

# INTERNATIONAL HEALTH NEWS

*Your Gateway to Better Health!*

NUMBER 97

JANUARY 2000

9th YEAR



## **Editorial**

*Welcome to the 21st century and to our 9th year of publication. We have made good progress both in content and format over the past few years and know from your encouraging feedback that you appreciate our efforts to keep you up-to-date on the latest developments in health, nutrition, and natural medicine.*

*The year 2000 will mark the beginning of a new venture. In January we will be launching the publication of the first in an annual series of printed IHN yearbooks. The Yearbook 2000 will contain the abstracts, articles, and newsbriefs published in International Health News over the past year. The 200-page softcover book will have a detailed subject index so you can easily find the information you know is there, but can't quite put your finger on. We'll keep you informed as we get closer to the publication date and hope that you will reserve your copy and tell your friends about it.*

*In this issue we again touch on the emerging evidence that folic acid may well be the most important vitamin of all. Deficiencies of this B vitamin are unfortunately widespread and have been implicated in Alzheimer's disease, atherosclerosis, heart attack, stroke, osteoporosis, depression, dementia, cleft lip and palate, hearing loss, and neural tube defects. In this issue we report that folic acid deficiencies may also be associated with Raynaud's syndrome and increased risks for breast and colon cancer as well as cancer of the pancreas. Supplementing with 400 to 800 micrograms per day can indeed be a lifesaver, but keep in mind that folic acid needs an adequate supply of vitamins B6 and B12 in order to do its job.*

*There is good news for people who can't get to sleep without their Xanax or Valium. Melatonin can help them break their dependency. There is more evidence that prayer can help in the healing process and also a fascinating study which concludes that the Epstein-Barr virus may be involved in the development of breast cancer.*

*We hope you enjoy this first issue of the new century.*

*Yours in health,  
Hans Larsen*

## **January Highlights**

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## **LETTERS TO THE EDITOR**

What is methylfolate?

Bill, San Francisco, CA

**Editor:** *I believe methylfolate is shorthand for methyltetrahydrofolate which is a methylated form of folic acid. Methyltetrahydrofolate, also known as folinic acid, is actually the active form of folic acid and is intimately involved in the*

*methylation of homocysteine to methionine. Recent research has shown that oral supplementation with 5-methyltetrahydrofolate is effective in treating some forms of depression.*

\*\*\*\*

My son is on lithium carbonate for manic depression and would like to discontinue it, but his psychiatrist says no. I read your article on manic depression and fish oils and I would like to know more about this.

Hazel, Canada

**Editor:** *The work on fish oils and manic depression (bipolar disorder) was done at the Harvard Medical School so the findings should presumably be acceptable to your son's psychiatrist. I would suggest that you obtain copies of the original articles and discuss them with him. If he agrees, then it might be worthwhile to take the fish oil as well as the lithium carbonate for awhile and then back off*

*slowly on the lithium. This, of course, should only be done under strict medical supervision.*

\*\*\*\*

I am taking cod liver oil capsules every day. Do I also need fish oils?

James, New York

**Editor:** *Cod liver oils and fish oils are not the same. Cod liver oil and other fish liver oils are extracted from fish liver and are excellent sources of vitamins A and D. Fish oils are extracted from the tissues of fatty fish like salmon and menhaden and are good sources of EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). Fish oils do not contain vitamin A or vitamin D, but cod liver oil does contain EPA and DHA. However, you might exceed the RDAs for vitamins A and D if you were to try to obtain therapeutic amounts of EPA and DHA from cod liver oil.*

## ABSTRACTS

### Epstein-Barr virus implicated in breast cancer

PARIS, FRANCE. The Epstein-Barr virus (EBV) is a common human herpes virus involved in the development of infectious mononucleosis. The virus has also been associated with Burkitt's lymphoma, Hodgkin's disease, and stomach cancer.

Researchers at the French Institute for Health and Medical Research now provide convincing evidence that EBV may be involved in the development of breast cancer. Their study involved 98 women (73 per cent postmenopausal) and two men with previously diagnosed breast cancer. The researchers extracted biopsy specimens of the tumours from all participants as well as 30 samples of tissue adjacent to the tumours and five samples of lymph nodes with metastasis.

