

# Nutrition & Mental Health



SPRING 2003

THE QUARTERLY NEWSLETTER OF THE CANADIAN SCHIZOPHRENIA FOUNDATION

## THE CSF RECEIVES \$200,000 FROM THE HILTON FAMILY FOUNDATION

The largest single donation in the history of the CSF has been made by the Hilton Family Foundation, a visionary charitable organization based in Florida and dedicated to improving healthcare through complementary medicine. Charles and Lela Hilton and daughter, Julie, became aware of the work of Abram Hoffer and the CSF in 2001. After months of correspondence, the Hiltons travelled to meet with Dr. Hoffer in Victoria, B.C. then later attended the 2002 Nutritional Medicine Today Conference in Vancouver. They were so impressed with our work and with the pioneering spirit of Dr. Hoffer that they decided to provide us with the substantial sum of US \$200,000 towards establishing the Abram Hoffer Endowment Fund. Our goal is to raise \$2,000,000; the generosity of the Hilton family has brought this goal within reach. Great is our gratitude!

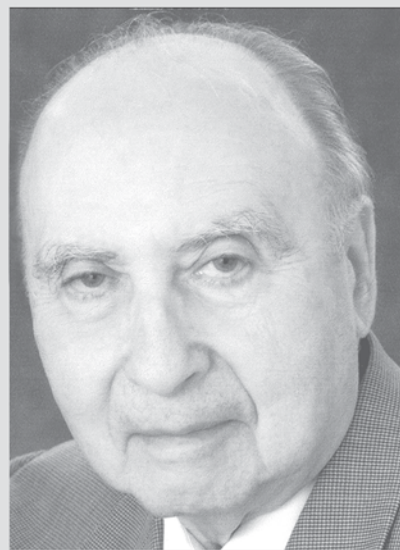
This year we celebrate the 35th anniversary of the Canadian Schizophrenia Foundation. Thirty-five may not seem like a significant number; it is, after all, only ten years past a quarter century, and still some distance from a half century. Yet for us it is a very important milestone; 2003 marks the survival, achievement and assured future of an organization that has played a significant role in the mental health of people in North America and around the world.

### Early Years

Founded in Toronto in 1968 by a few individuals who were committed to improving the prevention and treatment of schizophrenia and related disorders, and led by the pioneering psychiatrist, Abram Hoffer, the CSF strove to bring professional and public attention to the importance of nutritional balance in optimizing mental health.

Amidst the new and exciting development and availability of antipsy-

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FOUNDATION



35 YEARS OF  
HOPE AND HEALING

chotic neuroleptic drugs at that time, and before the “health food” wave had acquired momentum, it was a difficult task to direct psychiatry to the challenging concept of orthomolecular medicine. Indeed, the term “orthomolecular” was only a few months old, coined by two-time Nobel laureate, Linus Pauling, in his seminal paper in *Science*, to describe the use of the “right molecules,” substances naturally occurring in the body, to achieve biochemical balance in the brain. For psychiatrists it was far easier and more dramatic to administer a drug that would often quickly effect a behavioural change than to assess and optimize nutritional status and possible allergies of an individual, especially when these were not considered to be factors relevant to mental health.

Membership in the CSF grew quickly in the 1970s, as families and other people close to those with schizophrenia recognized that mental well-being was much improved as nutritional

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Managing Editor: Steven Carter

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### *(Editorial cont'd)*

imbalances were corrected, often with the help of what were soon referred to as "megadoses" of vitamins, minerals and other essential nutrients.

#### **The CSF Challenges the APA**

While "megadose" was attractive to the public imagination, suggesting more was better, the idea that vitamins taken at many times the newly established recommended daily allowances could be therapeutic was not easily swallowed by the psychiatric establishment. Its reaction led to the American Psychiatric Association's task force report, "Megavitamins and Orthomolecular Therapy in Psychiatry", published in 1973. This biased and flawed report had "a pernicious effect in dampening interest in orthomolecular psychiatry ... condemning hundreds of thousands of patients to a lifetime of tranquillized chronicity." The CSF published a 120-page reply to the APA report in 1976, which included in its detailed rebuttal Linus Pauling's criticism, "Its arguments are in part faulty and its conclusions are unjustified," and John Hoffer's comment, "It is a mistake to use it as a reference source in evaluating megavitamin therapy because it is a mine of misinformation." Despite establishment resistance, people with mental illness continued to recover with the help of orthomolecular treatment.

