

**test, test , Test, Test**

**DOB/AGE:** 03/16/48 70 yrs

**Gender:** Male

**CareOne ID:** 507419

**Ordering Physician:** Schechter Ginger MD

**Accession:** 10280638

**Collected:** 05/14/2018

**Released:** 05/22/2018



The RE:mind Protocol is a multifactorial report of key biomarkers that have been associated with cognitive health, dementia and Alzheimer's disease. The RE:mind Protocol identifies modifiable risk factors, that if addressed, may benefit overall cognitive health, with a focus on dementia-related decline. The cited biomarkers are not all-encompassing and reflexive testing may offer additional treatment modalities. The RE:mind Protocol includes recommendations for therapeutic interventions intended to promote cognitive health.

**Ethnicity:** White

**Education:** Master's degree

**Occupation:** Retired Engineer

**The patient is currently receiving care from the following practitioners**

Primary Care Physician, Dentist

**Other care providers:** Cardiologist

**The patient reports the following, which may increase the risk of cognitive decline**

**Past medical history:** Heart disease/heart attack, High blood pressure, High cholesterol or high triglycerides, Dementia/memory loss, Sleep apnea/other sleep disorder, Hypothyroidism

**Family history:** Diabetes, Heart disease/Heart attack, Dementia/Memory problems

**Alcohol Use:** Current

**Tobacco Use:** Past

**The patient reports the following, which may indicate changes in cognition**

**Cognitive changes:** Getting lost in familiar places, Repetitive questioning, Misplacing keys or glasses or other everyday items, Decline in planning and organization

**Other changes:** Difficulty with names

**Patient reports feeling:** Lack of energy

**The patient reports the following, which may indicate altered gastrointestinal function**

Gas/bloating after meals, Gastric reflux/heartburn

**The patient reports the following dietary patterns**

**Special diet:** No particular diet pattern

**Patient reports eating 50-75% of meals outside of home**

**Beverages consumed on a typical day:** Water, Juice

**Coffee drinks per day:** 2 - 3

**Alcohol drinks per day:** 2-3

**The patient reports the following allergies**

**Medication allergies:** None

**Environmental allergies:** None

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**Accession: 10280638****MEDICATIONS AND SUPPLEMENTS:****ANTHROPOMETRIC DATA:**

	Current Result	Units	RE:mind Target	Reference Range	Prior Result
Height	5'8"	ft'inches"	n/a	n/a	-
Weight	140	lbs	n/a	n/a	-
Body Mass Index (BMI)	21.3	kg/m <sup>2</sup>	23.0-28.0 [1]	18.5 - 24.9	-
Systolic BP	130	mmHg	140-180 [2,3]	140	-
Diastolic BP	85	mmHg	70-90 [2,3]	89	-

**COGNITIVE ASSESSMENT RESULTS:**

	Current Result	Prior Result	Interpretation
MoCA	25	-	0(minimum) to 30(optimal), > 26 considered normal [4]

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**Accession: 10280638****GENETIC RESULTS:****MTHFR Gene Testing by PCR** [Performed by Northwest Pathology, Bellingham, WA - CLIA# 50D1017935, Accession:10280638]

Gene Test	SNP Ref ID	Result	Interpretation
MTHFR-677	rs1801133	C/T	Heterozygous for C677T polymorphism
MTHFR-1298	rs1801131	A/C	Heterozygous for A1298C polymorphism

**Predicted MTHFR Enzyme Activity (%): 48**

The *MTHFR* (Methylenetetrahydrofolate Reductase) gene produces an enzyme that processes folate and regulates homocysteine levels in the body. High homocysteine levels are an independent risk factor for cardiovascular disease and dementia, including Alzheimer's disease. Polymorphisms in two genes associated with *MTHFR* (677 and 1298) cause reduced function and activity of the *MTHFR* enzyme, often resulting in increased homocysteine levels. Refer to the supplement recommendations for information on appropriate supplementation to optimize homocysteine levels. [6,7]