The DNA of all samples was analyzed using the polymerase chain reaction (PCR), Southern blot analysis, and immunohistochemical staining. The researchers found the Epstein-Barr virus in

51 per cent of the tumour samples, but in only 10 per cent of the samples of adjacent breast tissue. The prevalence of EBV was particularly high in tumours associated with aggressive metastasis (more than three lymph nodes involved); here 72 per cent of all tumours showed the presence of EBV as compared to only 44 per cent of tumours associated with three or less positive nodes. EBV was also detected more frequently in tumours that were negative for steroid hormone receptors; such tumours are associated with more aggressive disease and a poor outcome.

The researchers conclude that the Epstein-Barr virus may be implicated in the development of breast cancer particularly the more aggressive forms.

*Bonnet, Mathilde, et al. Detection of Epstein-Barr virus in invasive breast cancers. Journal of the National Cancer Institute, Vol. 91, August 18, 1999, pp. 1376-81*

## Iodine deficiency common in Australia

ST. LEONARDS, NSW, AUSTRALIA. Iodine deficiency during pregnancy can adversely affect the thyroid glands of both the mother and baby. It can also result in lowered intelligence and is considered to be the most common cause of preventable intellectual disability. Inadequate iodine intakes have long been thought to be a problem only in developing countries, but a recent study in the United States showed that almost 12 per cent of the American population is iodine deficient and that the average iodine intake has dropped by 50 per cent over the last 15 years.

The recommended daily intake of iodine is 100 micrograms for the general population and 150-200 micrograms for pregnant and breastfeeding women. About 90 per cent of ingested iodine is excreted in the urine so iodine status can be accurately assessed by a simple urine analysis. A urinary iodine concentration between 51 and 100 micrograms/L indicates a mild deficiency, a concentration between 26 and 50 micrograms/L corresponds to a moderate deficiency, and a concentration below 25 micrograms/L indicates a severe deficiency.

Medical researchers at the Royal North Shore Hospital now report the first disturbing evidence that iodine deficiency may be widespread in Australia. Their investigation involved 81 pregnant women, 26 of whom were also checked three months after giving birth, 135 diabetes patients, and 19 volunteers. Analyses of urine samples from all 235 participants showed that 19.8 per cent of the pregnant women, 34.1 per cent of the diabetics, and 26.3 per cent of the volunteers had a moderate to

severe iodine deficiency. As a matter of fact, only 40 per cent of the 235 participants had a normal iodine status, e.g. a urine concentration above 100 micrograms/L.

The researchers suggest that dietary sources of iodine in Australia may no longer be sufficient partly because the use of iodized table salt has declined significantly in recent years and partly because manufacturers of processed foods use only non-iodized salt in their products. They also point out that milk used to contain significant amounts of iodine because iodine-containing solutions were used to clean milking equipment and containers. These solutions, however, have now been replaced by more "modern" chemicals thereby eliminating an important source of iodine. The researchers urge further larger scale studies to better define the problem.

Dr. Creswell J. Eastman of the University of Sydney supports the call for further investigations and perhaps mandatory iodization of all salt. As an immediate precaution he recommends iodine supplements for all pregnant women from the time of conception until weaning of the infant. NOTE: Well-formulated multivitamin tablets usually contain 150 micrograms of iodine per daily dose.

*Gunton, Jenny E., et al. Iodine deficiency in ambulatory participants at a Sydney teaching hospital: is Australia truly iodine replete? **Medical Journal of Australia**, Vol. 171, November 1, 1999, pp. 467-70*

*Eastman, Creswell J. Where has all our iodine gone? **Medical Journal of Australia**, Vol. 171, November 1, 1999, pp. 455-56 (editorial)*

## Raynaud's phenomenon linked to homocysteine level

TEL-AVIV, ISRAEL. Raynaud's phenomenon (RP) involves a disruption of blood flow to fingers or toes resulting in cold, numbness, and a characteristic white colour of the affected parts. RP is often associated with scleroderma or systemic lupus erythematosus (secondary RP), but can also occur as a separate disease entity (primary RP or Raynaud's disease). The cause of the phenomenon is unknown, but it is believed that an abnormality in the endothelium

(the single layer of cells that line the blood vessels) is involved.

