

## The Memory Preservation Diet™ © 2004, 2005

The Memory Preservation Diet™ © 2005<sup>1</sup> has 6 major emphases based on evidence to date: (1) A variety of different kinds of anti-oxidants especially vitamin E & C (2) Achieving higher ratio of omega-3 PUFA to omega-6 PUFA to approach 1: 4 ratio, achieved both by increasing omega 3 fatty acids\*\*, especially DHA; and reducing amount of omega 6's. (3) food selection to reduce insulin resistance (e.g. eat more complex carbs, reduce sweets and other simple carbs, eliminate soda, drink green tea, use ½-1 tsp. cinnamon daily). (4) Foods and nutrients helpful in reducing inflammation, such as tumeric & omega-3's. (5) food selection to reduce LDL cholesterol. (6) Sufficient folates/folic acid\* and B vitamins, These goals are to be achieved primarily through whole foods diet, fruits and vegetables daily, including one or more daily portions of green leafy vegetables\*\*\*\*\* which are great sources of 2 of the major types of nutrients emphasized in diet: folates and a variety of antioxidants; most green vegetables also have a small amount of omega-3 fatty acids, fish at least three times a week, with specification of most desirable protein, fats and other foods. The diet also emphasizes nutrient intense foods such as berries, juices, seeds and nuts because the diet also seeks to control calorie intake. Extra insurance especially for hard to achieve nutrients (e.g. Vitamin E and DHA) is provided through a multivitamin and supplements. The diet also includes other elements necessary for good overall health such as calcium, sufficient water to assure hydration (a problem with many people) and vitamin D. Target calories (generally reduce calories unless already losing too much weight: average 1800-2000, adjusted for gender and BMI), and no more than 1.5-2.0 gm of sodium, lower for those dealing with hypertension and other conditions. Tea, especially green tea, is suggested as an excellent choice of beverage because tea supplies an important category of antioxidants shown to be therapeutic for AD, helps avoid insulin resistance, is popular, inexpensive and no adverse effects.

### Specific nutritional elements key to the Memory Preservation Diet include:

- Study-supplied one cup a day (or equivalent): Berries: Blueberries, strawberries or other berries or cherries; Best time for berries is as part of breakfast
- At least 8 oz of fruit juice\*\*\*, e.g. orange juice, high in vitamin C, as well as
- 8 oz of vegetable juice\*\*\* daily (low sodium)
- A goal of 2 additional fruits and 2 additional vegetables every day, including at least 1 green leafy and emphasizing those rich in folates as noted above;
- Fish\*\*\*\* 3-4oz at least three times a week, ideally fish or other seafood 3-5 times a week
- Nuts\*\*\*\*\*, a small handful (50 grams) daily, alternating almonds(Vit E) and either (n-3) walnuts or pecans;
- At least one cup of tea daily, preferably green tea; (the one cup may have black tea added for flavor, if preferred); limit coffee intake to one or two cups a day. \*\*\*\*\*
- Preferred protein/fats: Choose those rich in target vitamins/folates, omega 3's & monounsaturated fatty acids (MUFAs). Minimize red meats, saturated fats & fatty dairy foods. Avoid transfats. Emphasize complex carbohydrates, fish/seafood, poultry, & vegetables (including beans, peas, soy), seeds, nuts as sources of protein. Healthy fats: e.g. PUFAs, or MUFA (e.g. olive oil). Use olive and canola oils for salads & cooking.
- Higher ratio of omega-3 PUFA to omega-6 PUFA. **Reduce** use of vegetable oils high in Omega 6: sunflower, safflower, corn & sesame oils. **Omega-3 fatty acids** are found mainly in cold water fish and fish oil but are also present in flax seeds (ground= best plant source), soybeans, tofu, walnuts, pecans, wheat, hemp & pumpkin seeds & omega-3 enriched eggs, wild game. Oils: canola (rapeseed), soy, flaxseed, walnut, pumpkin seed, hemp seed & perilla seed oils. Vegetables: purslane (a wild succulent salad plant sometimes cultivated), green leafy vegetables such as spinach, Chinese cabbage, sea vegetables such as sea weed; broccoli, kidney beans, grape leaves, & cauliflower.
- Reduce high glycemic index foods except fruits/vegetables rich in recommended nutrients. Avoid simple sugars/carbs. Use cinnamon, other spices known to increase insulin efficiency & eat breakfast including whole grains daily.
- Sufficient calcium intake can best be achieved with high calcium vegetables, low fat yoghurts, low fat ricotta cheese, and for those participants who are not lactose intolerant, low fat milk. Take Calcium/Magnesium supplements if needed for bone health.
- 4-6 glasses of water every day to supplement other fluid intake to total at least 8 cups/day.
- Omega 3 supplements: Preferred DHA from either Fish Oil or marine algae; Take two 1000 mg softgels a day (=900 mg fish oil). Alternative: 2 Flaxseed Oil 1000 mg softgels.
- Multivitamins containing at least 300% of RDAs for vitamins E, C, all B vitamins including thiamine, riboflavin & niacin except just 200 mcg folate (most people get enough from diet). 400 IU of vitamin E to be taken in a separate gel capsule as natural vitamin E including other tocopherols alpha, delta & gamma.