#### **The Journal and ISOM**

*The Journal of Orthomolecular Psychiatry*, first published by the CSF in 1972 and changed to *The Journal of Orthomolecular Medicine* in 1986, has readers in over 35 countries. This unique journal was instrumental in fostering growth in this field, and in 1994 the International Society of Orthomolecular Medicine was formed to bring together the dozen groups active worldwide. Today there are 18 countries with orthomolecular societies, and more in development.

#### **NMT Conference**

Now in its 32nd year, the Nutritional Medicine Today Conference, which began life as the Annual CSF

meeting, has provided a forum for over 200 of the world's leading orthomolecular physicians and researchers to educate thousands of health professional and lay delegates. Leading lights over the years include Linus Pauling, Carl Pfeiffer, Humphry, Osmond, Emanuel Cheraskin, David Horrobin, Allan Cott, William Crook, Orian Truss, Robert Atkins, Barbara Reed Stitt, Donald Rudin, Bernie Rimland, Lendon Smith, Robert Cathcart, Richard Kunin, Michael Lesser, Doris Rapp, Alexander Schauss, Melvyn Werbach, Jonathan Wright, Jeffrey Bland, Harris Coulter, Denham Harman, Mildred Seelig, John Smythies, Hugh Riordan and, of course, the tireless Abram Hoffer, who has anchored the conference for every one of its 32 years.

#### **Vital Public information**

The CSF established its first head office in Regina, where it remained

until relocating to Vancouver in 1986. The CSF moved to Toronto in 1992, where it has been operating since. From this small office thousands of information packages and physician referrals are sent annually. The CSF has sponsored dozens of local and regional public meetings and assisted many groups in distributing information. Our website ([www.orthomed.org](http://www.orthomed.org)) attracts thousands of visitors annually and is updated regularly.

#### **Today and the Future**

The CSF has members and affiliates worldwide who are dedicated to making orthomolecular treatment available to everyone in need. The CSF has been blessed with sufficient funding to have survived until now and today, with the exceptional vision and generosity of the Hilton Family Foundation's gift, we can be assured of continuing our work well into the future ☐

—Steven Carter

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## IN BRIEF

#### **Fish Consumption and Self-reported Physical and Mental Health Status.**

The aim of this study was to assess whether a self-reported mental health status questionnaire would show an association between fish consumption and mental health. The data was collected in the 1996/97 New Zealand Health Survey and 1997 Nutrition Survey, which were conducted using the same sampling frame. Survey respondents were categorized into those who consumed no fish of any kind and those who consumed some kind of fish, at any frequency. Data were adjusted for other demographic variables and potential confounding nutrients. Data from a nationally representative sample of 4644 New Zealand adults aged 15 years and over showed that fish consumption was significantly associated with higher self-reported mental health status. Differences between the mean scores for fish eaters and those who never eat fish were 8.2 for the Mental Health scale and 7.5 for the Mental Component score. This was the first

cross-sectional survey to offer indirect support for the hypothesis that omega-3 polyunsaturated fatty acids may act as mood stabilizers.

—*NZ Public Health Nutrition; June; 2002; 5/3.*

#### **Effect of Vitamin and Mineral Supplementation on Cognitive Function in Elderly Subjects**

Ninety-six healthy Canadians older than 65 years of age (mean age, 75 years) were randomly assigned to receive, in double-blind fashion, a nutritional supplement containing modest doses of vitamins and trace minerals or a placebo for 12 months. The placebo contained calcium (200 mg) and magnesium (100 mg). Compared with placebo, the supplement produced significant improvements in 6 of 7 tests of memory, abstract thinking, problem-solving ability, and attention ( $p < 0.05$ ). This study showed that supplementation with modest amounts of vitamins and trace minerals can improve cognitive function in healthy elderly individuals. Nutritional status tends to decline with ad-

(In Brief cont'd)

vancing age, because of factors such as poor dentition, economic hardship, greater difficulty shopping for fresh produce, age-related malabsorption, and use of medications that interfere with absorption or utilization of nutrients. In addition to improving mental function, supplementing with a broad-spectrum nutritional formula has been shown to improve immune function and to reduce the incidence of infections in the elderly.

—*Nutrition 2001;17:709-712.*

### Alzheimer's May Be Tied to Lack of Iron

Iron deficiency may play a role in degenerative brain diseases like Alzheimer's. Human brain cells deprived of a key form of iron, called heme, develop damage similar to that in cells with Alzheimer's. Between 4-5 billion people may be iron deficient, according to the World Health Organization, and 30% suffer from anemia, a critical lack of the nutrient in their blood. Heme deficiency can be caused by too little vitamin B<sub>6</sub>, as well as by exposure to aluminum and other toxic metals as well as being frequently associated with aging, menopause, and pregnancy.