Now researchers at Tel-Aviv University report that high blood plasma levels of homocysteine are closely associated with RP. Their study involved 10 patients with primary RP, 10 patients with RP secondary to scleroderma, and 20 healthy controls. The researchers measured plasma levels of homocysteine and folate (folic acid) in fasting blood samples taken from all participants. They found the average (mean)

homocysteine level of controls to be 5.9 micromol/L; patients with primary RP had a mean homocysteine level of 15.5 micromol/L while patients with secondary RP had a mean level of 11.6 micromol/L. A level above 10.5 micromol/L is considered excessive and is associated with an increased risk for heart disease and stroke. Homocysteine levels tend to be inversely proportional to folate levels. In this study controls had a mean folate level of 8.84 nanograms/mL, patients with primary RP had a mean level of only 4.79 ng/mL while

patients with secondary RP had a mean level of 7.15 ng/mL.

The researchers speculate that high homocysteine levels may be, at least in part, responsible for the abnormal behaviour of the endothelium in RP patients. They suggest further work to investigate this connection and, if indeed proven, recommend that RP patients be treated with folic acid supplementation.

*Levy, Yair, et al. Elevated homocysteine levels in patients with Raynaud's syndrome. Journal of Rheumatology, Vol. 26, November 1999, pp. 2383-85*

## Stomach complaints common among Canadians

HAMILTON, CANADA. A team of researchers from McMaster University and Janssen-Ortho Inc. of Canada has just released a major report which details the prevalence of upper gastrointestinal (UGI) symptoms among Canadians. The study involved 1036 adult Canadians selected to reflect the general population in terms of age, sex, marital status, and income. The participants were interviewed to determine how often they experienced UGI symptoms such as heartburn, belching, bloating, nausea, stomach pain, regurgitation, and an excessive feeling of fullness after eating. The participants also completed a self-administered questionnaire aimed at gauging their overall feeling of well-being.

Almost 29 per cent reported having had substantial upper GI symptoms within the preceding three months and most of these were of a chronic nature. Only 34.1 per cent of the participants had never experienced any symptoms. Dysmobility symptoms (feeling fullness, nausea, vomiting, regurgitation, belching, bloating, and a general feeling of discomfort in the upper abdomen) were the most common features of chronic GI symptoms (54.9 per cent) with heartburn being next at 42.5 per cent and ulcer-like symptoms at 12.4 per cent. Chronic UGI symptoms were more common among the poor, the unemployed, the poorly

educated, and among people who had recently experienced a stressful event. These symptoms were closely related with a substantially lower level of well-being, sleep disturbance (40 per cent among sufferers versus 2 per cent among non-sufferers), the need to avoid certain foods, and interference with social activities. Overall, the reduction in well-being score was similar to that observed in patients with migraine or mild congestive heart failure. Absenteeism and unrelated health problems were also substantially more frequent among people with chronic GI symptoms.

Most UGI symptom sufferers treat themselves with over-the-counter remedies. Unfortunately, most of these medications are designed to alleviate heartburn, but have little or no effect on the more common dysmobility problems.

The researchers conclude that upper GI problems are common in Canadians, have a substantial economic impact, and materially impact the well-being of affected individuals. NOTE: This study was funded by Janssen-Ortho Inc. of Canada.

*Tougas, Gervais, et al. Prevalence and impact of upper gastrointestinal symptoms in the Canadian population: findings from the DIGEST study. American Journal of Gastroenterology, Vol. 94, October 1999, pp. 2845-54*

## Prayer helps heart patients

KANSAS CITY, MISSOURI. A 1988 study reported significant benefits of intercessory

prayer (praying for others) for heart patients. Now researchers at the Mid America Heart

Institute, the University of Missouri, and the University of California (San Diego) report the results of a larger study designed to determine the effect of intercessory prayer on the course of illness in heart disease patients admitted to a coronary care unit. The study was randomized, controlled, and double-blind and involved 466 patients in the prayer group and 524 in the control group. All patients were given the usual standard care for heart patients. The first names of the patients in the prayer group were given to "prayer" teams of five Christians who then prayed daily for each person for the 28 days following admission. The prayer was for "a speedy recovery with no complications". The prayer teams only knew the first names of the patients; the patients and their physicians had no knowledge of the prayer experiment. Prayer usually began within one or two days of admission.

At the conclusion of the experiment all patient charts were evaluated by cardiologists and the number and severity of adverse events occurring during the stay in the coronary care unit were added up according to a scoring system (MAHI-CCU score) developed prior to the experiment. A statistically significant difference was observed between the two groups with the prayer group having an 11 per cent lower incidence of complications requiring further surgical or medical treatment. The researchers conclude that the effect of intercessory prayer is real, but can offer no explanation for it. Other researchers attribute the beneficial effects to currently unknown physical forces "generated" by the intercessors and "received" by the patients.