**APOE Genotyping by PCR** [Performed by Northwest Pathology, Bellingham, WA - CLIA# 50D1017935, Accession:10280638]

SNPrs429358	C/T
SNPrs7412	C/C

**APOE Genotype: e3/e4**

The *APOE* (Apolipoprotein E) gene, a protein involved in lipid transport, has been associated with risk for Alzheimer's disease. Compared to the most common genotype (*APOE*3/3), presence of one *e4* allele increases Alzheimer's disease risk 3- 4-fold and the presence of two *e4* alleles increases risk 12-fold or more. In contrast, having one or more *APOE*2 alleles is associated with reduced risk of Alzheimer's disease. It is important to note that although *APOE* is a powerful genetic risk factor for Alzheimer's disease, there are many factors that can modify this risk, including those discussed in the *RE:mind* protocol. *APOE* genotype affects specific dietary and lifestyle recommendations, please refer to the recommendation section for individualized interventions. {8,9}

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**Accession: 10280638****LABORATORY RESULTS:**

L = Below Reference Range | H = Above Reference Range | HH = Critical Reference Range | RE-L = Below RE: Mind Target | RE-H = Above RE: Mind Target

	Current	Flags	Prior Result	RE: mind Target	Reference Range	Units
White Blood Cells	4.0		-	n/a	3.8 - 10.8	thousand/uL
Red Blood Cells	5.0		-	n/a	4.2 - 5.8	million/uL
Hemoglobin	13.0	L	-	n/a	13.2 - 17.1	g/dL
Hematocrit	40.0		-	n/a	38.5 - 50.0	%
Mean Corpuscular Volume	90.0		-	n/a	80.0 - 100.0	fL
Mean Corpuscular Hemoglobin	30.0		-	n/a	27.0 - 33.0	pg
Platelet Count	200		-	n/a	140 - 400	thousand/uL
Fasting Glucose, Serum	98	RE-H	-	70-89 [10]	65 - 99	mg/dL
Hemoglobin A1c	5.8	H, RE-H	-	<5.2 [11]	5.7	%
Fasting Insulin	8.0	RE-H	-	<4.0 [12]	2.0 - 19.6	uIU/mL
HOMA-Insulin Resistance Score	1.9	RE-H	-	<1.0 [10]	n/a	n/a
Homocysteine, serum	12.0	H, RE-H	-	<10.0 [13,14]	11.4	umol/L
Vitamin B12, serum	490	RE-L	-	500-1,100 [22]	200 - 1,100	pg/mL
Folate, serum	10.0		-	>7.5 [23]	5.4	ng/mL
C-reactive Protein, high sensitivity	2.3	H, RE-H	-	<1.0 [15,16]	1.0	mg/L
Creatinine, Fasting	1.00		-	n/a	0.70 - 1.18	mg/dL
Glomerular Filtration Rate, estimated	65		-	n/a	60	mL/min/1.73m2
Calcium, serum	9.0		-	n/a	8.6 - 10.3	mg/dL
Potassium	5.0		-	n/a	3.5 - 5.3	mmol/L
Magnesium, RBC	4.5		-	n/a	4.0-6.4 [17]	mg/dL
Copper, serum	135	RE-H	-	70-110 [18]	70 - 175	ug/dL
Zinc, serum	65	RE-L	-	80-130 [19]	60 - 130	ug/dL
Copper:Zinc ratio	2.1	RE-H	-	<1.5 [20]	n/a	n/a
Selenium, serum	100		-	>100 [21]	63 - 160	ug/L
Vitamin D, serum	25.0	L, RE-L	-	40.0-60.0 [24,25]	30.0 - 100.0	ng/mL
Vitamin E, serum	18.0		-	15.0-25.0 [26]	5.7 - 19.9	mg/L
Total Cholesterol	190		-	<220 [27]	200	mg/dL
HDL Cholesterol	70		-	>60 [28]	40	mg/dL
LDL Cholesterol	110	H	-	n/a	100	mg/dL
Triglycerides	80		-	n/a	150	mg/dL
Total Cholesterol:HDL Ratio	2.7		-	<3.5 [29]	5.0	n/a
TG:HDL	1.1		-	<2.0 [30]	n/a	n/a
Thyroid Stimulating Hormone	3.0	RE-H	-	0.4-2.4 [31]	0.4 - 4.5	mIU/L
Free T3	2.0	L	-	n/a	2.3 - 4.2	pg/mL
Free T4	1.0		-	n/a	0.8 - 1.8	ng/dL
Cortisol, AM	19.0	RE-H	-	10.0-15.0 [33]	4.0 - 22.0	ug/dl

