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The Diet Your Brain and Body Most Craves

Ancestral Diet:

65% Fruits, vegetables, nuts, legumes, honey
35% Lean game, wild fowl, eggs, fish, shellfish

American Diet:

55% “new” foods: Cereal, grains, milk, milk products, sugar, sweeteners, separated fats, alcohol.
28% Fatty meat, poultry, eggs, fish, shellfish
17% Fruits, vegetables, legumes, nuts

A Guide to our Ancestral Brain-Boosting Diet:

According to Dr. Boyd Eaton, of Emory University in Atlanta and co-author of *The Paleolithic Prescription*, here’s what to eat and not to eat to get more of the nutrients that sculpted our brains.

- Fruits and vegetables: Overwhelmingly, the primary staples among our ancestors were fruits and vegetables, notably berries and other fruits. They ate three times more of a wider variety of fruits and vegetables than we do. Along with nuts and legumes, fruits and vegetables provided at startling 65 percent of daily calories and about 100 grams of fiber a day – ten times our average intake. Fruits and vegetables supplied loads of vitamins, minerals, and antioxidants in amounts people now only get through supplements, says Dr. Eaton.
- Seafood galore: One of the most critical distinctions between our ancestral diet and modern diet is the right balance of omega-6 fats to brain-enhancing omega-3 fish-type fats. The Paleolithic ratio was one part omega-6 fat to one part omega-3 (or four to one, at most), which promoted smooth brain functioning. Omega-6s in the form of corn oils, margarines, and baked goods outstrip fish-type omega-3s by fifteen or twenty to one. It’s a sickening situation for cells, particularly brain cells, which simply malfunction or shut down if omega-3 fat is scarce and omega-6 is overwhelming. Thus, the only way to reinstate a brain-enhancing Ancestral type diet is to eat fatty fish, notably fatty salmon, sardines, mackerel, and herring, and/or take fish oil capsules and restrict omega-6s.
- Only lean meat: Our ancestors ate 37 percent of their calories in protein – two to three times that recommended today, says Dr. Eaton. The difference: Most protein came from lean wild game and fish, as well as from plants. Wild game that fed our ancestors was only 4.3 percent fat, compared with 25 to 30 percent fat in today’s major meat sources. Further, wild game was a source of all-important omega-3, essential for brain development. Wild game fat contains 2.5 percent EPA omega-3. It is virtually non-existent in domesticated beef. Unlike our ancestors’ meats, modern red meat is full of hazardous saturated fats. Our ancestors ate only 6 percent of calories in such animal fat, about half as much as we do. White meat poultry, without skin, is a good Ancestral meat equivalent, low in fat and a good source of protein.
- Nuts and legumes: Unfortunately, nuts have a bad rap because of their fat; but nuts are an “original” food, with fats attuned to our genes. Our ancestors ate all kinds of tree nuts as well as peanuts and other kinds of legumes (dried beans). Nuts and legumes also supply high-

grade vegetable protein, rich in Ancestral diets. A modern drawback: Canned dried beans and salted nuts are high in sodium which is incompatible with Ancestral genes. To avoid high sodium, cook your own beans without salt, thoroughly rinse canned beans to remove sodium, and buy unsalted nuts.