*Harris, William S., et al. A randomized, controlled trial of the effects of remote, intercessory prayer on outcomes in patients admitted to the coronary care unit. Archives of Internal Medicine, Vol. 159, October 25, 1999, pp. 2273-78*

## Melatonin facilitates tranquilizer withdrawal

TEL-AVIV, ISRAEL. Benzodiazepines such as alprazolam (Xanax), lorazepam (Ativan), oxazepam (Serax), and diazepam (Valium) are the most frequently used drugs for the treatment of insomnia particularly among the elderly. Benzodiazepines are only supposed to be used for short periods of time as prolonged use can engender psychological dependency, impair memory, and ultimately lead to further sleep disturbances. Nevertheless, many people use them continually and have a very difficult time discontinuing them.

Researchers at Tel-Aviv University now report that supplementation with melatonin is very effective in helping people withdraw from benzodiazepines and improve their sleep quality. The study involved 34 mostly elderly subjects (mean age of 68 years, range of 40 to 90 years) who were divided into two groups. The active treatment group received 2 mg of controlled-release melatonin two hours before bedtime, while the control group received a placebo. All participants were encouraged to reduce their usual benzodiazepine dosage by 50 per cent in the second week of the experiment, by 75 per cent during weeks three and four, and to completely eliminate the drug during weeks five

and six. At the end of week six, 14 out of 18 participants (78 per cent) in the melatonin group had successfully discontinued the use of benzodiazepines and also reported a significantly improved quality of sleep. In the placebo group only four out of 16 participants (25 per cent) had discontinued the drug at the end of the sixth week. All participants were given the opportunity to receive melatonin during a subsequent six-week period. Six members of the placebo group were able to withdraw completely during this second trial period. A follow-up assessment of the 24 patients who had discontinued benzodiazepines found that 19 of them were still off the drug and continuing on melatonin while maintaining good sleep quality at the end of a further six-month period.

The researchers conclude that melatonin can help people withdraw from benzodiazepines and improve sleep quality. They point out that melatonin is safe and produces no withdrawal effects. NOTE: This study was partially funded by Neurim Pharmaceuticals Ltd., a manufacturer of time-release melatonin.

*Garfinkel, Doron, et al. Facilitation of benzodiazepine discontinuation by melatonin. Archives of Internal Medicine, Vol. 159, November 8, 1999, pp. 2456-60*

## Testosterone levels and prostate cancer

HELSINKI, FINLAND. It is generally believed that male sex hormone levels play a role in the development of prostate cancer. Clinical studies aimed at elucidating this role have produced conflicting results and it is not clear whether elevated androgen (male sex hormone) levels are associated with an increased, decreased or normal risk of prostate cancer.

A group of Finnish researchers recently released the results of a long-term study which found no significant correlation between androgen levels and the subsequent occurrence of prostate cancer. The study involved 16,481 Finnish men (aged 18 to 78 years) who had blood samples drawn between 1966 and 1972. By 1991, 166 of the men had been diagnosed with prostate cancer. Comparing the patients' serum levels of testosterone, sex hormone-binding globulin, and

androstenedione to those of 300 matched controls produced no evidence of an association between the levels of these hormones and the prevalence of prostate cancer.

The researchers did notice a direct relationship between prostate cancer incidence and testosterone levels when cases occurring within eight years of the blood sampling were excluded from the analysis. This correlation, however, was not statistically significant. They conclude that high androgen levels are not associated with an increased risk of prostate cancer in Finnish men. However, they caution that racial differences may exist in this relationship.

*Heikkila, Ritva, et al. Serum testosterone and sex hormone-binding globulin concentrations and the risk of prostate carcinoma. Cancer, Vol. 86, July 15, 1999, pp. 312-15*

## *Helicobacter pylori* and iron deficiency anemia

ROME, ITALY. Recent studies have shown an association between *Helicobacter pylori* infection and iron deficiency. Now medical doctors at the University La Sapienza report that iron deficiency anemia in patients with *H. pylori*-associated gastritis can be cured by eradicating the bacteria.

