



Live Stronger Longer: Optimize and Maximize Lifespan and Healthspan

Active Aging 2023
Jolie Root

1



Increase Healthspan:

- Exercise
- Diet
- Sleep
- Mindfulness
- Being social

Active Aging 2023 Jolie Root

2



This was never the plan.

- Ultra-processed Foods Now Comprise 2/3 of Calories in Children and Teen Diets and 57% of calories in adults.
- New study in JAMA also found kids and teens eat less unprocessed and minimally processed foods.

Active Aging 2023 Jolie Root

3



Active Aging 2023 Jolie Root

4

WHAT'S ON THE MIND DIET?

- AT LEAST THREE SERVINGS OF WHOLE GRAIN EACH DAY
- AT LEAST ONE BOWL GREEN OR RED VEGETABLES EACH DAY
- AT LEAST ONE BOWL BEANS OR SOY EACH DAY
- MEANS OR LEGUMES AT LEAST EVERY OTHER DAY
- POULTRY AT LEAST TWICE A WEEK
- FISH AT LEAST ONCE A WEEK
- IF YOU DON'T DRINK ALCOHOL, PLEASE DRINK ONE GLASS OF WATER
- ONE CUP OR MORE OF RED WINE EACH DAY
- MEANS THAT ARE LOW IN FAT AND SODIUM
- AVOID TRANS FAT AND SODIUM
- AVOID SUGAR SWEETENED BEVERAGES
- AVOID SALT
- AVOID SODA
- AVOID SWEETENED BEVERAGES
- AVOID SODA
- AVOID SWEETENED BEVERAGES
- AVOID SODA

The MIND trial:

- 923 individuals aged 58 to 98 for 2-10 years an avg 4.5 years. Cognitive function was measured yearly using 19 cognitive tests. Diets were scored by how closely they followed recommendations for the Mediterranean, DASH, or MIND eating patterns.
- High adherence to any of these diets was associated with reduced risk of cognitive decline.
- The Mediterranean diet had the greatest impact, with the top 1/3 of adherents realizing a 54% reduction in the risk of developing AD.
- Researchers found a 53% lower rate of Alzheimer's disease for those with the highest MIND diet scores (indicating a higher intake of foods on the MIND diet). Even those participants who had moderate MIND diet scores showed a 35% lower rate compared with those with the lowest MIND scores.

<https://www.hsph.harvard.edu/nutritionsource/healthy-weight/diet-reviews/mind-diet/>

Active Aging 2023 Jolie Root

5

Compared with the lowest adherence groups, participants with the greatest adherence to diets had plaque and tangle amounts that were similar to being:

- 18 years younger in the Mediterranean diet group
- 12 years younger in the MIND diet group

Healio

Data derived from: Agarwal J et al. Neurology. 2023;doi:10.1212/WNL.00000000000027176

Active Aging 2023 Jolie Root

6

Omega-3 EPA, DPA and DHA



Maintain Omega-3 Index of 8-12% in adults and 6% in children.

- Nerve cell membranes are very rich in LCPUFAs especially DHA.
- High intake of fatty fish is associated with beneficial effects on cognitive function.
- EPA and DHA supplements have beneficial effects on individuals with mild cognitive impairment.
- EPA and DHA are linked to higher hippocampal volumes.

Active Aging 2023 Jolie Root

7

Omega-3s EPA and DHA regulate neurodevelopment.

EPA and DHA play a very important role during brain development, partly through their regulation of the serotonin system. Reduced intake of EPA and DHA during neurodevelopment results in decreased serotonin synthesis, storage, release, and receptor function. Omega-3 fatty acid deficiency also affects the structure and wiring of the developing brain as it is associated with a decrease in neurogenesis, dendritic arborization, synaptogenesis, selective pruning, and myelination.



