCTIONS

Preheat oven to 425 F.  
Clean and cut sweet potatoes (keep the skin!) and carrots to small, bite-sized pieces. Mix with the brown sugar, cranberries, maple syrup, apple cider, salt, and half the walnuts.  
Cook in oven-safe dish for 30-40 minutes, stirring every 15 minutes.  
Sprinkle with remaining walnuts.





# MIND-fully delicious: Super-Berry Smoothie

---

## INGREDIENTS

Spinach leaves (1 cup)  
Kale leaves (1/2 cup)  
Blueberries (1/2 cup)  
Raspberries (1/2 cup)  
Banana (1 medium)  
Nonfat, plain Greek yogurt  
(1/2 cup)  
Whole-grain oats (2 tbsp.)  
Ice (1 cup)

## INSTRUCTIONS

Combine all ingredients in a blender until smooth.  
If it is too thick to drink, try adding ¼-1/2 cup of a milk of your choice.  
Serve immediately.



# MIND-fully delicious: Super Easy Trail Mix

---

## INGREDIENTS

Roasted almonds (1 cup)  
Roasted peanuts (1 cup)  
Roasted walnuts (1 cup)  
Shelled pistachios (1 cup)  
Dark chocolate chips (3/4 cup)  
Dried cranberries (3/4 cup)

## INSTRUCTIONS

Mix all ingredients in a bowl or bag and enjoy!



# MIND-fully delicious: Eating Outside the Dorm Room

---

## **Chipotle**

- Burrito Bowl
- Brown rice
- Black beans
- Grilled chicken
- Roasted  
veggies
- Lettuce

## **Wawa**

- Roasted chicken  
hoagie with whole-  
wheat classic roll  
and roasted veggies
- Roasted veggie  
hoagie on a whole-  
wheat roll
- Quinoa bowl

## **Landmark**

- Asian Salmon  
Sandwich
- Brussels  
sprouts

## **Blaze Pizza**

- Green stripe pizza
- Veg out pizza
- Vegetarian pizza
- Vegan pizza
- Pack on all the  
veggies!
- Try on their  
cauliflower crust!

# Recap

## Optimize your Intake of Brain-Healthy Foods

---

1

When it comes to fruit, prioritize **berries** and enjoy at least two servings each week

2

Consider a plant-based approach to your plate, and prioritize green leafy vegetables, whole grains, nuts and beans

3

Consume your nutrients through food instead of supplements; we don't see the same health benefits from supplements

# Thank you!

---





# References

- Ahlskog JE, Geda YE, Graff-Radford NR, et al. Physical exercise as a preventive or disease-modifying treatment of dementia and brain aging. *Mayo Clin Proc.* 2011;86(9): 876-884.
- Amieva H, Stoykova R, Matharan F, et al. What aspects of social network are protective for dementia? Not the quantity but the quality of social interactions is protective up to 15 years later. *Psychosom Med.* 2010;72(9):905-911.
- Cotman CW, Berchtold NC, Christie LA. Exercise builds brain health: key roles of growth factor cascades and inflammation. *Trends Neurosci.* 2007;30(9):464-472.
- Epel E, Daubenmier J, Moskowitz JT, et al. Can meditation slow rate of cellular aging? Cognitive stress, mindfulness, and telomeres. *Ann N Y Acad Sci.* 2009;1172:34-53.
- Khoo HE, Azlan A, Tang ST, Lim SM. Anthocyanidins and anthocyanins: colored pigments as food, pharmaceutical ingredients, and the potential health benefits. *Food Nutr Res.* 2017;61(1):1361779. Published 2017 Aug 13. doi:10.1080/16546628.2017.1361779
- Krikorian R, Shidler MD, Nash TA, et al. Blueberry supplementation improves memory in older adults. *J Agric Food Chem.* 2010;58(7):3996-4000. doi:10.1021/jf9029332
- Kuiper JS, Oude Voshaar RC, Zuidema SU, et al. The relationship between social functioning and subjective memory complaints in older persons: a population-based longitudinal cohort study. *Int J Geriatr Psychiatry.* 2017;32(10):1059-1071.
- Livingston G, Sommerlad A, Orgeta V, et al. Dementia prevention, intervention, and care. *Lancet.* 2017;390(10113): 2673-2734.
- Luchsinger JA, Tang MX, Shea S, et al. Caloric intake and the risk of Alzheimer disease. *Arch Neurol.* 2002;59(8): 1258-1263.
- Malinowski P, Moore AW, Mead Br, et al. Mindful aging: the effects of regular brief mindfulness practice on electrophysiological markers of cognitive and affective processing in older adults. *Mindfulness (N Y).* 2017;8(1):78-94.
- Marshall S, Petocz P, Duve E, et al. The effect of replacing refined grains with whole grains on cardiovascular risk factors: A systematic review and meta-analysis of randomized clinical trials with GRADE clinical recommendation. *Acad Nutr Diet.* 2020, article in press.
- Morris MC, Tangney CC, Wang Y, et al. MIND Diet slows cognitive decline with aging. *Alzheimer's and Dementia.* 2015;11(9):1015-1022.
- Rabassa M, Zamora-Ros, Palau-Rodriguez et al. Habitual nut exposure, assessed by dietary and multiple urinary metabolomic markers, and cognitive decline in older adults: The InCHIANTI Study. *Molecular Nutrition & Food Research.* 2019;64:1900532.
- Smith PJ et al. Aerobic exercise and neurocognitive performance: a meta-analytic review of randomized controlled trials. *Psychosom Med.* 2010;72(3):239-252.
- Tarozzi A, Angeloni C, Malaguti M, Morroni F, Hrelia S, Hrelia P. Sulforaphane as a potential protective phytochemical against neurodegenerative diseases. *Oxid Med Cell Longev.* 2013;2013:415078. doi:10.1155/2013/415078
- van de Rest O, Berendsen AM, Haveman-Nies A, et al. Dietary patterns, cognitive decline, and dementia: a systematic review. *Adv Nutr.* 2015;6(2):154-168.