The experiment involved 30 patients (26 women and 4 men) who had iron deficiency anemia of long standing. All patients had undergone a thorough gastrointestinal evaluation and the only abnormality discovered was the presence of *H. pylori*-associated gastritis (inflammation of the stomach lining). All patients were treated for two weeks with 40 mg/day of omeprazole (Losec) and 1000 mg/day of amoxicillin; for the first week they were also given 250 mg of metronidazole three times daily after meals. Study participants also stopped taking all iron supplements. The patients underwent a clinical examination three, six, and twelve months after the completion of the eradication regimen. At the three-month check-up all patients reported

the disappearance of anemia-related symptoms such as fatigue, pallor, and decreased exercise capacity. An endoscopic evaluation at six months showed that *H. pylori* had been eradicated in 89.3 per cent of the patients and that 75 per cent of them had completely recovered from anemia; this recovery rate rose to 91.7 per cent after 12 months. Average ferritin levels increased by more than 300 per cent over the 12-month follow-up period from 5.7 micrograms/L to 24.1 micrograms/L; this despite the discontinuation of iron supplements.

The researchers urge further studies with larger groups of patients, but nevertheless conclude that eradication of *H. pylori* in iron deficient anemia patients with *H. pylori*-associated gastritis can lead to a complete recovery and eliminate the need for iron supplements.

*Annibale, Bruno, et al. Reversal of iron deficiency anemia after Helicobacter pylori eradication in patients with asymptomatic gastritis. Annals of Internal Medicine, Vol. 131, November 2, 1999, pp. 668-72*

## Suicide and handgun ownership

SACRAMENTO, CALIFORNIA. Of the more than 30,000 firearm-related deaths recorded in the United States in 1997 more than half were the result of deliberate acts of suicide. Researchers at the University of California now report that owning a handgun is indeed very detrimental to life. Their study involved 238,292 adult Californians who purchased a handgun in 1991. In the first week after purchase the rate of suicide among the gun owners was 57 times higher than among the general population and in the first year after purchase suicide was the leading cause of death. Suicide committed with a firearm was the second-most common specific cause of death after heart disease, but ahead of cancer and traffic accidents.

Women and handguns would appear to be a particularly dangerous mix. Women between the ages of 21 and 44 years purchased 75.4 per cent of handguns bought by women. In this group 51.9 per cent of all deaths during the first year of purchase was due to suicide with 37 per cent having been committed by a firearm, in the

vast majority of cases (98.3 per cent) by a handgun. Women who purchased a handgun were also found to be twice as likely to be killed by somebody else with the aid of a handgun than were women in the general population.

The researchers conclude that buying a handgun is associated with a substantial increase in the risk of suicide beginning within a week of purchase and persisting for at least six years. They point out that stricter gun control laws in other states and countries have resulted in a rapid decrease in gun-related suicides and suggest that reducing access to firearms is an effective method of preventing suicide by firearm.

*Wintemute, Garen J., et al. Mortality among recent purchasers of handguns. **New England Journal of Medicine**, Vol. 341, November 18, 1999, pp. 1583-89*

*Rosenberg, Mark L., et al. Firearms and suicide. **New England Journal of Medicine**, Vol. 341, November 18, 1999, pp. 1609-11 (editorial)*

## Homeopathy revisited

NEW YORK, NY. Homeopathy is one of the fastest growing modalities of natural medicine. For the past two decades sales of homeopathic medicines have increased by 20 per cent to 30 per cent per year in both Europe and the United States. The French Medical Association recently called for full official recognition of homeopathy and its inclusion in standard medical training. Nevertheless, physicians in North America are generally skeptical about homeopathy because they believe its claims are incompatible with current Western medical knowledge.

Dr. Daniel Eskinazi of the Columbia University College of Physicians and Surgeons has now scrutinized this belief and has reached the conclusion that the principles of homeopathy are not in conflict with accepted biomedical dogma. The two main principles of homeopathy are that "like cures like" and that homeopathic medicines so dilute that no molecules of the original substance are present can still exert an effect. The principle of "like cures like" means that a substance which in high concentrations induces

illness in healthy people can in very dilute concentrations cure the same illness in sick people.

Dr. Eskinazi points out that there are several pharmaceutical drugs (e.g. aspirin, digoxin, epinephrine) which can produce one effect at low doses and the opposite effect at higher doses - or can produce one effect in sick people and another in healthy people. He concludes that the paradoxical effects of these drugs are very similar to the effects that led Samuel Hahnemann to formulate the first principle of homeopathy.

