Nutrition & Mental Health

The Quarterly Newsletter of the International Schizophrenia Foundation

40 YEARS OF HOPE ISF

Winter 2007

DR. ABRAM HOFFER WINS THE INAUGURAL DR. ROGERS PRIZE

Readers of *Nutrition &Mental Health* will be pleased to hear that Abram Hoffer has won the inaugural Dr. Rogers Prize for Excellence in Complementary and Alternative Medicine for his decades of work in establishing orthomolecular medicine.

The $250,000 award, funded by the philanthropic Hecht Foundation and presented in Vancouver on November 1, is the first of its kind in Canada, and the largest in North America. The prize is named for Dr. Roger Rogers, a UBC Clinical Associate Professor emeritus who is also a recognized Canadian leader in complementary and alternative medicine. Dr. Rogers began offering alternative treatments in Vancouver in the mid-1970s and later co-founded the Centre for Integrated Healing, now known as Inspire Health, to help cancer patients who have had limited or no success with traditional medical treatments. The award was shared with co-winner Dr. Alastair Cunningham of Toronto, creator of "The Healing Journey," a non-profit program that helps cancer patients use relaxation and mental imagery to cope with the disease. Drs. Hoffer and Cunningham were selected from 57 nominees, after a nationwide call earlier this year. During lengthy deliberations, the judges attempted to arrive at a consensus for a single winner but judged that the contributions of these two recipients were of equal importance in terms of their impact on complementary and alternative medicine (CAM) in Canada, and decided that the Prize should be shared.

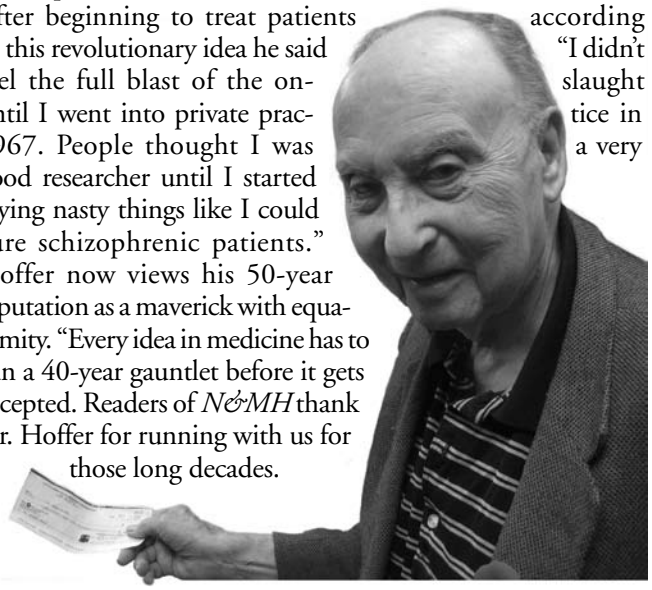
Dr. Abram Hoffer with Fran Fuller and Steven Carter

Dr. Hoffer thanked those who stood with him over the years. He wrote: "Thank you so much for your messages which came flooding in yesterday and today. It does feel good to be recognized after nearly five decades of blood, sweat and toil and even more because this will draw attention to the important work we are all doing and will save many more patients from the real ravages of modern vertical medicine."

Angela Webster, the executive director of the Hecht Foundation, called Hoffer a true pioneer. "His idea that nutrition is the basis for health and also a very good place to look to find the causes of disease is now mainstream," she said in an interview. "When he was first saying that in the '60s and '70s, it was heretical."

Dr. Hoffer was inspired to explore nutritional medicine while working as research director for Saskatchewan's public health department in 1950. Half the patients in that province's three large hospitals were schizophrenic.

"Going into a mental hospital in 1950 was a life sentence without time off for good behaviour," Hoffer recalled. With his friend, double Nobel Prize laureate Linus Pauling, he came up with what is now known as orthomolecular medicine. After beginning to treat patients according to this revolutionary idea he said "I didn't feel the full blast of the onslaught until I went into private practice in 1967. People thought I was a very good researcher until I started saying nasty things like I could cure schizophrenic patients." Hoffer now views his 50-year reputation as a maverick with equanimity. "Every idea in medicine has to run a 40-year gauntlet before it gets accepted. Readers of *N&MH* thank Dr. Hoffer for running with us for those long decades.



Nutrition & Mental Health (ISSN 1199-7699) is published quarterly by the International Schizophrenia Foundation, 16 Florence Avenue, Toronto, Ontario, Canada, M2N 1E9. Phone (416) 733 -2117, Fax (416) 733-2352. E-mail centre@orthomed.org

ISF Membership is $35.00 per year which includes a subscription to Nutrition & Mental Health.

It is recommended that treatment of all health problems be undertaken in consultation with a qualified Health Professional.

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ORTHOMOLECULAR FRONTIERS

Beyond Food and Vitamins: Seasonal Affective Disorder and Environment

As we crunch in the snow under the heel of Orion, we enter the period of Seasonal Affective Disorder (SAD). This form of depression comes with the season's fading light and changes in our nutritional status which induce everything from vague feelings of ennui to crushing sadness and despair. SAD's cause is mysterious and frustrating to study because many seemingly unrelated therapies seem to improve it, from light boxes and tanning beds to vitamin D, serotonin and melatonin. A disorder like SAD challenges our one-cause mindset with a true orthomolecular whodunnit where the villain seems to have multiple accomplices, transcending rigid nutritional categories.