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**Chart 4: Vitamin Supplements Plus Explanation of Memory Preservation Diet™ © 2005**

Vitamin	Daily Supplementation Level	Dietary Reference Intakes for Men and Women	
	Dose *****	%RDAs(Male/Female)	RDAs (Male/Female)
Vitamin C, mg	250 mg	330/280 %	90/75 mg
Vitamin E, I.U.(natural E)	400 I.U.	2666 %	15 I.U.
Vitamin B6 mg	10 mg	800/860 %	2.0/1.4 mg
Vitamin B12, mcg	10 mcg	320 %	2.4 mcg
Folate, mcg	200 mcg	50 %	400 mcg
Vitamin B1, mg	10 mg	880/890 %	1.2/1.1 mg
Riboflavin, mg	10 mg	870/890 %	1.3/1.1 mg

**Disclaimer:** supplements suggested are at minimal levels to protect you; most nutrients should come from food. Before making changes in your diet consult your physician e.g. re specific conditions or drug interactions.

\* Folic **acid** is a member of the B-vitamin family. It occurs naturally in foods as **folates**, and is available in synthetic form in vitamin pills. Most diets provide only half of the daily required amount of folates, the natural form of folic acid found in foods; hence the high levels of folic acid supplements in processed foods. Foods naturally rich in folates include green leafy vegetables (such as spinach, bok choy, cabbage, savoy), other green vegetables such as asparagus, broccoli, brussels sprouts; beets; fruits: particularly orange juice, other citrus fruits and juices, strawberries and rose hips; avocados, beans and peas, particularly peanuts, garbanzo beans, lima beans, lentils, chickpeas (note: main ingredient of humus), green peas; eggs, and meats, and some dairy products (e.g. cheeses and yoghurt), and in whole-grain products, Sunflower seeds and wheat germ, and yeast extracts such as Marmite. The synthetic form of folic acid, which is considered as healthy as folates, is found in multivitamins, fortified breakfast cereals, and *enriched grain* products such as pasta, rice and breads. Folates and B12 have also been found to be important in the treatment of depression.

\*\***Omega-3's** are reported to help reduce depression, preventing attention deficit disorder, heart disease, rheumatoid arthritis and diabetes as well as cancer, allergies, eczema, dandruff, and inflammatory diseases.

\*\*\* **Juices** are ideal as part of a diet regimen for older adults because they are convenient, easy to store and use, and require little to no preparation. Many older adults find it difficult to shop for, prepare and eat whole fruits and vegetables and juices help ensure we increase intake of plant based nutrients. Juices offer the study the potential to deliver, free of charge, the same basic uices for part of the diet to all participants. Some studies have shown they offer most of the benefits of the whole food. Juices have the added benefit of being less fibrous than the whole fruit. Juices also help avoid the problems experienced by some older adults from eating the fibers typical in fruits and vegetables that may partially digest and then ferment in the intestines. Other fibers such of those in grains and nuts (and fiber supplements) pass through digestive tracks without being digested and are idea for intestinal health.

