

DC Online (Chiropractic Research)

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Memory and Glucose Utilization

A study published in the *Proceedings of the National Academy of Sciences*¹ finds a correlation between a person's ability to metabolize glucose efficiently and the size of his or her hippocampus brain region. Thirty nondiabetic volunteers were given tests to assess their memory and glucose metabolism; results were correlated to MRI scans of their brains. The researchers found a significant relationship among these parameters, suggesting that memory problems seen in diabetics might not be so much due to circulatory problems as to long-term glucose metabolism deficiencies. It also suggests that activities that improve glucose utilization, such as exercise, will improve brain function.

1. *PNAS*, February 2003.
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Ephedra Warnings

The *Annals of Internal Medicine*² reports that the herb ephedra was the subject of many adverse reactions in 2001. More than 1,100 reactions were reported by poison control centers, accounting for 64 percent of all herb-related complaints. Ephedra is contained in less than 1 percent of all herbal products sold. However, the study didn't delve too deeply into the severity of the reactions, or compare such problems to the side-effects of other weight-loss programs or medications.

1. www.annals.org.
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Long-Term Concussion Effects

A study from the University of Pittsburgh Medical Center³ warns that high-school coaches should be extremely careful about returning athletes to competition after head injuries. Because many concussion symptoms, such as disorientation or hand-eye coordination problems, disappear after a few minutes, it is tempting to think that the athlete can safely return to a game. However, this study notes that more subtle symptoms, such as a sluggish memory, headache, or other problems, can persist up to seven days after the initial injury. This raises the possibility of much more severe problems manifesting, should a second injury occur. The medical center has developed a computerized test⁴ that compares an athlete's status after an injury to a baseline measurement, taken before the injury was incurred.

1. *Journal of Neurosurgery*, February 2003.
 2. Developed by the UPMC Sports Medicine Concussion Program.
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Asthma Drug Warning

The FDA has issued a warning⁵ that the popular asthma medication Serevent may pose some risks to patients' health. A study of more than 25,000 patients, designed to evaluate respiratory-related deaths and emergencies, found little difference between the drug (which is used as a preventive measure) and placebos, with a "statistically insignificant" increase in deaths in the medicated group. However, black patients, as a group, did see a significant increase in mortality when using the drug, especially if they were not concurrently using an inhaled corticosteroid anti-inflammatory medication. Interestingly, the drug appeared to fare worse, compared to placebos, as the asthma severity increased. The manufacturer states that patients who take this medication must also take regular doses of inhaled corticosteroids and carry a fast-acting bronchodilator.⁶

1. Associated Press, Jan. 23, 2003.
 2. www.fda.gov/medwatch/safety/2003/serevent.htm.
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Exercise for Heart Disease

A report in *Circulation Research*⁷ concludes that exercise can produce benefits similar to high-dosage steroid medication in cardiovascular disease treatment, but without the side-effects. Researchers were surprised that exercise reduced inflammatory processes in blood vessels, apparently as a consequence of increased physical force of blood flow. They theorized that the increased pressure flushes out pockets of stagnant blood in vessels that may be malformed, mildly inflamed or otherwise compromised.

1. *Circulation Research*, Jan. 23, 2003.
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Secondhand Smoke and Cavities

A study published in the *Journal of the American Medical Association*⁸ concludes that young children living in smoking households tend to get more cavities. Researchers found that the incidence of cavities in deciduous teeth among children exposed to smoke daily was nearly double that of children from nonsmoking households. The study involved 3,500 children from ages 4 to 11. A number of explanations for the findings were cited, including:

- Cigarette smoke lowers the immune response, allowing bacteria associated with tooth decay to proliferate.
- Smoke irritates nasal membranes, leading to "mouth breathing," which, in turn, dries the mouth and leaves less saliva available to counteract lactic acid build-up.

1. *JAMA*, March 12, 2003.
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Presumptuous Pelvic Exams

A number of prestigious U.S. medical schools are abandoning the "decades-old practice"⁹ of allowing students to perform pelvic exams on patients who are anesthetized for gynecological surgeries, without gaining the patient's consent in advance. The procedure is intended more for training students than to benefit the patients, and the patients are never informed of the procedure. These women are considered ideal subjects, since the anesthesia relaxes the pelvic musculature, and the patients do not feel pain caused by the fumbling of inexperienced trainees.

The practice is being changed as a result of increased complaints from medical students who feel it is unethical. However, according to an Associated Press report, "Consent is still far from a universal practice."¹⁰

1. Associated Press, March 11, 2003.
 2. Ibid.
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Fat for Epilepsy

British doctors suggest that implementing a high-fat, low-carbohydrate diet can dramatically reduce the need for medication in children suffering from epilepsy. Three months of the diet produced a reduction of up to 75 percent in children with severe cases in this small study in London. The ketogenic diet has been around since the 1920s, but is somewhat difficult to administer, as it must be calculated on an individual basis. The diet forces the body to break down fats for energy, producing ketone bodies that appear to inhibit seizures.¹¹ The researchers plan another study to compare variations of the diet.

1. Reuters, reporting on the work of Dr. Helen Cross and others at Great Ormond Street Hospital.
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Vitamin A and Fractures

A Swedish study of 2,322 men¹² reports that large amounts of vitamin A (from dietary retinol) can raise the risk of bone fractures. In men with the most extreme levels of the retinol in their blood, fractures increased seven-fold. Approximately 20 percent of the subjects showed levels high enough to correlate to a significant increase in hip fractures, even though many did not take supplements. Critics of the study note that even though it was conducted over a 20-year period, blood levels of vitamin A were measured only once.¹³

1. *NEJM*, Jan. 23, 2003.
 2. Associated Press, Jan. 22, 2003.
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Organic Food More Nutritious

Researchers from the University of California¹⁴ report that organically grown fruits and vegetables appear to contain a significantly higher percentage of antioxidant compounds, such as polyphenolics and vitamin C. The researchers studied blackberries, strawberries, and corn that were grown conventionally, organically or sustainably (similar to organic, which are pesticide-free, but may be fertilized with chemical compounds). The fact that both organic and sustainable produce showed higher antioxidant activity suggests to the researchers that pesticide use may be responsible for the difference.¹⁵ It is thought that when pesticides are used, the plants have little need to produce the antioxidants, which offer some protection from insects.

1. Research was led by Dr. Alyson Mitchell, assistant professor of food science at the University of California, Davis.
2. *Journal of Agricultural and Food Chemistry*, March 2003.

Side-Effects of Bad Medicine

A study of 30,000 Medicare patients in New England concludes that about 475,000 preventable side-effects occur each year in the United States, most of them attributable to doctor errors. Of the 180,000 life-threatening or fatal side-effects, about 40 percent could be prevented, say the researchers, who also caution that their figures are probably underestimated.¹⁶ These figures are for nonhospitalized patients; other studies have shown similar trends in hospitalized patients. About 20 percent of the preventable side-effects were attributed to patient errors.

1. *JAMA*, March 5, 2003.

Hyperactive Fatigue

A report in the journal *Pediatrics*¹⁷ suggests that many children diagnosed with attention deficit hyperactivity disorder (ADHD) may just be suffering from a lack of sleep. This study found that about one fourth of 5- to 7-year-old children with mild symptoms of ADHD snored, suggesting a disturbed sleep pattern. The author notes that clinical experience has shown him that many children no longer require ADHD medication once their sleep apnea is addressed.

1. *Pediatrics*, March 2003.

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