In the new study, researchers examined two types of human brain tumor cells, as well as neurons from rats. To produce iron deficiency, they treated the tissue with a compound that significantly suppresses heme synthesis. The result: heme-deficient brain cells had produced less cellular energy. They also made more of an enzyme that generates nitric oxide, a molecule that can cause oxidative stress, and showed anomalies in their balance of iron and zinc. Hani Atamna, a scientist at Children's Hospital, Oakland Research Institute and a co-author of the study, says many of these changes mimic what happens to the brain cells of people with Alzheimer's disease. They are now comparing tissue samples from people with Alzheimer's to those without dementia, to further explore potential harmful effects involving iron.

—*HealthScout News; November, 2002.*

## ORTHOMOLECULAR FRONTIERS

### Homocysteine: A Danger to Body and Mind

In the perennial battle of opinion concerning the cause of cardiovascular disease, cholesterol has recently lost ground to homocysteine, an amino acid strongly implicated in heart disease, yet easily controlled with nutrition. Recent studies show that apart from the physical health consequences, elevated homocysteine levels are implicated in dementia and Alzheimer's disease. Furthermore, evidence also suggests that correcting these deficiencies in the elderly could significantly reduce the scope of memory loss—a problem affecting over 750,000 North Americans.

Homocysteine occurs naturally in the body, and is formed by the breakdown of the amino acid methionine, which is found in protein-rich foods. But in certain individuals with inherited metabolic idiosyncrasies, homocysteine levels can rise to physiologically toxic levels and cause inflammation of blood vessels, accelerate atherosclerosis and cause clotting, all hallmarks of cardiovascular disease. It is in the nervous system, however, that researchers have found further vulnerabilities. High homocysteine can cause biochemical changes that damage blood vessels within the brain and have a direct effect on neurons by blocking synaptic communication necessary for proper cognitive function and memory recall.

Reporting in a recent issue of the *American Journal of Clinical Nutrition*, a group of Scottish and British researchers reported a study of 331 men and women, all of whom were part of the Scottish Mental Surveys of 1932 and 1947. These longitudinal surveys were intelligence tests conducted on schoolchildren at the time.

The new study was based on research involving the original two groups of people from these studies.<sup>1</sup> The researchers tested both the cognitive status of the 1921 and 1936 group at the same time as they took blood samples from all the patients. The samples were tested for concentrations of homocysteine, folic acid and B<sub>12</sub>. The researchers then compared the cognitive scores of each member of the groups with blood levels of all three of the compounds. They discovered that

the older group, born in 1921, had increased levels of homocysteine and lower blood levels of both folic acid and vitamin B<sub>12</sub>, all of which correlated with lower scores on cognitive tests. The subjects who had higher levels of both nutrients in their bloodstream scored higher on four of six cognitive tests. Meanwhile, in the younger, 1936 group, the nutrients had a lesser effect, leading the authors to speculate that members of the older group may have had a greater nutrient deficiency for a longer period which could have been responsible for the additional toxic effects on the brain.

A second study appearing in a recent issue of the journal *Neurology* showed that subjects with elevated levels of homocysteine were more likely to have brain atrophy and vascular disease. Both these physiological disorders are strongly associated with the development of dementia and Alzheimer's disease. Researchers tested the blood homocysteine levels of 36 healthy, elderly people, then used brain scans to measure the amount of brain atrophy, or loss of brain cells and volume. Subjects who had the highest levels of brain atrophy were twice as likely to have high homocysteine levels as those with less atrophy. "This is exciting information, because homocysteine levels can be reduced by taking the vitamins B<sub>6</sub>, B<sub>12</sub> and folic acid," said Dr. James Toole, of Wake Forest University School of Medicine in Winston-Salem, NC. Elevation of homocysteine levels have been observed in 5-7% of the general population.<sup>2</sup>

These findings may serve to map out treatment approaches for the elderly. "It's helping to lay the groundwork for the formal development of nutritional strategies aimed at delaying or even preventing cognitive decline in the elderly," says Dr. Barry Reisberg, a professor of psychiatry at New York University School of Medicine. He adds he has prescribed concentrated nutrient therapy for patients with memory loss for more than a decade, with excellent results so far.

—Greg Schilhab

### References

1. *Acurian*, October 16, 2002,
2. *HealthScoutNews Reporter*, April 25, 2002.