RE: mind Target ranges have been defined by AFFIRMATIVhealth based on interpretation of published data regarding optimal values for cognitive function. The appropriateness of these targets must be determined by the treating health care provider and must be considered within the context of the patient's overall medical status and history prior to initiating therapeutic interventions. Reference Ranges are defined by the laboratory testing facility. If no RE: mind Target range has been identified, the Reference Range is the basis for recommendations and interventions.

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**RE:mind Target range references:**

- [1] Emmerzaal TL, Kiliaan AJ, Gustafson DR, et al. 2003-2013: A decade of body mass index, Alzheimer's disease, and dementia. *J Alzheimers Dis.* 2015;43:739-755.
- [2] Kennelly SP, Lawlor BA, Kenny RA. Blood pressure and dementia – a comprehensive review. *Ther Adv Neurol Disord.* 2009;2(4):241-260.
- [3] Morris, MC, Scherr PA, Hebert LE, et al. Association of incident Alzheimer disease and blood pressure measured from 13 years before to 2 years after diagnosis in a large community study. *Arch Neurol.* 2001;58:1640–1646.
- [4] Montreal Cognitive Assessment (MoCA) Administration and Scoring Instructions. [www.mocatest.org](http://www.mocatest.org). Accessed 7/17/17.
- [5] SAGE: A Test to Detect Signs of Alzheimers and Dementia. <https://wexnermedical.osu.edu/brain-spin-neuro/memory-disorders/sage>. Accessed 9/11/17.
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- [7] Refsum H et al. The Hordaland Homocysteine Study: A community-based study of homocysteine, its determinants and associations with disease. *J Nutr.* 2006;136:1731S-1740S.
- [8] Hallman DM, Boerwinkle E, Saha N, et al. The apolipoprotein E polymorphism: a comparison of allele frequencies and effects in nine populations. *Am J Hum Genet.* 1991;49(2):338-349.
- [9] Liu CC, Kanekigo T, Xu, et al. Apolipoprotein E and Alzheimer disease: risk, mechanisms, and therapy. *Nat Rev Neurol.* 2013;9(20):106-118.
- [10] Crane PK, Walker R, Hubbard RA, et al. Glucose levels and risk of dementia. *N Engl J Med.* 2013;369(6):540-548.
- [11] Enziger C, Fazekas F, Matthews PM, et al. Risk factors for progression of brain atrophy in aging: Six-year follow-up of normal subjects. *Neurology.* 2005;64:1704-1711.
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- [13] Stanger O, Hermann W, Pietrzik K, et al. DACH-LIGA homocysteine (german, austrian and swiss homocysteine society): consensus paper on the rational clinical use of homocysteine, folic acid and B-vitamins in cardiovascular and thrombotic diseases: guidelines and recommendations. *Clin Chem Lab Med.* 2004 Jan;42(1):113-6.
- [14] Faux NG, Ellisa KA, Porter L, et al. Homocysteine, vitamin B12, and folic acid levels in Alzheimers disease, mild cognitive impairment, and healthy elderly: Baseline characteristics in subjects of the Australian imaging biomarker lifestyle study. *Journal of Alzheimers Disease.* 2011;27:909-922.
- [15] Pearson TA, Mensah GA, Alexander RW, et al. Markers of inflammation and cardiovascular disease application to clinical and public health practice a statement for healthcare professionals from the Centers for Disease control and Prevention and the American Heart Association. *Circulation.* 2003;107(3):499-511
- [16] OBryant SE, Waring SC, Hobson V. et al. Decreased C-reactive protein levels in Alzheimer disease. *J Geriatr Psychiatry Neurol.* 2010. March;23(1):49-53.
- [17] Barbagallo M, Belvedere M, Di Bella G, et al. Altered ionized magnesium levels in mild-to-moderate Alzheimers disease. *Magnesium Research.* 2011;24(3):S115-121.
- [18] Squitti R, Simonelli I, Ventriglia M, et al. Meta-analysis of serum non-ceruloplasmin copper in Alzheimer's disease. *J Alz Dis.* 2014;38:809-822.
- [19] Ventriglia M, Brewer GJ, Simonelli I, et al. Zinc in Alzheimer's disease: A meta-analysis of serum, plasma, and cerebrospinal fluid studies. *J Alz Dis.* 2015;46:75-87.
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- [21] Akbaraly NT, Hininger-Favier I, Carriere I, et al. Plasma selenium over time and cognitive decline in the elderly. *Epidemiology.* 2007;18:52-58.
- [22] Kobe T, Witte AV, Schnelle A, et al. Vitamin B-12 concentration, memory performance, and hippocampal structure in patients with mild cognitive impairment. *A J Clin Nutr.* 2016;103:1045-1054.
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- [28] Crichton GE, Elias MF, Davey A, et al. Higher HDL cholesterol is associated with better cognitive function: the Main-Syracuse Study. *J of International Neuropsychological Society.* 2014;20:961-970.
- [29] Millan J, Pinto X, Munoz A, et al. Lipoprotein ratios: Physiological significance and clinical usefulness in cardiovascular prevention. *Vascular Health and Risk Management.* 2009;5:757-765.
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- [31] Zaldy S. Tan, MD, MPH; Alexa Beiser, PhD; Ramachandran S. Vasan, MD; et al Thyroid Function and the Risk of Alzheimer's Disease: The Framingham Study. *Arch Intern Med.* 2008;168(14):1514-1520.
- [32] Barron AM, Pike, CJ, Sex hormones, again and Alzheimer's disease. *Front Biosci (Elite Ed).* 2012;4:976-997.
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All Laboratory test results provided by Quest Diagnostics order number:

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## Physician Recommendations

### Lifestyle

- After the age of 65, a low BMI may increase the risk of dementia and Alzheimer's disease and a BMI >25 may be protective. Encourage the patient to gain weight and avoid weight loss by consuming more frequent meals and snacks and increasing the intake of healthy fats and proteins with each meal. In late life, weight stability is essential as weight loss after diagnosis of mild Mild Cognitive Impairment (MCI) or Alzheimer's Disease may lead to faster disease progression. Thus, dietary and lifestyle changes should be aimed at improving modifiable risk factors instead of creating a calorie deficit.

[1]

- Research suggests that above 65 years of age a systolic blood pressure 140-180mmHg is associated with the lowest risk of dementia and Alzheimer's disease. New research suggests that for patients 70-79 years of age being treated for hypertension, a systolic BP <120mmHg may preserve cognitive function, especially in African Americans. Additionally, blood pressure variability is associated with dementia and Alzheimer's disease and fluctuations of more than 5-10mmHg should be avoided.

[2,3]

- The patient reports difficulty falling and staying asleep. Encourage the patient to develop a consistent bedtime routine that limits stimulants such as electronic devices, pets in bed, alcohol and caffeine late in the day. A cool, quiet room as well as regular exercise can aid in falling asleep. Explore any medications or supplements that may be disrupting sleep. If needed, use 0.5-2.0mg prolonged release melatonin 1-2 hours before bed.