Learning Focus Concentration Memory Signaling Mood Anxiety Behavior
Protecting against cognitive decline, improved prognosis with TBI

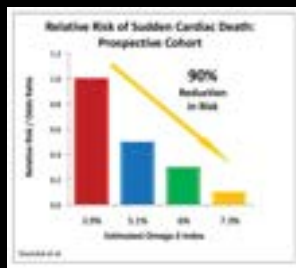
Active Aging 2023 Jolie Root

8

Omega 3 Index as risk for Sudden Cardiac Death

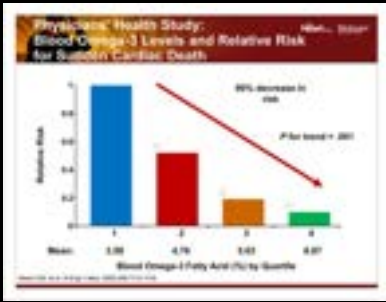


W.S. Harris, "The Omega-3 Index as a Risk Factor for Coronary Heart Disease," Am. J. Clin. Nutr. 87 (6), 1997S-2002S (2008).



Active Aging 2023 Jolie Root

9



Active Aging 2023 Jolie Root

10

Following "Life's Essential 8" checklist may slow biological aging by 6 years

Life's Essential 8 is defined by the American Heart Association as the 8 risk factors that people can improve through lifestyle changes to help achieve ideal cardiovascular health and reduce risk of dementia.

- _____ Eat Healthy
- _____ Get Active
- _____ Don't smoke
- _____ Sleep Well
- _____ Lose weight
- _____ Manage Blood Sugar
- _____ Manage Blood Pressure
- _____ Manage Cholesterol



Active Aging 2023 Jolie Root

11

Manage Blood Sugar

- Omega-3s, Fiber, Vitamin D3, Magnesium, Cinnamon, CoEnzyme Q10, Glycine, Berberine all play a role in supporting blood sugar at healthy levels.
- Home testing for A1C is available.



Active Aging 2023 Jolie Root

12

Manage Blood Pressure

- Omega-3s, Vitamin D3, CoEnzyme Q-10, Magnesium, Garlic, Potassium, Taurine, Berberine, all contribute to blood pressure within the normal range.

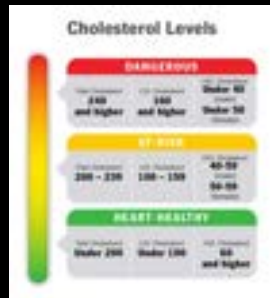


Active Aging 2023 Jolie Root

13

Manage Cholesterol

- EPA/DHA or just EPA, Pantethine, Niacin, Berberine, Fiber, RVP, Citrus Bergamot, Cinnamon, Ginger all play a role in maintaining healthy cholesterol levels.
- Test apoB
- Test at least once for LP(a)



Active Aging 2023 Jolie Root

14

Get your metabolic house in order.

- Exercise to optimal vo2max
- Increase weight lifting capacity.
- Watch: BMI, A1C.
- Improve body composition.
- Glycine, Berberine, Coenzyme q10, EPA, DHA
- Eat protein at each meal
- Do HIIT
- Lift and carry heavy things
- Stand up more
- Drink tea and or coffee
- Get a good night's sleep
- Limit added sugar
- Limit alcohol

Berberine to promote GLP-1 production by intestinal L cells, And activates AMPK

Active Aging 2023 Jolie Root

15

Health is a balancing act. Disrupt the balance and we accelerate biological age.



Glycation



Inflammation



Oxidation



Methylation

Active Aging 2023 Jolie Root

16

AGEs link diabetes, vascular injury and atherosclerotic disease.



Hyperglycemia induces formation of advanced glycation end products (AGEs) that bind to their receptors (RAGE) present on endothelial cells, smooth muscle cells, monocytes and macrophages, thus promoting vascular inflammation, endothelial dysfunction, and prothrombotic state.

Hyperglycemia and AGEs also cause generation of reactive oxygen species (ROS), which in turn increase AGE and oxidized low-density lipoproteins (oxLDL) formation. These pathways are all involved in the development of atherosclerosis and plaque progression/destabilization in diabetic and non-diabetic patients.