Dr. Eskinazi goes on to investigate the aspect of dilution. Many homeopathic remedies are diluted to the point where the concentration of the active substance in the solution (usually distilled water) is less than 1 in 100,000 parts. This is a very high dilution indeed. However, there are many substances in conventional medicine which are active at even higher dilutions. Just one molecule of certain pheromones is enough to cause a noticeable effect. Leukotrienes release luteinizing

hormones at concentrations as low as 10<sup>-20</sup> mol/L and proline effects sea anemones at concentrations so low that no proline molecules would theoretically be present in the solution.

He suggests that there are many examples in conventional biomedical research where substances have been found to be biologically active in the same low concentrations as

homeopathic medicines used in standard practice. He concludes that the claims and principles of homeopathy are not incompatible with current biomedical knowledge.

*Eskinazi, Daniel. Homeopathy re-revisited: is homeopathy compatible with biomedical observations? Archives of Internal Medicine, Vol. 159, September 27, 1999, pp. 1981-87*

## Folates and cancer prevention

TORONTO, CANADA. Folates (derivatives of folic acid) play a key role in the synthesis, repair, and methylation of DNA. It is therefore not surprising that a deficiency in this essential B vitamin has been implicated in Alzheimer's disease, atherosclerosis, heart attack, stroke, osteoporosis, depression, dementia, cleft lip and palate, hearing loss, Raynaud's phenomenon, and of course, neural tube defects.

There is now also evidence that a folate deficiency may be involved in the development of certain cancers. Dr. Young-In Kim, MD of the University of Toronto presents an overview of the current knowledge regarding the role of folates in cancer prevention. Some 20 studies have been published regarding the association between colorectal cancer (cancer of the colon or rectum) and folate status. Collectively, these studies suggest that people with a high intake of folates can reduce their risk of developing colorectal cancer by about 40 per cent when compared to people with low intakes. A study involving almost 90,000 American female nurses concluded that nurses who had been supplementing with 400 micrograms/day or more of folic acid for 15 years or more had a 75 per cent reduction in the risk of colorectal cancer when compared to people who did not supplement.

The evidence concerning folates and breast cancer is not quite as clear. Studies have shown that even moderate alcohol consumption increases the risk of breast cancer and that this risk can be counteracted by supplementing with

folic acid. The jury is still out on whether folate supplementation reduces the risk among non-drinkers although one study did show that postmenopausal women could decrease their risk of developing breast cancer by supplementing with folic acid. Another study involving 300 premenopausal women found a 50 per cent lower risk among women whose intake exceeded 304 micrograms/day. Other studies, however, have failed to confirm this effect.

A major study involving over 29,000 male, Finnish smokers found that those who developed pancreatic cancer had a significantly lower blood serum level of folate than did those who did not. A baseline serum folate level above 4.45 ng/mL was associated with a 55 per cent risk reduction when compared to levels below 3.33 ng/mL. An Australian study found a 64 per cent difference in risk between men with the highest folate intake and those with the lowest intake.

Dr. Kim concludes that a moderate increase in folate intake can materially help reduce the risk of certain cancers, but cautions that people who already have cancer should not increase their folate intake as there is evidence that high folate levels may accelerate the growth of existing tumours.

*Kim, Young-In. Folate and cancer prevention: a new medical application of folate beyond hyperhomocysteinemia and neural tube defects. Nutrition Reviews, Vol. 57, October 1999, pp. 314-21*

## GABA levels low in depression

NEW HAVEN, CONNECTICUT. Animal studies have shown that low brain levels of gamma-aminobutyric acid (GABA) are associated with

depression. There is also evidence that some pharmaceutical drugs which mimic the action of GABA have potent mood-stabilizing and



antidepressant properties. Now a team of researchers from the Yale University School of Medicine reports that GABA levels in the brains of depressed people are much lower than the levels found in healthy individuals.

The study involved 14 depressed patients meeting DSM-IV criteria (eight men and six women) and 18 healthy controls (eleven men and seven women) none of whom were taking medications. The researchers measured the level of GABA in the occipital cortex region of the brain using a non-invasive proton magnetic resonance spectroscopy technique. They found that the mean GABA level in the brain of the

depressed patients was less than half of that found in the healthy controls (0.71 mmol/kg vs. 1.48 mmol/kg). They also noted that women generally had higher GABA levels than men and that the levels tended to decline with age. The researchers urge further studies to confirm their findings and evaluate their possible therapeutic significance.