[4,5]

- The patient reports feeling frequently tired during the day. If this continues despite 8 hours of consecutive sleep each night consider evaluating for obstructive sleep apnea or thyroid or other hormone imbalances.

[6]

- Encourage the patient to explore stress reduction techniques such as meditation, massage, deep breathing, guided imagery, social engagement, or speaking with a mental health professional. Reduction of stress is an important modifiable risk factor to improving cognition.

[7]

### Exercise

- The patient reports no regular physical activity. Regular exercise reduces the risk of cardiovascular disease, Type 2 Diabetes, high cholesterol and improves sleep quality - all of which support improved cognitive health.

[8]

- The patient reports cardiovascular exercise less than 60 minutes per week. The RE:mind program encourages aerobic exercise for a minimum of 150 minutes (2.5 hours) per week, spread throughout the week. Additional benefits have been associated with 300 weekly minutes (5 hours) of aerobic activity.

[8,9]

- The patient reports no current stretching or yoga practice. The RE:mind program encourages participating in stretching, yoga, and other balance activities at least 3 times per week.

[10]

**test, test , Test, Test**

DOB/AGE: 03/16/48 70 yrs

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**Accession: 10280638**

- The patient reports no current strength training. The RE:mind protocol recommends muscle strengthening activities that work all major muscle groups 2 or more days a week.  
[11]
- The patient reports health problems limit their mobility. Work with the patient to find medically appropriate activities to increase movement and consider a referral to a physical therapist.

**Diet**

- The patient reports no particular dietary pattern. The recommended RE:mind diet encourages daily intake of at least 2.5 cups non-starchy vegetables, 1-2 servings low glycemic fresh fruit, healthy fats (nuts, seeds, avocado, olive oil, fatty fish), and a variety of protein sources (beans, fish, poultry). Intake of grains is limited to 1/2-1 cup servings of minimally processed options in an effort to improve blood glucose regulation and insulin sensitivity.  
[12,13,14]
- Encourage the patient to incorporate at 12-16 hour nightly fast.  
Rationale: Intermittent fasting positively affects various metabolic parameters and may also benefit neurologic health in part due to the production of ketone bodies, which occurs 12-16 hours into a fast. [15,16]
- Encourage the patient to consume probiotic and prebiotic rich foods daily to support microbiome health, which is associated with neurologic health.  
[17,18]  
**Note:** There is inadequate research to recommend specific probiotic supplement strains or doses at this time.
- The patient reports consuming juice and soda, which are not recommended as they raise blood sugar levels. Water and unsweetened tea are the preferred beverages to meet fluid intake requirements which is ~3L per day for men.  
[19]
- The patient reports a bowel movement frequency of every other day. Encourage increased fiber intake from nuts, seeds, beans, vegetables, and gluten-free whole grains. Consume water or unsweetened tea throughout the day to meet fluid needs.  
[20]
- To promote improved bowel movement consistency, recommend increased fiber intake from nuts, seeds, beans, vegetables, and gluten-free whole grains. Water or unsweetened teas should be consumed throughout the day to meet fluid needs.  
[20]
- The patient reports daily coffee consumption. While there is emerging evidence for the health benefits of coffee, the research related to cognition and Alzheimer's disease remains inconclusive. Encourage the patient to limit caffeine consumption to before noon so that it doesn't disrupt sleep.  
[21]

**Supplements**

- **"Homocysteine Support" Formula**

Dosage: Containing 800mcg methylfolate, 500-1000mcg Vitamin B12, 10-25mg Vitamin B6, 1g trimethylglycine (TMG)/betaine

Rationale: Homocysteine above RE:mind Target [22,23]

**test, test , Test, Test**

DOB/AGE: 03/16/48 70 yrs

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**Accession: 10280638**

- **Zinc**

Dosage: 40-50mg Zinc Picolinate or Zinc Gluconate daily x 3 months

Rationale: Zinc levels below RE:mind Target and copper levels above RE:mind Target [24]

**Note:** Take zinc supplements separate from any calcium or iron supplements. Retest copper and zinc levels in 3 months to determine if continued supplementation is indicated.

