

CHAPTER 6

GET SMARTER

For years I've been telling people that exercise doesn't just do your body good; it can also make you smarter! I often hear, "Sure, Patch, but how can you *prove* that?"

Now science has proven what I've been saying all along. Thanks to brain-imaging studies in humans and neurochemical studies in animals, researchers are finding strong evidence that exercise actually helps your brain function better. Scientists have been looking closely at a protein called BDNF (brain-derived neurotrophic factor) that helps nerve cells connect in the brain. In clinical studies, rats that have BDNF levels boosted in their brains navigate mazes faster than rats whose levels hadn't been elevated. Brain injuries in high-BDNF animals also heal faster.

Scientists at Johns Hopkins University in Maryland believe that BDNF can help to rewire the brain. Even better, they found short stints of physical activity increase BDNF in animals' brains. In other words, *exercise* increases BDNF! In one study, even just a few minutes of swimming raised BDNF levels.

Studying BDNF in humans is more complex, but imaging techniques do show that exercise helps human brains. Magnetic Resonance Imaging (MRI) has revealed that **regular exercise postpones the effects of aging in the brain**. People who exercise lose brain tissue far more slowly than people who do not exercise. Also, exercise significantly improves cognitive skills (such as planning and paying attention) in adults over 60.

Physical activity that involves moderate exertion induces cells in the brain to reinforce old connections between neurons and to develop new connections. This greater network of neurons means you are better able to process and store information. In short, the more neuron connections there are in your brain, the better your brain is able to function.

Here's the best part: You don't have to be an athlete or run marathons to hike your IQ. Just a moderate exercise program will boost your smarts. Every time you go for a walk in the woods, step onto an exercise treadmill, or swim laps in the pool, tell yourself "I'm getting smarter!" It's a double whammy—healthy body, healthy brain.

Did you know?

Our super-size junk food cravings may dumb us down. Rats that were fed lots of saturated fats and sugars—equivalent to cheeseburgers and soft drinks—had significantly less BDNF in their brains than rats that were fed more nutritious food. And the adage about fish being "brain food" is true. A healthy diet high in omega-3 fatty acids such as fish oils increases BDNF in the brain. In other words, grilled salmon is going to give you more BDNF brain power than pork bacon.

A single piece of coconut cream pie or a cheeseburger is not going to suddenly make you dense (but it might make you feel overly full and sleepy). But when you're preparing for an exam or an important presentation, give some thought to what you have for supper the night before.

Choose Foods Wisely

Obesity is a major health issue in our society. In fact, over two thirds of the population is overweight. When it comes to food, very often we're eating the wrong foods in the wrong proportions. We shouldn't be asking ourselves, "Did I get good value for my money – was that plate big enough to be worth the dollars spent?" Instead, we should be saying, "Did I enjoy what I ate? Does this food fuel my body? Can I trust my body to know when it's full and not be seduced into wolfing down the whole super-sized serving?"

Evolution predisposed us to crave fats, which is why they taste so good to us. Animals in the wild have a very hard time getting fat. Have you ever seen a fat wolf or lion (outside of the zoo, where they are passively fed)? We humans used to be "in the wild," too. We used to have to hunt or gather plants for days on end. Whenever we managed to eat some

fat, it gave us a wonderful source of long-lasting energy to keep living. That's why we love french fries, gravy, ice cream and other fatty foods.

But we can satisfy our centuries-old craving for fat without reaching for junk food. There are foods that are chock full of healthy fats: olive, canola and flaxseed oil, seeds, nuts, rice, and cold water fish such as mackerel, salmon, and tuna. In addition to the "good" fats, your body needs fiber as well. Good fiber helps satisfy your appetite without adding on useless calories. When you eat fiber, make sure it's soluble. Soluble fiber absorbs and retains water, slowing down your digestive processes. This gives you better absorption of the nutrients in your foods, helps to stabilize your blood sugar and lower cholesterol, and also contributes to the health of your colon. **The top 10 sources of soluble fiber are oats, oat bran, legumes, seeds, carrots, bananas, oranges, soy products, wheat bran, and rice.**

Anti-oxidant foods help preserve the life of our cells and protect our hearts. Antioxidants help prevent what is called oxidative stress (damage due to oxygen) which produces free radicals (unstable molecules in our body). Free radicals are believed to be a factor in serious diseases such as Alzheimer's, ALS, diabetes, atherosclerosis, and some types of cancer. Some great anti-oxidant foods are beans (kidney, pinto and black), berries (blueberries, cranberries, raspberries, strawberries), artichoke hearts, prunes, apples, sweet cherries, plums, and pomegranates.

Here are some other healthy eating tips to consider. Instead of pork bacon, try turkey bacon. Instead of eating too many eggs, use egg whites (which makes for a really fluffy omelet). Instead of salt, use an herb seasoning. Instead of enriched pasta, try whole grain pasta. Explore the world of savory herbs—rosemary, basil, thyme, mint, dill. These can add wonderful flavor to your portions and lessen your craving for excess salt.

Experiment with vegetables. Here's a recipe I made up called "Citrus Stir Fry": I stir-fry vegetables along with pineapples, orange pieces, and lemon slices. It's really great flavor, and you're getting vegetables and fruit in the same entrée!

The combination of good nutrition, regular exercise, and portion control of your food will go a long way to helping you achieve an energetic healthy life and a good weight.

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DO THIS: This week, include some well-known brain foods in your meals.

Whenever possible, eat fresh vegetables rather than frozen or canned. And don't forget to drink approximately eight eight-ounce glasses of water per day. However, also realize that your water needs can vary according to your weight and lifestyle. The "eight by eight" rule is a general recommendation only. If you have questions about your specific water intake, it's a good idea to check with your doctor.