Pedrinio, D., Frascosa, A., Alessandro, V., Totta, F., & Luzzo, G. (2012). Type 2 Diabetes, Immunity and Cardiovascular Risk: A Complex Relationship. *InTech*. doi: 10.5772/11701



Active Aging 2023 Jolie Root

17

Glycation? Ask yourself.

- Do you have high blood pressure?
 - Glycated collagen molecules in blood vessel walls are less flexible, so blood pressure rises as blood travels through these stiffened vessels.
- Do you have cataracts?
 - The crystal-clear proteins in the lens of the eye become damaged-by ultraviolet rays of the sun-and form dark conglomerates of AGEs that interfere with vision.
- What is your Hemoglobin A1C level?
 - HbA1C is an inexpensive blood test that is widely available. Diabetics should be between 6 and 7 and everyone else should be below 6.

Active Aging 2023 Jolie Root


18

Slam the Brakes!

On Glycation

Balance:
 Inflammation
 Oxidation
 Methylation

Support:
 Gut Microbiome
 Mitochondrial function
 Detoxification



Active Aging 2023 Jolie Root

19

Berberine: significant improvement in lipid profiles, insulin resistance, and anthropometric measures associated with BBR supplementation.



The optimal dose of BBR was 1 g/day for TG, TC, and weight, 1.8 g/day for insulin and HOMA-IR, and 5 g/day for HDL. FBG's most efficient time frame was 40 weeks whereas DBP and waist circumference was 50 weeks.

Active Aging 2023 Jolie Root

20

Quercetin

- Plant-derived flavonoid found in abundance in grapes, berries, cherries, onions, kale, apples, red wine, and black tea.
- Prized for its antioxidant activity. Also inflammation balance, antimicrobial, antihistamine.
- Lowers uric acid**
 - Thanks to Dr. Richard Johnson at the University of Colorado, we now recognize that uric acid elevation is implicated as playing an important role in pervasive issues such as elevated blood pressure, insulin resistance, obesity, fatty liver disease, and diabetes.



Active Aging 2023 Jolie Root

21

Use it or Lose it: The impact of inactivity

Accelerated Muscle Aging & Anabolic Resistance Impacted by Physical Inactivity

- Short-term (5+ days) disuse significantly reduces muscle health, quality, mass, and performance
- ~ 0.55% rate of muscle atrophy, ~25% decrease in strength, ~4%-8.5% loss of muscle CSA, ~31% decrease in post-prandial MPS
- Just 2 weeks of reduced activity (e.g., 75% reduction in daily step-count) significantly reduces anabolic sensitivity
- ~43% decrease in insulin sensitivity, ~26% increase in insulin resistance, ~26% decrease in post-prandial MPS

• Paulsson KH et al. 2021




Active Aging 2023 Jolie Root

22

To Extend Healthspan: Diet, Movement, Sleep, Mindfulness, Community

Know your numbers.
Lipids, A1C, Blood pressure, BMI, Omega-3 Index

- **Glycation**
 - AGEs
 - Vit C, E, D, omega-3s, ALA, CoQ10, curcumin, glycine
- **Inflammation**
 - Cardiovascular & Brain Health
 - Omega-3s, vit D, melatonin, vitamin E, vitamin C, quercetin, berberine, glycine
- **Oxidation**
 - Vitamin A, C, E, selenium, zinc, MSM, NAC, glycine, glutathione, Coenzyme Q10
- **Methylation**
 - Vitamin B2, B12, folic acid, taurine, NAC
- **Detoxification**
 - Bcomplex, AAs, phospholipids, flavonoids, glutathione boosters, pre and probiotics




Active Aging 2023 Jolie Root

23

Thank you.

To reach me:
carlsonjolie@gmail.com



"Count your age by friends, not years. Count your life by smiles, not tears."

— Bob Prosen

24