## BOOK REVIEW

### Optimum Nutrition for the Mind

by Patrick Holford  
Judy Piatkus Ltd., 2003  
Hardcover, 383 pages

Patrick Holford has long been Britain's most energetic advocate for nutritional medicine. In 1984, he founded the Institute for Optimum Nutrition (ION), a charitable educational trust to further education and research in nutrition. ION is now the largest U.K. school for nutrition consultants and has trained more than 30,000 people. Holford has written 27 books, including the best-selling *Optimum Nutrition Bible*. His most recent book, *Optimum Nutrition for the Mind* distills his vast experience to give readers a sweeping analysis of nutritional strategies for optimizing mental function.

Backed by modern research and his own meticulously recorded case histories, Holford leads us in a step-by-step process of understanding mental health from two points of view. The book begins with an explanation of the biochemical and structural nature of the brain and how environment influences its function. Few people realize that the dietarily sparse Omega 3 fatty acids comprise 60% of the structure of the brain, and B vitamins, minerals and amino acids (which many of us are deficient in), serve as the substrates and catalysts for the synthesis of a cascade of vital molecules.

Expanding on this view, Holford also characterizes five environmental factors which impair brain function. Brain agers such as oxidants in tobacco and alcohol prematurely destroy the delicate neuronal network of the brain and disrupt functioning. In the midst

of the ubiquitous stress of modern life, the body's fight or flight response releases cortisol, thus perpetuating cycles of hyperglycemia and hypoglycemia. These dysglycemic oscillations in blood sugar, so endemic in modern life, profoundly affect mood and cognition itself.

Environmental toxins are yet another factor in brain impairment, and for which there are abundance of sources. Heavy metal exposure—lead from industrial pollution, cadmium from cigarette smoking, and mercury accumulated in fish has the potential to impair the brain.

Brain allergies, particularly the complex immune response mechanisms to dairy and wheat products are discussed in the last section. Holford explains how endemic allergies are to mental health issues, what tests can be used to discern susceptibility and food elimination and rotation interventions to pinpoint one's individual sensitivities.

The positive side of environmental influences, namely, what

factors enhance mind and mood are given significant discussion. Holford focuses on factors which affect IQ, memory and mood. He notes some of ION's research showing 10-20 point improvements in intelligence scoring due to supplementation with vitamins and minerals crucial to brain enzymatic reactions. Memory can also be affected and improved by supplementation with the molecule such as DMAE and phosphatidylcholine, which support the brain's synthesis of acetylcholine. Also discussed are natural supplements which increase oxygen flow to the brain and affect neurotransmitter synthesis such as ginkgo biloba and vinpocetine.

Mood disorders also respond to optimal nutrition strategies. Holford believes we should first look at the fundamentals in the diet, regulation of blood sugar, and the provision of B<sub>3</sub>,

B<sub>6</sub>, B<sub>12</sub>, zinc and magnesium. Holford tells of the two-fold nature of depression. Feeling bad emotionally is based in the serotonin system, and separate from the apathy and lack of motivation which is adrenaline/noradrenaline based. In each case, particular nutrients are used to correct the underlying abnormality. Other factors optimizing the mind include hormonal balancing, natural relaxants for anxiety, and nutrients to promote deep restful sleep.

Holford devotes a significant portion of the book to understanding mental illness and its major manifestations: depression, bipolar disorder and schizophrenia. He begins with a valuable conceptual framework of mental illness, and the importance of proper diagnosis. The dangers of relying solely on drugs to treat a given disorder are many, from dependencies to unforeseen side effects and multi-drug interactions. In the context of depression, Holford drawing on his relationship with the late Carl Pfeiffer, explains the signature symptomatology of excessive histamine in the brain and what treatment options can address the imbalance. A final part of the book deals with the development of the brain throughout life. Nutrition affects behaviour and learning, from autism and attention deficit disorders of adolescence, to Parkinson's and Alzheimer's disease of later years. Throughout this section, Holford shows that thinking nutritionally can help us maintain a youthful mind and increase our resilience to impairment and aging.

*Optimum Nutrition for the Mind* is a very readable and practical guide to solving mental health problems through nutrition. Holford strikes the right balance of detail for the majority of readers to grasp this immensely complex subject. For a true understanding of nutrition and the mind, we need a working knowledge of biochemistry, environment, specifics of disorders, and treatment options through the range of our life spans. Holford's book is highly recommended as one of the better primers on maintaining optimal mental health. □

—Greg Schilhab

