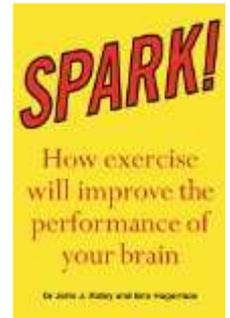


## Third Age: Health and Wellness

<http://johnratey.typepad.com/> (March, 2008)

### *Train Your Brain*

We don't need to be told that exercise is good for us. We know that it combats cholesterol, boosts our hearts and stops the pounds from piling on. But, beyond the obvious physical benefits of a good cycle, run or swim, a growing body of evidence suggests that getting breathless can also build the brain.

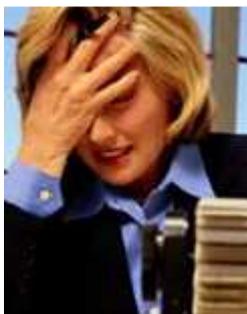
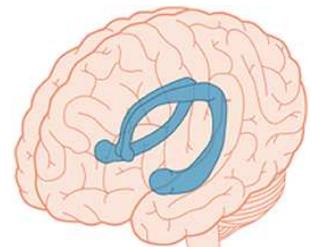


*"Spark: The Revolutionary New Science of Exercise and the Brain,"* shows how even regular brisk walks can boost memory, alleviate stress, enhance intelligence and allay aggression. John Ratey, an associate professor of psychiatry at Harvard Medical School in Boston and the book's author, says that exercise stimulates our grey matter to produce what he calls "Miracle-Gro" for the brain. ***"I can't understate how important regular exercise is in improving the function and performance of the brain,"*** he says. ***"It's such a wonderful medicine."***

### **Happiness**

Beyond the (potential) mood-lifting effects of fresh air and scenery, evidence suggests that pounding the pavement can also change the way our brains work to make us happier, or even stave off depression. ***"Exercise is as good as any anti-depressant I know,"*** Ratey claims.

Last December, scientists from Yale University wrote in the journal *Nature Medicine* that regular exertion affects the **hippocampus**, the area of the brain responsible for mood. Tests on mice showed that exercise activated a gene there called VGF, which is linked to a "growth factor" chemical involved in the development of new nerve cells. Tests show that this brain activation lifts a person's mood. Scientists are now working on a drug that mimics the effects of the VGF gene to market it as an alternative to conventional antidepressants.



### **Stress**

We respond to stress in the same way our ancestors did - by adopting a **"fight or flight"** response. Adrenalin and other hormones are released into our bloodstreams and our muscles are primed for response. Stress slows down the gastrointestinal system and reduces appetite, and can overexcite the brain, fuzzing our thought. By responding to or anticipating stress with physical activity (30 minutes on a treadmill, say, or 30 lengths of the pool), blood flow to the brain is increased, allowing the body to purge the potentially toxic by-products of stress. According to Ratey, exercise also helps in the long term. ***"It builds up armies of antioxidants such as***

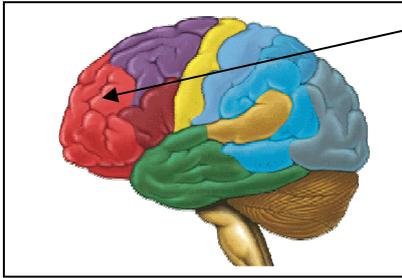
***Vitamins E and C,"*** he says. ***"These help brain cells protect us from future stress."***

### **Intelligence**

***"Exercise doesn't make you smarter, but what it does do is optimise the brain for learning."*** Physical activity boosts the flow of blood to the part of the brain that is responsible for memory and learning, promoting the production of new brain cells.

## Aggression

Exercise does more than "get it out your system," says John Ratey. *"People assume exercise reduces aggression by burning energy. In fact, exercise changes your brain so you don't feel aggressive in the first place."*



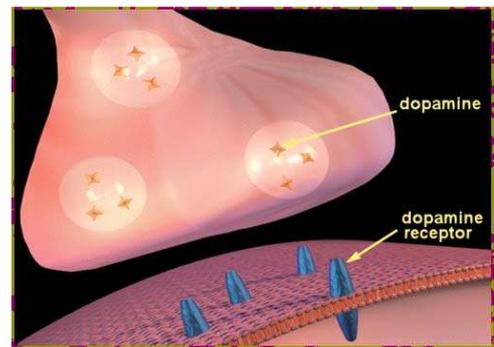
The frontal cortex is the part of the brain that decides whether you throw a punch or take something on the chin. Reduced activity in the region, a trauma or abnormal development can result in an inability to control violent urges. *"This area makes us evaluate the consequences of our actions,"* Ratey says. Exercise increases activity in that area, boosting rational thought, which makes us less likely to lash out.

## Memory

According to Ratey and other scientists in the field, a good workout does much to boost recall, especially as we clock up the years. *"When we're exercising, we're using nerve cells in the brain which help build up what I call brain fertilizer,"* he says. Ratey is talking about new research that suggests exercise increases blood flow to the part of the brain responsible for memory, and improves its function.

## Addiction

Research by British scientists suggests that as little as five minutes of brisk walking can reduce the intensity of nicotine withdrawal symptoms. In the tests, researchers asked participants to rate their need for a cigarette after various types of physical exertion. Those who had exercised reported a reduced desire to smoke. "If we found the same effects in a drug, it would immediately be sold as an aid to help people quit smoking," Adrian Taylor, the study's lead author at the University of Exeter, said last year. The principle is that exercise can stimulate production of the mood-enhancing hormone **dopamine**, which can, in turn, reduce smokers' dependence on nicotine.



## How Much Do You Need?

The mainstay of exercise is simple, brisk walking, Professor Ratey says. You'll feel the benefit even from a 30-minute walk. *"That's what people need to be doing as a minimum, ideally four or five times a week. If you want to do more, then great."* Professor Ratey also recommends **interval training** - really pushing yourself hard for between 20 and 30 seconds while running, cycling or swimming, so that you are momentarily exhausted. Do, say, two minutes of walking, 30 seconds' sprinting, then two minutes of walking again. It doesn't have to be a lot for a long time, but you will really notice the difference.