*Sanacora, Gerard, et al. Reduced cortical gamma-aminobutyric acid levels in depressed patients determined by proton magnetic resonance spectroscopy. Archives of General Psychiatry, Vol. 56, November 1999, pp. 1043-47*

## Painless blood glucose measurements

REDWOOD CITY, CALIFORNIA. Self-monitoring of blood glucose levels is a critical part of the effective management of diabetes. Current techniques involve the collection of small samples of blood (from a pin prick on the finger) one or more times a day. The samples are analyzed with a portable blood glucose analyzer and the results used to guide the administration of insulin or oral hypoglycemic agents. Recent research has shown that more frequent glucose measurements lead to better control and decrease long-term complications. In view of the fact that current methods are invasive, time-consuming, and somewhat painful most diabetics only perform the measurement one to four times per day. It would clearly be ideal if measurements could be performed automatically and without pain several times an hour.

Researchers from the University of Colorado and Cygnus Inc. now report the results of a major study designed to investigate the accuracy and reliability of automated, painless glucose measurements using the GlucoWatch biographer developed by Cygnus. The study involved 92 diabetics (type 1 and 2 requiring insulin) over the age of 18 years (37 men and 55 women). Each participant was fitted with one (29 participants) or two (63 participants)

GlucoWatch biographers and wore them on the arm throughout the 15-hour test period. During this period they also performed two fingerprick measurements of blood glucose every hour. The GlucoWatch is a small, non-invasive instrument (the size of a wristwatch) which measures the level of glucose excreted from the skin following the application of a very small electric current.

Comparison of the glucose values obtained by the two methods showed excellent correlation with the GlucoWatch values closely tracking the standard fingerprick values with a time lag of about 18 minutes. The researchers noted a mild skin irritation after the removal of the GlucoWatch, but suggest that this problem can be overcome by alternating the position of the device. They conclude that the GlucoWatch provides reliable results which can materially improve the management of diabetes. The device produces glucose readings three times per hour and also has a built-in alarm which warns of hypoglycemic episodes. NOTE: This research project was funded by Cygnus Inc. the manufacturer of the GlucoWatch biographer.

*Tamada, Janet A., et al. Noninvasive glucose monitoring. Journal of the American Medical Association, Vol. 282, November 17, 1999, pp. 1839-44*

## Exercise combats effects of aging

SAN DIEGO, CALIFORNIA. It is generally accepted that aging brings with it a loss of

aerobic capacity and a related poorer quality of life, a reduced chance of surviving emergencies,

and a greater risk for many diseases. An intriguing question is "Can regular aerobic exercise counteract this decline in aerobic capacity?"

Researchers at the San Diego State University now provide at least a partial answer to this question. In 1964 they enrolled 15 randomly chosen men aged 33 to 56 years in a study which was to last for 33 years. The men were all active joggers or swimmers at the time of enrollment and continued their aerobic activities throughout the study. Their specific activities changed somewhat over the years and basically consisted of walking, swimming, cycling or jogging 3-4 times per week for an hour or more at 77-84 per cent of heart rate reserve. All participants survived for at least 25 years after enrollment and 11 of them were still alive at the experiment's conclusion 33 years later.

Participants underwent thorough clinical evaluations nine times during the study. Very little change was observed in heart rate, blood pressure, and body composition. Oxygen uptake (a measurement of aerobic fitness) declined by about six per cent per decade as compared to the 10 per cent expected in the general population. Maximum heart rate fell by about one beat per year which again is well below the expected drop. Of particular interest is the fact that none of the men developed hypertension. This contrasts favourably with the 60 per cent incidence of hypertension in the general population over 65 years of age in the United States.

The researchers conclude that adherence to a long-term aerobic training program reduces the effect of aging on cardiovascular function.

*Kasch, Fred W., et al. Ageing of the cardiovascular system during 33 years of aerobic exercise. **Age and Ageing**, Vol. 28, October 1999, pp. 531-36*

## Simple measures to avoid a heart attack

NEDLANDS, WESTERN AUSTRALIA. Although deaths due to heart disease have declined substantially in Australia during the last 30 years they still account for over 40 per cent of all deaths. It is a well-established fact that many lifestyle factors such as lack of exercise and smoking contribute to heart disease risk. Researchers at the University of Western Australia have just completed a study to pinpoint which modifiable lifestyle factors have the greatest potential to prevent heart attacks.