- Cereals, pasta, and bread: Cultivated grain-based foods are “new,” for our brains, a product of the ten-thousand-year-old Agricultural Revolution. Virtually absent in our Ancestral diets, grains had no part in fashioning our genes. Yet they are a major part of modern diets. Grains may not be harmful in themselves, says Dr. Eaton, but he fears they replace all-important fruits and vegetables, which have been staples in our diets for millions of years, “whereas grains have been staples for only a relatively few millennia.” Other researchers note that grains, notably wheat, can trigger subtle allergic reactions in many people, prompting headaches and depression, as well as arthritis and gastrointestinal problems, suggesting a genetic disharmony.
- Dairy foods: Our ancestors did not drink milk or use dairy products because they did not keep domesticated animals. Such milk products may screw up body functioning by adding high burdens of saturated fats and discordant proteins. We are the only mammals that continue to use milk products past the weaning stage, points out Dr. Eaton. To mimic an Ancestral diet, you should restrict milk, butter, cheese, and other dairy products. For some people, dairy foods are clearly gene-incompatible, because they lack the enzymes needed to digest milk. Cow’s milk is also a common cause of allergies.
- Sugar: Our remote ancestors used honey and fruits as sweeteners. Today, our main sweet is about 120 pounds of refined sugar a year. Actually, we eat about the same percentage of carbohydrates as our ancestors. But virtually all their carbs came from nutrient-rich fruits and vegetables. A mere one-quarter of ours come from fruits and vegetables. Most of our carbs are simple “empty calorie” sugar. How this unnatural overload of sugar affects our genes and our brains is unclear, but is apt to be quite detrimental. For sure, it drives up blood levels of insulin, glucose, and triglycerides, with dire implications for stroke and brain dysfunction.
- Processed oils: Our recent upsurge in consumption of processed vegetable oils and shortenings burdens our brains with unfamiliar types of fat. Ancestors ate only fat in foods, not as separated oils, and consumed about 22 percent in fat calories compared with our 35 percent. An overload of polyunsaturated fats, including hydrogenated and trans fats, triggers cell malfunction that is bad for the brain. Some oils are more compatible with brain needs: canola oil, olive oil, flaxseed oil.
- Potassium and sodium: The most striking way to mimic an Ancestral diet is to eat far more potassium than sodium. Our ancestors got 7000 milligrams of potassium daily, mainly in fruits and vegetables, and a mere 600 milligrams of sodium, compared with our paltry 2500 milligrams of potassium, and whopping 4000 milligrams of sodium. Humans are the only free-living mammals that eat more sodium than potassium, says Dr. Eaton. And we pay a high price in our death and disability toll from high blood pressure and strokes.

FACT: Our ancestors ate more calories (3000 a day) than we do (2000-2500) but burned more off in physical activity.

FACT: Ancestral humans typically took in one and a half to five times more vitamins and minerals than we do today in food, far exceeding our minimum recommended standards.

BOTTOM LINE: The closer you get to the original food source, the closer you are to the brain-boosting diet designed by your brain's ancient architects.

The Fat That Stunts Your Brain

Here's something to keep in mind the next time you and/or your kids go to a fast food restaurant for hamburgers, milk shakes, and fries or for a pizza loaded with fatty cheese: Such saturated fat may actually stunt the growth of your brain cells.

More frightening, the amount of saturated fat needed to produce memory impairment in animals is comparable to the amount Americans typically eat! It's logical then that such high animal fat diets may be subtle inducers of poor learning in young people and of accelerated age-related memory loss in adults. Studies also find high saturated fat associated with degenerative brain diseases, notably Parkinson's disease. A study by Richard Mayeux and colleagues at Columbia University showed that people over age sixty-five who ate the most animal fat were five times more apt to develop Parkinson's than those who ate the least animal fat.

Compelling research in small laboratory animals shows that the type of fat in the diet can actually change not just the function of brain cells, but their very shape – their morphology. In short, the fat you eat can change the configuration of your brain cells, for better or worse.

Researchers have known for more than a decade that saturated fat does something awful to mammalian brains. Laboratory animals fed lots of saturated lard don't learn as quickly or perform as well on a wide spectrum of memory tests, including finding their way out of mazes, as do animals fed polyunsaturated soybean oil. Indeed, lard-fed animals consistently display impaired short and long-term spatial memory, resulting in learning and memory dysfunction on a wide range of tasks and functions involving several regions of the brain, as well as neurotransmitters. This indicates that dietary fat has sweeping effects on brain function and helps manipulate extremely complex cognitive behavior in animals, says University of Toronto professor Carol E. Greenwood, Ph.D., a pioneering researcher in the effects of fat on the brain.

The major villain is saturated fat; it predictably causes major detrimental effects of memory and learning; mono-unsaturated fat (olive oil) may be beneficial to memory, and polyunsaturated fat may be detrimental or beneficial, depending on the type. The more saturated fats animals eat, the more severe their brain and memory malfunction. Dr. Greenwood demonstrated that rats' learning curves dropped in direct proportion to the amount of saturated fat they ate. On a diet of ten percent saturated fat, the animals learned virtually nothing!