- **Omega-3**

Dosage: 1000-1500mg DHA with 500-1000mg EPA BID

Rationale: High levels of inflammation, as indicated by elevated hs-CRP. [25]

**Note:** Contraindicated with blood thinning medications.

- **Curcumin**

Dosage: 80-100mg active curcumin supplement TID

Rationale: High levels of inflammation, as indicated by elevated hs-CRP. [26,27]

**Note:** The best absorbed forms of curcumin are those in liposomal form with added piperine (ex: Longvida, Meriva, Theracurmin).

- **Aswagandha**

Dosage: 300mg BID

Rationale: Elevated Cortisol-am levels [28]

**Note:** Evaluate sleep quality, consider testing for OSA, and discuss stress management techniques with patient.

- **Vitamin D3**

Dosage: 3000IU daily

Rationale: Vitamin D levels below RE:mind Target [29]

**Note:** Retest 25(OH)D in 3-6 months to monitor supplement dose appropriateness.

- **Ginger**

Dosage: 1-2 tsp dried ginger or 2-4 Tbsp fresh ginger daily

Rationale: Elevated hs-CRP, indicating inflammation. [30]

**Note:** If supplements are preferred, 1000mg ginger capsule BID is recommended.

### RE:mind Consultation Notes:

*The information contained in this report is confidential and is meant for the patient and treating physician. All recommendations are made based on the available patient information and are intended as a guideline and not to act as medical advice. All recommendations must be approved by the treating physician.*

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## Patient Recommendations

### Lifestyle

- After the age of 65, a low BMI may increase the risk of dementia and Alzheimer's disease and a BMI >25 may be protective. Avoid losing any additional weight by consuming more frequent meals and snacks and increasing intake of healthy fats and proteins with each meal. Weight stability and/or weight gain is encouraged as it is associated with improved cognition. Thus, dietary and lifestyle changes should be focused on improving the risk factors related to cognitive health instead causing weight loss.

[1]

- To improve ability to fall asleep, develop a consistent bedtime routine that limits stimulants such as electronic devices, pets in bed, and alcohol and caffeine late in the day. A cool, quiet room as well as regular exercise can aid in falling asleep. Explore any medications or supplements that may be disrupting sleep. If needed, use 0.5-2.0mg prolonged release melatonin 1-2 hours before bed.

[4,5]

### Exercise

- Regular physical activity reduces the risk of cardiovascular disease, Type 2 Diabetes, high cholesterol and improves sleep quality - all of which support improved cognitive health. Work with your physician to find medically appropriate activities to increase daily movement.

[8]

- As you reported health problems limiting your mobility, work with your physician to find medically appropriate activities to increase daily movement.

- Increase your cardiovascular exercise time and/or frequency as you are able. The RE:mind program encourages aerobic exercise for a minimum of 150 minutes (2.5 hours) per week, spread throughout the week. Additional benefits have been associated with 300 weekly minutes (5 hours) of aerobic activity.

[8,9]

- As you are able, incorporate strength training exercises (such as light weights, resistance bands, or Pilates). The RE:mind protocol recommends muscle strengthening activities that work all major muscle groups 2 or more days a week.

[11]

- Try to incorporate stretching, yoga, or other balance activities at least 3 times per week.

[10]

### Diet

- The recommended RE:mind diet encourages daily intake of at least 2.5 cups non-starchy vegetables, 1-2 servings low glycemic fresh fruit, healthy fats (nuts, seeds, avocado, olive oil, fatty fish), and a variety of protein sources (beans, fish, poultry). Intake of grains is limited to 1/2-1 cup servings of minimally processed options in an effort to improve blood glucose regulation and insulin sensitivity.

[12,13,14]

**test, test , Test, Test**

DOB/AGE: 03/16/48 70 yrs

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**Accession: 10280638**

- Fast for a minimum of 12 hours each night with a goal of 16 hours of fasting (ie eating is limited to an 8 hour window during the day). Try to consume larger meals earlier in the day and lighter meals in the afternoon and evening.

