

ADDENDUM:

Approaches to Healthy Living

Healthy people and healthy communities are interdependent. While we can all make positive choices for personal health, we don't all have equal access to nutritious food, clean air and water, safe workplaces, healthy housing or exercise environments, green spaces, peaceful neighborhoods, or quality health care. In suggesting the following individual approaches, we emphasize that these actions must be combined with community- and society-wide policy changes in order to be truly effective and make healthy living available to all.

As we describe in the previous chapters, key elements of healthy living include these principles:

- Eat healthy and nutritious food;
- Be active physically and mentally;
- Avoid harmful toxicants and pollutants;
- Be socially engaged with family, friends, and community.

WHAT TO EAT? "Eat food (don't eat anything your great grandmother wouldn't recognize as food), not too much, mostly plants."

Michael Pollan, *In Defense of Food: An Eater's Manifesto*

There are many approaches to accomplishing these goals throughout your life. The following is not meant to be comprehensive or complete* but rather offers general suggestions and guidelines, based on evidence reviewed in this report. Taken as a whole, they should help reduce the risks for cognitive decline, Alzheimer's and Parkinson's disease, and illnesses and conditions in the Western disease cluster.

Changing habits is not easy. We nevertheless encourage you to explore where you might start and use the following to help you organize your thinking about how to improve your health and the health of your family. We encourage you to consult the extensive reference list of organizations and publications available on our web site, including

our Pediatric Environmental Health Toolkit, at www.psr.org/Boston.

Guidelines for Healthy Nutrition

The following include many of the basics of the "Mediterranean diet." The term is generally used to refer to diets characterized by high intake of vegetables, legumes, fruits, whole cereals, fish, nuts; emphasis on unsaturated fatty acids (including olive oil) and low saturated fatty acids and meat; low-moderate dairy products; and regular moderate ethanol, primarily in the form of wine with meals.^a

These guidelines set a high bar. They are driven by scientific studies and have not been modified based on practical considerations such as personal taste, ethnicity, cost, or availability. We acknowledge that these recommendations depart somewhat from conventional eating patterns. As such they represent one ideal that people can move toward to the degree they are motivated, rather than expecting to necessarily adopt them as a whole. We also note other evidence-based diets that reduce risks of cardiovascular disease, diabetes, and cancer—for example, the Ornish diet, OmniHeart diets, and diets with higher amounts of protein with varying amounts of fat.^a We encourage people to consider other approaches as well, while keeping the critical importance of nutrition in mind.



1. Healthy living and healthy aging depend on good nutrition from the beginning of life.

- Good maternal nutrition during pregnancy is an important determinant of infant health and child development and helps to reduce disease risk of offspring throughout the lifespan.
- Breastfeeding is superior to formula feeding for both mother and infant and should be strongly encouraged. Among the many benefits, infants who are breastfed have a sharply reduced risk of becoming overweight or obese and developing diabetes.^{2,3}
- If using infant formula is necessary, avoid the highest iron supplementation options. Optimal levels of

* This should not be construed as medical advice. People should talk with their healthcare providers if they have any questions or concerns about adopting practices in these guidelines.

^a The guidelines are not comprehensive. We explicitly address only targeted issues discussed in the report, though many other nutritional concerns will be incidentally covered by the general pattern of the Mediterranean diet.

iron in infant formula are probably 4–7 mg/L. (See chapter 8.) Use soy formula only if necessary.^b

- Prioritize healthy and nutritious food for children, teenagers, and adults. Consumption of fast food and calorie-dense snacks is associated with increased caloric intake, weight gain, and obesity and should be reduced or eliminated.^{4 5 6 7}

2. Eat lots of fresh fruits and vegetables, especially deep-green and orange vegetables, a serving of each with every meal if possible. Fruits and vegetables provide essential antioxidants, vitamins, and other critical micronutrients. Many green vegetables contain small amounts of healthy omega-3 fatty acids, which add up to make a difference.

3. Avoid saturated and trans fats. Use vegetable oils that have a healthy balance of omega-3s, omega-6s, and monounsaturated fat.