FACT: When you feed animals a high saturated fat diet, they don't learn as rapidly.

Further, the harmful effects of saturated fat on the brain seem to be cultivated. The more years you consistently eat a high animal fat diet, the more severe the risk of "dumbing down." In fact, it appears the brain over time begins to adapt to a high animal fat diet, resulting in impaired learning. Thus, the danger comes from a long-time pattern of high saturated fat diet. A periodic splurge of a hot fudge sundae or cream pie is not likely to be detrimental in the long run, says Dr. Greenwood. Moreover, animal studies suggest that consistent high saturated fat diet seems to

somehow exert a direct toxic anti-learning effect on brain cells regardless of the other types of fat you eat. In other words, the danger comes from the saturated fat itself, not just an imbalance or lack of other beneficial fats.

It's not exactly clear how saturated fat messes up brain cells. There are many theories, involving changes in composition of cell membranes; electrical activity of neurotransmitters, notably serotonin; manipulation of enzymes; attacks by free radicals; decreased insulin sensitivity (increase in insulin resistance); and the uptake and utilization of glucose, a powerful substance in the brain.

Another astonishing fact was discovered, showing that saturated fat may literally strangle brain cells. Ground breaking new research by Patricia Wainwright and colleagues in the Department of Health Studies, Gerontology and Psychology at the University of Waterloo in Ontario, Canada, finds that saturated fat does more than influence the brain cell's function; such fat can actually alter the morphology, or shape, of the brain cells themselves! Visual examinations of brain cells retrieved after death from animals fed lots of saturated fat as fetuses and for eight weeks after birth reveal neurons that are stunted! Analyses of the gray matter of the fat-fed animals showed fewer and shorter dendrites with fewer of the branches needed to reach out to send and receive messages. In addition to having stunted dendrites, the high-saturated-fat-fed mice had generally lighter weight brains, as well as smaller bodies.

Dr. Greenwood explains that stunted dendrites can cripple memory, because physical changes actually take place in brain cells during memory and learning. "During periods of memory when someone is learning," she says, "we see an expansion of dendrites; thus dendritic expansion seems to be necessary in terms of memory function. Now if high-saturated-fat diets are limiting the ability of the neuron to expand during memory processes, it may partly explain why animals eating high fat diets have such poor memory performance. Scientifically, it's a very important finding, revealing a possible new way saturated fat influences brain functioning."

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TEN WAYS TO FEED YOUR BODY WHAT IT REALLY WANTS

1. Make fruits and vegetables the major part of your diet
2. Eat poultry without skin, or very lean meats and game.
3. Eat dried beans – legumes of all kinds, including peanuts, preferably unsalted.
4. Eat nuts, notably walnuts and almonds.
5. Eat fatty fish (salmon, sardines, mackerel), shellfish
6. Restrict omega-6 fats (especially corn oil), hydrogenated vegetable oils, and trans fatty acids.
7. Restrict sugar and sodium.

8. Restrict processed foods.
9. Take vitamin-mineral supplements, because it is impossible to totally imitate a nutrient-rich Ancestral diet without a boost from supplements.
10. Take fish oil capsules, especially if you don't eat fish several times a week.

GOOD AND BAD BRAIN FATS AT A GLANCE

BRAIN BOOSTING FATS:

- DHA: The top gun omega-3 type brain fat. You get it from eating seafood, or taking supplements.
- EPA: The other high potency omega-3 brain fat comes from eating fish or taking fish oil.
- Linolenic acid: The short-chain omega-3s that your body must transform to long-chain omega-3s to be beneficial to your brain. You get it in green leafy vegetables, nuts, and flaxseed.
- Monounsaturated fat, as in olive oil: Contains some antioxidants, does not increase vascular threats, and has been found to benefit memory.

BRAIN-BUSTING FATS:

- Saturated animal fat: Meat, whole milk, butter, cheese.
- Hydrogenated vegetable oils: Margarine, mayonnaise, processed foods. Check the label.
- Trans fatty acids: Margarine, processed foods, fried fast foods, such as French fries.
- Overloads of omega-6 vegetable oils: Processed foods; vegetable oils such as corn, safflower, and sunflower oils.