

DC On-Line (Research)

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Electromagnetic Fields and Suicide

Researchers from the University of North Carolina¹ report that electric utility workers appear to commit suicide at a higher than average rate. In a study of about 10,000 workers, those exposed routinely to low frequency electromagnetic fields committed suicide twice as often. The contrast was most evident in younger workers. The researchers suspect that electromagnetic radiation affects the production or metabolism of melatonin.

1. *Journal of Occupational and Environmental Medicine*, March 15, 2000.

Cab Driver's Brain

A study published in the Proceedings of the National Academy of Sciences² reports that the human brain structure changes to accommodate functional demands. This work analyzed the size and shape of London cab drivers' brains and found a definite enlargement of the posterior hippocampus. This part of the brain is associated with spatial memory. It appeared to be especially prominent in the more experienced drivers. However, to make room for this enlargement, their brains became smaller in the anterior hippocampus; there are little data to indicate the function of that area. Other studies have found adaptive brain structure changes in musicians.

2. *PNAS*, March 14, 2000.

Pain and People Killers

Swiss researchers report³ that painkillers are probably killing 2,000 patients each year in the UK. Nonsteroidal anti-inflammatory drugs (NSAIDs) are causing bleeding ulcers responsible for most of these deaths, they say.⁴ NSAIDs appear to block a coenzyme (COX-1) that protects the stomach lining. This research suggests that about one in 1,000 patients who take these drugs for at least two years will die from them.

3. *Pain*, March 2000.

4. Martin Tramer, et al., University Hospital, Geneva.

Egyptian Hepatitis Linked to Inoculation

A study of almost 8,500 people in Egypt strengthens suspicions that the country's high rate of

hepatitis infection may have resulted from a mass inoculation program years ago to treat schistosomiasis, a parasitic infection. As much as 20 percent of Egyptians test positive for hepatitis C antibodies, compared to about 1.5 percent of Americans. The study found a dramatic difference in the rate of infection between citizens old enough to be exposed to the treatment and those who were born after the treatment changed to oral medication. The hepatitis infection is thought to have spread via nonsterilized equipment such as reused needles.⁵

5. *Lancet*, March 11, 2000.

Long-Term Brain Growth

A new study published in *Nature*⁶ reports that, contrary to current medical thinking, the human brain continues to grow and develop large amounts of neural circuitry well into the teenage years. This study reports that during early childhood, the frontal area of the brain grows most rapidly. As the child reaches the teen years, the mid and posterior brain, areas associated with language and associative thinking, show the highest rate of growth.

The researchers say this suggests that the teenage years are a crucial point in brain development. For example, it is thought that learning a new language before this point is much easier, as the brain is able to make new connections as needed; after age 12, these areas start to become "hardwired." Other regions of the brain seem able to double the amount of gray matter during the mid-teenage years, and unneeded or unused areas may be diminished. Some researchers think that whatever activities teens immerse themselves in during this critical juncture will define their aptitudes for the rest of their lives.

6. *Nature*, March 2000.

Chew on This

Japanese researchers suspect that memory loss can be minimized by the action of chewing. They don't know quite why, but their studies of mice indicate that something about the chewing motion stimulates the hippocampus and helps mice perform better on memory tests as they age.⁷

7. *New Scientist*, March 8, 2000.

Smoking Infections

Aside from the long-term effects of cigarette smoking, a study from the Centers for Disease Control and Prevention reports that smokers stand a much higher risk of contracting acute life-threatening infections such as pneumonia or meningitis. The effect seems to relate directly to the amount of tobacco usage. Smokers were four times as likely to come down with pneumonia, but those who smoked 25 or more cigarettes each day had 5.5 times the risk. Those who kicked the habit gradually gained a normal resistance to infection in about 10 years.⁸

8. *NEJM*, March 9, 2000.

Driving under the Influence - of Benadryl

Researchers from the University of Iowa, using a driving simulator to test allergy patients, report some rather unsettling findings: Those taking a standard dose of an antihistamine (diphenhydramine) were more impaired behind the wheel than those who had consumed a few alcoholic drinks. Some tests judged the subjects' ability to match the speed of another vehicle and to stay in one's own driving lane. Those on antihistamines also did poorly when trying to judge if they were too drowsy to drive.⁹

9. *Annals of Internal Medicine*, March 6, 2000.

Fatty Acid Formula

Dallas researchers report¹⁰ that the addition of two fatty acids to infant formula will increase the intelligence of children as they grow. Researchers compared standard intelligence tests (Bayley Scales of Infant Development) of 56 babies divided into test groups for four months. At the end of the study, those who consumed formula fortified with docosahexaenoic acid (DHA) and arachidonic acid (AA) scored seven points higher (105.6 versus 98) on the tests, compared to those given the more typical baby bottle fare.

More than 60 countries have approved the addition of these fatty acids to baby formula. The FDA is considering allowing it in the United States. The lead researcher notes that the scores of the babies given the fortified formula approach those from an earlier study who were breastfed. Breast milk naturally contains DHA and AA, probably in optimum proportions.

10. *Developmental Medicine and Child Neurology*, March 2000; see: <http://www.cup.cam.ac.uk/journals/dmc/birch.pdf>.

Small Loss, Big Gain

A Boston University researcher,¹¹ using data from the Framingham heart study, reports that on average, a very small, maintained weight loss can produce large, lasting cardiovascular benefits. Her analysis shows that middle-aged individuals who lost about one pound each year for four years and then kept it off for the following four years had a 25 percent lowered incidence of high blood pressure during the subsequent 40 years. The numbers were drawn from the histories of 1,823 overweight men and women between the ages of 30 and 65.

11. Dr. Lunn L. Moore, in a presentation to a meeting of the American Heart Association, March 3, 2000.

TM for Atherosclerosis

A new study published in the American Heart Association's journal *Stroke*¹² suggests that

transcendental meditation can help prevent and treat some types of cardiovascular disease. The study looked at 60 hypertensive patients over age 20 for six to nine months. Half were given TM training; the other half were given instructions in proper diet and exercise. At the beginning and end of the study, ultrasound measurements were taken of the subjects' arterial wall thickness, including any arterial plaque. When the study ended, the TM subjects showed a reduction of .098 mm, while thickness of the other group's arterial walls increased by .054 mm.

12. *Stroke*, March 2000.

Marijuana Attacking the Heart

Research funded by the National Heart, Lung and Blood Institute and the American Heart Association¹³ finds that marijuana dramatically increases the risk of a heart attack in middle-aged and older users for an hour or two immediately after its use. During the first hour, the risk increases nearly five times, then sharply drops to about twice the normal risk during the second hour. The study involved 3,882 heart attack victims, 124 of which used the substance. The researchers were unsure of the exact chemical or physical reason for the heart attacks, but note that marijuana does tend to raise heart rate and blood pressure.

13. Presented to the American Heart Association conference in San Diego, March 3, 2000 by Dr. Murray Mittleman, director of cardiovascular epidemiology at Beth Israel-Deaconess Medical Center in Boston.

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