\*\*\*\*The diet does not emphasize only oily/fatty **fish**, even though they are higher in omega 3 fatty acids, for several reasons but most especially because many non-oily fish also are relatively high in omega-3's and other important nutrients. Many of the epidemiological studies relied upon for this aspect of the diet also did not distinguish among type of fish eaten. Mercury and other toxins in fish: USDA & nutritionists say it is still safe to eat as much as 12 oz/week of those with problems, i.e. some domestic salmon, and mercury levels in dark tuna, and swordfish, and shark. The primary goal of the diet is to encourage more eating of fish. Thus finding fish that each person/participant enjoys as tastes vary; many people enjoy a variety. The amount of omega-3's in a 3 oz serving of fish vary from 1.8 g in Atlantic Salmon, 1.7 g in Atlantic Herring, 1.4 in canned pink salmon, 1.4 in Whitefish, 1.3 in Blue fin Tuna, 1.0 in Atlantic Mackerel and Rainbow Trout, 0.8 in Bluefish and oil-canned sardines (soy bean oil also has Omega-3's), .7 in blue mussels, swordfish and white water canned tuna. .4 g in halibut, sole, king crab, 3 g in oysters, perch, shrimp, and .1 to .2 g in catfish, clams, cod and light tuna (& omega-3 containing vegetables). Eel, pilchards, and kippers also are good sources. (Source: USDA) Fresh tuna & salmon much richer in DHA than canned. Fish and DHA supplements are important because elderly often have difficulty creating DHA or EPA form of omega-3's the brain needs from plant sources.

\*\*\*\*\*The 3 nuts highlighted are currently regarded as the healthiest, include many nutrients. Almonds are high in vit. E and walnuts and pecans have the ideal balance of omega 3 vs. omega 6 Puffs. Thus one may want to alternate walnuts and almonds as well as adding flaxseed or other nuts and seeds to boost vegetable based **omega-3** content, on an average basis. 1 oz walnuts has 2.5 gm omega-3's...the same amount, though different form, than in 3.5 oz of salmon. Ground flax seed is very high in omega 3's and best plant source. Purslane, seaweed, marine algae & some green leafy vegetables also.

\*\*\*\*\* Doses recommended as part of the daily supplement are significantly under the upper limit established for these vitamins, with the exception of B12 for which there is not suitable data.

\*\*\*\*\* **Green Leafy Vegetables:** Dark green leafy vegetables are good sources of vitamin A, vitamin C, and calcium. They also are great sources of fiber. The darker leaves have even more of these important nutrients. Swiss Chard, Chicory and Escarole are also rich in Vitamin K, most of these are rich in folates, and also have small amount (e.g. .1 gram) of omega-3's PUFA in each serving. Spinach, kale, romaine lettuce, leaf lettuce, mustard greens, collard greens, chicory and Swiss chard are excellent sources of fiber, folate and a wide range of carotenoids such as lutein and zeaxanthin, along with saponins and flavonoids. Many green leafy vegetables are also rich in potassium. Some common dark green leafy vegetables are: **Swiss Chard**, which tastes similar to spinach, **Chicory and Escarole**, which has a slightly bitter flavor, **Collard Greens**, which has an earthy spinachy flavor, **Arugula**, which has a peppery taste, **Dandelion Greens**, which has a bitter tangy flavor, **Kale**, which has a slightly bitter cabbage-like flavor, **Mustard Greens**, which has a hot spicy flavor, **Spinach**, which has an earthy sweet flavor. Different leafy green vegetables provide different amounts of each target nutrient; thus eating a variety is best. Many can be eaten raw in salads and alternatively stir-fried or added to soups; others, if cooked, are best steamed (e.g. spinach) or lightly boiled and then stir-fried (collard greens). Other dark green leafy vegetables include **Cress or Watercress and New Zealand Spinach, the many varieties of Bok Choy and Chinese Cabbage.** Lighter green leafy vegetables include: Lettuce and Celery and can be used fresh in salads or lightly cooked. Most greens are in the Brassica family, including mizuna, kale, mustard, arugula, collards, cabbage and the leaves of any other Brassica plant, such as broccoli, romanesco and kohlrabi. There are many subvarieties as well: curly kale, black kale, white kale, red Russian kale. Non-Brassicac include chard, lettuce, spinach, dandelions and many others.

\*\*\*\*\* Reduce coffee consumption, We also suggest reducing other fluids such as coffee, which has been shown in other studies to aggravate bodily inflammation when taken in moderate to large quantities. Limit coffee intake to 1 or 2 cups/day. Consider eliminating.