- Avoid saturated fats by eating a predominantly plant-based diet, or consuming non-fat or low-fat varieties of dairy, lean meat, and chicken.
- Avoid frequent or routine use of oils high in omega-6s—especially corn, safflower, sunflower, and peanut oils. Avoid fast foods, which can be high in trans fats and omega-6s, and processed food, which is often high in omega-6s.
- Increase canola oil (a better balance of omega-3s and 6s) and olive oil (high in monounsaturates). Substitute these for butter, which is high in saturated fat, or margarine, which may be high in omega-6. Walnuts, flaxseed, and their oils are also high in omega-3s. Avoid hydrogenated and partially hydrogenated oils, usually listed on package labels.

4. Eat foods high in omega-3s.

- Eat fish at least once a week. Fish are a good source of omega-3s and other micronutrients, but those that are high in contaminants such as mercury and PCBs should be avoided. Cod, haddock, and pollock are among the low-fat, low-mercury choices. High-mercury fish include swordfish, king mackerel, albacore tuna, and tilefish. Canned light tuna can be safely eaten as often as once a week. Wild Alaskan salmon—fresh, frozen or canned—is an excellent

source of omega-3s and may safely be eaten on a weekly basis. For detailed fish consumption recommendations, see PSR's *Healthy Fish, Healthy Families* at <http://www.arhp.org/files/healthyfishhealthyfamilies.pdf>. If you don't eat fish, consider taking fish oil or algae-derived long-chain omega-3s. If using fish oil, chose a brand that has been distilled to remove toxicants.



5. Avoid routine consumption of sugars including table sugar, high fructose corn syrup, maple syrup and honey, and beverages and foods containing them.^c (Read the labels.) These foods cause rapid elevations of blood sugar, which has been linked to obesity, type II diabetes, cardiovascular disease, and related illnesses.

6. Consume low-glycemic carbohydrates that do not cause rapid, high blood sugar elevations—mainly unrefined, complex carbohydrates rather than refined/processed grain:

- Decrease—refined grain-based products including cakes, cookies, crackers, bagels, non whole-grain breads, corn chips, refined breakfast cereals, and so forth. These are generally high-glycemic foods.
- Increase—whole grains (especially pearled barley, steel-cut oats, rye, buckwheat, brown rice), legumes (as noted below), fruits, non-starchy vegetables, pasta, winter squashes, tubers (yams, sweet potatoes) These are low-to-moderate glycemic foods.
- Increase legumes—such as chickpeas, lentils, and soybeans. Legumes are an excellent source of high-quality carbohydrates (with low glycemic index) as well as protein and micronutrients.
- Information about the glycemic value of a wide variety of foods can be found at the glycemic index database at www.glycemicindex.com. The glycemic index (GI) for a given food is interpreted as follows: 55 or less = low GI, 56-69 = medium GI, 70 or more = high GI

^b Concerns about high manganese levels in soy formula are based on the limited data discussed in chapter 8. Evaluations of the safety of soy formula by expert panels have concentrated on potential impacts of phytoestrogens in soy on sexual maturation and reproductive tract development. They have not considered the potential impacts of excessive dietary manganese during infancy on childhood learning and behavior or later neurodegenerative disease.

^c This recommendation is based on the metabolic response to sugar. Honey, however, has anti-oxidant properties and is likely to be preferable when small amounts of sweeteners are used. Many foods and beverages contain added high fructose corn syrup or refined sucrose and should be avoided.

7. Get food from local and organic sources whenever possible—co-ops, CSAs (Community Supported Agriculture), community gardens, family farms.

Local food is fresher and more likely to be harvested when ripe, increasing the value of protective antioxidants and micronutrients. Eating locally also reduces energy required to transport food, thereby reducing greenhouse gas emissions. Purchasing locally helps build local food production capacity, increasing food security in the face of rising food-transportation costs and climate change. Eating organic foods will reduce your exposure to pesticides.

8. Drinks and Liquids

- **Alcohol** – Evidence supports **modest consumption** of ½–2 drinks a day for adults as routine prevention, though alcohol intake should be avoided in risk situations including pregnancy and driving motor vehicles. Higher levels of consumption increase the risk of heart, liver, brain diseases, and some kinds of cancer and should be avoided. Red wine has important antioxidants, including flavonoid polyphenols, though the evidence does not show a consistent benefit for red wine over other forms of alcohol.
- **Green tea** is high in polyphenols.
- **Caffeine** may reduce the risk of Parkinson’s disease.