Rationale: Intermittent fasting positively affects various metabolic parameters and may also benefit neurologic health in part due to the production of ketone bodies, which occurs 12-16 hours into a fast. Additionally, avoiding caloric intake for at least 2-3 hours prior to bed is encouraged to optimize digestion and prevent sleep disruptions. [15,16]

- Incorporate probiotic foods (live-culture yogurt, kefir, sauerkraut, kimchi, kombucha, miso, tempeh, or other fermented vegetables) and prebiotic foods (garlic, onion, leek, asparagus, soy beans, dandelion greens) daily to promote microbiome health, which is associated with cognitive health.

[17,18]

**Note:** There is inadequate research to recommend specific probiotic supplement strains or doses at this time.

- Consumption of juice and soda is not recommended as they raise blood sugar levels. Water and unsweetened tea are the preferred beverages to meet fluid intake requirements which is about 3 liters (100 ounces or 12.5 cups ) per day for men.

[19]

- To promote improved bowel movement regularity and consistency, increase fiber intake from nuts, seeds, beans, vegetables, and gluten-free whole grains. Consume water or unsweetened tea to meet fluid needs. If you continue to have infrequent bowel movements, speak with your physician about additional options.

[20]

- While there is emerging evidence for the health benefits of coffee, the research related to cognition and Alzheimer's disease remains inconclusive. Limit caffeine consumption to 8-12oz consumed before noon so that it doesn't disrupt sleep.

[21]

## Supplements

- **"Homocysteine Support" Formula**

Dosage: 800mcg methylfolate, 500-1000mcg Vitamin B12, 10-25mg Vitamin B6, 1g trimethylglycine(TMG)/betaine daily

Rationale: Homocysteine level is above RE:mind Target [22,23]

- **Zinc**

Dosage: 40-50mg Zinc Gluconate or Zinc Picolinate daily for 3 months

Rationale: Zinc levels below RE:mind Target and copper levels above RE:mind Target [24]

**Note:** Take zinc supplements separate from any calcium or iron supplements. Speak with your physician about retesting copper and zinc levels in 3 months to determine if continued supplementation is needed.

**test, test , Test, Test**

DOB/AGE: 03/16/48 70 yrs

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- **Omega-3**

Dosage: 1000-1500mg DHA with 500-1000mg EPA twice daily

Rationale: High levels of inflammation, as indicated by elevated hs-CRP. [25]

**Note:** Speak with your physician if you are taking any blood thinning medications.

- **Curcumin**

Dosage: 80-100mg active curcumin supplement three times daily

Rationale: High levels of inflammation, as indicated by elevated hs-CRP. [26,27]

**Note:** The amount of active curcumin is often found in doses of 400-500mg per dose. The best absorbed forms of curcumin are those in liposomal form with added piperine (ex: Longvida, Meriva, Theracurmin).

- **Aswagandha**

Dosage: 300mg twice daily

Rationale: Elevated cortisol-am levels. [28]

- **Vitamin D3**

Dosage: 3000IU daily

Rationale: Vitamin D levels below RE:mind Target [29]

**Note:** Speak with your provider about retesting vitamin D levels in 3-6 months to monitor supplement dose appropriateness.

- **Ginger**

Dosage: 1-2 teaspoons dried ginger or 2-4 Tablespoons fresh ginger daily

Rationale: High levels of inflammation, as indicated by elevated hs-CRP. [30]

**Note:** Ginger can be added to cooked dishes, to hot water to make tea, or blended into smoothies. If supplements are preferred, 1000mg ginger capsule twice daily is recommended.

### **RE:mind Consultation Notes:**

*The information contained in this report is confidential and is meant for the patient and treating physician. All recommendations are made based on the available patient information and are intended as a guideline and not to act as medical advice. All recommendations must be approved by the treating physician.*

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