The study involved 336 men (aged 27 to 64 years) who had suffered a first heart attack during 1992 or 1993 and 735 age-matched controls who had no history of heart attacks. All participants completed questionnaires concerning their diet and lifestyle; the heart attack group provided data relevant to the time before their attack while the control group provided current data. Analysis showed a clear protective effect of exercise and avoidance of

salt and meat. Participants in non-vigorous exercise lowered their attack risk by 50 per cent and avoidance of adding extra salt to meals carried a risk reduction of 40 per cent. Participants who ate meat three to six times a week had a three times higher risk of suffering a heart attack than did men who ate meat less than once a week. Moderate alcohol consumption was found to be protective while smoking doubled the risk of having a heart attack. Being overweight, having high blood pressure or cholesterol levels, or being treated for diabetes were also potent risk factors.

The researchers conclude that simple lifestyle changes can materially affect the risk of suffering a first heart attack.

*Spencer, Carole A., et al. Do simple prudent health behaviours protect men from myocardial infarction? **International Journal of Epidemiology**, Vol. 28, October 1999, pp. 846-52*

**Correction:**

The abstract **Egg yolks - A good source of lutein** in the December 1999 issue contained an error.

The sentence "Diet 1 contained 20 per cent of energy as beef tallow; diet 2 contained 20 per cent as corn oil; diet 3 was diet 1 with 300 mg/day (1.3 egg yolks) of cooked egg yolk added; diet 4 was diet 2 with 300 mg/day of cooked egg yolk added."

should have read:

"Diet 1 contained 20 per cent of energy as beef tallow; diet 2 contained 20 per cent as corn oil; diet 3 was diet 1 with the daily addition of 1.3 cooked egg yolks providing 300 mg/day of cholesterol; diet 4 was diet 2 with 1.3 cooked egg yolks added per day."

## NEWSBRIEFS

**Antidepressants and marijuana don't mix.** A Canadian family doctor reports that an interaction between tricyclic antidepressants and marijuana can produce a life-threatening arrhythmia. His patient, a 17-year-old boy, had been prescribed 25 mg of amitriptyline to help him sleep and alleviate some of his depression. A week after filling the prescription the boy showed up in the emergency ward with a supraventricular tachycardia rate of 300 beats per minute. He had been smoking marijuana the evening and night before. The doctor speculates that the amitriptyline and marijuana interacted to produce the arrhythmia and cautions against prescribing tricyclic antidepressants to adolescents who have a potential for drug abuse.

**British Columbia approves Traditional Chinese Medicine.** The British Columbia government has given formal approval to the establishment of a new College of Traditional Chinese Medicine and Acupuncture Practitioners of BC. The new college will be a self-regulating entity and its members recognized health professionals in BC. The BC College of Physicians and Surgeons welcomes the move towards establishing professional standards for alternative practitioners. Other medical associations call the decision a dangerous precedent which could impact on conventional physicians monopoly on providing "officially recognized" health care.

**European Union contemplates salt labeling.** The European Union is coming under increasing pressure to force food manufacturers to provide

clear labels stating how much salt their products contain. Salt intake is particularly high in the United Kingdom where adults consume on average 10 grams per day, 80 per cent of it from processed food. Dr. Graham McGregor of St. George's Hospital in London is convinced that excessive salt intake is the main cause of high blood pressure and that thousands of lives could be saved if levels in processed foods were reduced. He argues that the food industry "uses salt to give flavour to tasteless ingredients, to bulk up products cheaply, and to sell more drinks to people who eat salty snacks." Mandatory salt labeling is already in force in Australia and the United States and apparently has induced some food processors to cut their salt levels.

**Farmers in the United States sue Monsanto.** A group of American farmers has launched a class action suit against Monsanto and other biotechnology companies. The suit alleges that the companies conspired to take over the seed trade and pushed biotech crops to market without adequate environmental and health testing. Specifically, the suit claims that Monsanto, using its biotechnology patents, coordinated with other biotech companies such as DuPont to fix prices and force farmers into using genetically engineered seed.

INTERNATIONAL HEALTH NEWS is published monthly by:  
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