9. Other

- **Other foods high in polyphenols which are neuro-protective.** These include curcumin (found in the spice turmeric).
- **Food additives to avoid**
- **Aluminum**

Recent evidence reopens a debate about whether dietary aluminum may increase the risk of Alzheimer’s disease. The data are limited and considerable uncertainty remains. Nevertheless, if you want to limit potentially excessive intake, avoid routine consumption of foods with aluminum-containing baking powder or SALP (sodium aluminum phosphate), an additive used in some grain-based products and some processed cheeses. Highest aluminum levels in food have been reported in some pancake and waffle products—including mixes, frozen and restaurant varieties. Smaller amounts have been reported in baking mixes for some cakes, biscuits and muffins, and in the crust and cheese of some frozen pizza. These products account for the bulk of dietary exposure.^{8 9 10} Aluminum additives are not always listed on the ingredient labels of baking supplies and products (including pancakes and waffles).

Reduce Exposure to and Generation of Toxicants

Exposures to some environmental chemicals can increase the risk of a number of different diseases, including those discussed in this report. Since environmental chemicals are so pervasive in our lives and exposure levels differ from person to person, it is virtually impossible to lay out guidelines that will be universally applicable. Therefore, we simply suggest here an approach to reducing your exposure to toxic chemicals and substances such as pesticides, metals and solvents and recommend consulting more comprehensive resources for additional details relevant to your specific circumstances. This analysis will also help you understand how you can minimize what you put back into the air, water and soil of the ecosystem. First, consider the following framework for understanding toxic exposures:

- **Where** you can be exposed to toxic substances including home, school, daycare facilities, workplace, community, hospitals and other care facilities;
- **How** you can be exposed via food, air, water, and soil;
- **At what times** you can be exposed, including seasonally, during special projects such as home renovations, or while engaging in gardening, hobbies, etc.
- **Which products you buy and use that may result in exposures**, including those for cleaning, personal care, lawn and garden maintenance, on your pets, and when renovating your home.

Next, here are some steps you can take to address major potential routes of exposure:

1. Inventory your home for hazardous materials you may be using for home cleaning and maintenance, lawn and garden care, personal care, and pet care. Dispose of these hazardous materials properly and replace with less-toxic alternative products or processes. Avoid hazardous exposures to toxicants such as lead and solvents during building and remodeling projects. Use “green” building materials, or those that are less toxic from manufacture to disposal.
2. Assess drinking water quality via water testing (for well water) or community water reports, and filter if necessary. The appropriate approach to filtration will depend on the specific contaminants identified.

3. Eliminate or reduce pesticide use in the home and on lawns and gardens. Adopt “Integrated Pest Management” techniques which include a variety of measures to prevent or eliminate pests.
4. Reduce consumption and waste, recycle materials, and conserve energy. You can further reduce fossil fuel consumption and air pollution by using public transportation and walking and biking when possible.
5. Assess workplace, school, community and care facilities for sources and nature of hazardous exposures. Work with the appropriate people to reduce use of toxicants.

Physical, Social and Mental Activity, Stress Reduction



Rationales for regular physical exercise, reduction of excessive stress, and rich social engagement are well established in the medical literature. Preliminary evidence and common sense also suggest benefits of challenging and engaging mental activity. While many different approaches are possible within each category, information comparing one to another is often lacking, and their relative advantages remain uncertain. Nonetheless, based on evidence that is available the following general guidelines are worth following:

1. **Physical Exercise**—Increasing physical activity at any age improves physical and emotional wellbeing. Walking more each day can improve health, prevent overweight and obesity, and help maintain independence. All family members should adopt daily exercise habits daily. Children should be encouraged to play outdoors (except where safety issues interfere). Keep active as much as possible. Choose stairs over the elevators

or escalators. Walk or bike for transportation whenever possible. Move more around your home or workplace. Daily aerobic exercise, as moderate as brisk walking, for at least half an hour, is very beneficial.

2. **Social, Family, and Community Activity**—is good for you and the broader community. Regular social engagement with others reduces the risk of cognitive decline in later years. Volunteer, get involved in community activities, stay in touch with family members.

3. **Reducing Stress**—is important. Many activities have not been adequately studied for their potential benefits, but some that have been addressed in this report including regularly *interacting with nature*. A recent review of the literature on meditation or *mindfulness-based stress reduction* (MBSR) also concluded that it is “a safe, effective, integrative approach for reducing stress. Patients and healthcare providers experiencing stress or stress-related symptoms benefit from MBSR programs.”¹¹ It requires no special equipment or financial investment, just an inclination to sit in a quiet place and try to calm the mind. *Yoga* has been practiced for thousands of years. It can be done anywhere there is a flat surface, and requires no special equipment. Practitioners worldwide attest to its mental and physical benefits.^{12 13} Take time out to relax. Many of us are constantly expected to multitask and respond instantly to ever more rapid communications. Try to find even a few minutes a day to relax.

4. **Mental Activity**—Exercising your brain may be beneficial for maintaining healthy cognition. Common sense ways to do this include crossword puzzles and word games, chess, and activities that require critical thinking. Such activities exercise your brain and may help keep it fit.^{14 15}

Endnotes

- 1 de Souza R, Swain J, Appel L, Sacks F. Alternatives for macronutrient intake and chronic disease: a comparison of the OmniHeart diets with popular diets and with dietary recommendations. *Am J Clin Nutr.* 2008;88(1):1-11.
- 2 Gunderson E. Breast-feeding and diabetes: long-term impact on mothers and their infants. *Curr Diab Rep.* 2008;8(4):279-286.
- 3 Plagemann A, Harder T, Franke K, Kohlhoff R. Long-term impact of neonatal breast-feeding on body weight and glucose tolerance in children of diabetic mothers. *Diabetes Care.* 2002;25(1):16-22.
- 4 Bowman S, Gortmaker S, Ebbeling C, et al. Effects of fast-food consumption on energy intake and diet quality among children in a national household survey. *Pediatrics.* 2004;113(1 pt 1):112-118.
- 5 McCrory M, Fuss P, Saltzman E, Roberts S. Dietary determinants of energy intake and weight regulation in healthy adults. *J Nutr.* 2000;130(2S Suppl):276S-279S.
- 6 McCrory M, Fuss P, Hays N, et al. Overeating in America: association between restaurant food consumption and body fatness in healthy adult men and women ages 19 to 80. *Obes Res.* 1999;7(6):564-571.
- 7 Maffei C, Grezzani A, Perrone L, et al. Could the savory taste of snacks be a further risk factor for overweight in children? *J Pediatr Gastroenterol Nutr.* 2008; 46(4):356-358.
- 8 Saiyed SM, Yokel RA. Aluminium content of some foods and food products in the USA, with aluminium food additives. *Food Addit Contam.* 2005 Mar;22(3):234-44.
- 9 European Food Safety Authority. Safety of aluminium from dietary intake. Scientific Opinion of the panel on food additives, flavourings processing aids and food contact materials. *EFSA Journal.* 2008;754:1-4.
- 10 Pennington JA, Schoen SA. Estimates of dietary exposure to aluminium. *Food Addit Contam.* 1995 Jan-Feb;12(1):119-28.
- 11 Praissman S. Mindfulness-based stress reduction: a literature review and clinician's guide. *J Am Acad Nurse Pract.* 2008 Apr;20(4):212-6.
- 12 Yadav RK, Ray RB, Vempati R, Bijlani RL. Effect of a comprehensive yoga-based lifestyle modification program on lipid peroxidation. *Indian J Physiol Pharmacol.* 2005 Jul-Sep;49(3):358-62.
- 13 Bijlani RL, Vempati RP, Yadav RK, Ray RB, Gupta V, Sharma R, Mehta N, Mahapatra SC. A brief but comprehensive lifestyle education program based on yoga reduces risk factors for cardiovascular disease and diabetes mellitus. *J Altern Complement Med.* 2005 Apr;11(2):267-74.
- 14 Wilson RS, Scherr PA, Schneider JA, Tang Y, Bennett DA. Relation of cognitive activity to risk of developing Alzheimer disease. *Neurology.* 2007 Nov 13;69(20):1911-20. Epub 2007 Jun 27.
- 15 Albert, MS. Changing the trajectory of cognitive decline? *N Engl J Med* 357:5502-3.