Vitamin D: Because vitamin D levels stored in the body begin to drop in the autumn, one wonders if a deficiency of the vitamin itself causes SAD. There is some evidence to suggest so. In one controlled trial in Australia in 1998, researchers found that 400 and 800 IU of vitamin D_3 significantly enhanced mood when given to healthy individuals. These 44 SAD subjects were given the one of the two doses of vitamin D_3 or placebo for five days in winter and experienced an enhanced positive affect and reduced negative affect.[1] In 1999, scientists used a massive 100,000 IU dose of vitamin D in eight patients and compared them to seven who were given only light therapy. The results showed that only the vitamin D patients improved on all three depression scales and that the vitamin D supplements raised levels twice as much as did bright light therapy.[2] So it appears, from these small but intriguing studies, that vitamin D supplementation does provide an antidepresssant effect.

Serotonin: Research also points to the fact that summer sunlight increases brain serotonin levels twice as much as winter sunlight.[3] Studies by Dr. Norman Rosenthal and co-workers at the National Institute of Mental Health seem to implicate serotonin dysfunction in seasonal affective disorder. Dr. Raymond Lam at the University of British Columbia has also shown that the antidepressant effects of light can be reversed by a tryptophan deficient diet. Since tryptophan is the direct precursor of serotonin in the brain, light appears to work its magic by boosting serotonin. Researchers analyzing spinal fluid from 200 normal volunteers found that that higher levels of sunshine were associated with increased serotonin function. As with vitamin D, we can either use light as a catalyst or the supplement itself to increase serotonin and treat SAD. In the latter case, supplementing with 5-HTP, the direct precursor to serotonin, will boost levels of serotonin and effectively treat depression.

Melatonin: We may also consider melatonin in SAD. As it does with vitamin D and serotonin, light has a relationship to melatonin. Normally released by the pineal gland in the evening, melatonin has an inverse relationship to serotonin. Encroaching darkness signals retinal photoreceptors to stop the production of active, daytime hormones such as serotonin and begin producing melatonin. Morning light reverses the process and serotonin again kick starts our day. But this molecular gating is not always so open or shut. Often, when we're awake and melatonin is in still in our system, (i.e. after less than 8 hours sleep or awaking before dawn) we feel lethargic and moody. Almost everyone with a mood disorder suffers more in the winter because of excess melatonin in their brains. On the other hand, insomnia at night is a common SAD feature and some people supplement with melatonin at night to improve sleep and a "reset" the body's clock so it better produces daytime serotonin.

Putting it Together: We know that vitamin D_3, serotonin and melatonin can be taken as dietary supplements or created by bright light hitting the skin or retina. Whatever their origin, these three molecules have also been shown to improve SAD. The principles of orthomolecular medicine would tell us to begin with the nutritional basics and work up to specific supplements where needed. But in depressive disorders like SAD, perhaps "orthomolecular" is better described as the total environment, which includes the dark/light rhythms moving across our bodies. Indeed, if we include all the things which create the "right molecules" in our physiology, then the orthomolecular total environment goes beyond food, vitamins and light to include exercise (see *N&MH* spring, 2001: *Energy Flux and Mental Health)* and even altered states of consciousness like deep relaxation or meditation. For the the orthomolecular environment of SAD, therapy must begin with light, and we may benefit from a new look at some of the innovations in light therapy research.

New Therapies: For decades researchers assumed that the eye's rod and cone cells mediated melatonin, and so they created white light boxes designed to stimulate rods and cones. In fact, the release of melatonin is triggered by "melanopsin" photoreceptors which actually respond best to a specific bandwidth of 446-477nm blue light. That discovery brings us a second generation of light panels such as Apollo's GoLite which uses tuned blue wavelength light sources to treat SAD. Not only are blue light panels more effective, but compliance is better. Blue panels are just one tenth the intensity of the older full spectrum lights and patients report much less visual discomfort, headaches and nausea. Another light therapy innovation is the so-called "dawn simulator" which also appears to be highly effective against SAD. Dawn simulation was developed in the 1980s at Columbia University after basic research showed how very sensitive circadian rhythms were to the dim, gradually rising dawn signal. Dawn simulators are basically digital alarm clocks which, instead of an alarm, stimulate the gently rising light of sunrise. Like blue light panels, dawn simulation uses a far less intense light than the bright first generation light boxes. Manufacturers like Bio-Brite make well regarded dawn clocks which many SAD sufferers swear by.

Just as our our food supply is denatured and contaminated, so too are nature's light/dark cycles polluted with spurious illumination of modern life. Sufferers of SAD may benefit from examining the total orthomolecular environment and take in the right light to create the right molecules for optimal functioning of mind.

–Greg Schilhab

1. Psychopharmacol, 1998; 135(4): 319-23.
2. J Nutr Health Aging. 1999; 3 (1): 5–7.
3. Lancet, 2002; 360(9348):1840.

IN BRIEF

Omega-3 Fatty Acids Decrease Anxiety in Substance Abusers

There is mounting evidence that low levels of omega 3 fatty acids play a role in some psychiatric disorders. Early exploratory studies using omega 3 fatty acids showed they seem to decrease anxiety in humans. Since it is known that substance abuse is often comorbid with anxiety disorders, researchers wanted to test whether supplementing with omega 3 fatty acids would decrease the anxiety level in these patients. Thirteen patients were given daily capsules containing 3 grams of the omega 3 fatty acids EPA and DHA. Eleven patients received placebo capsules containing vegetable oil. The trial, which lasted 3 months, was randomized and double-blind. Anxiety tests were given at the onset of the trial and once per month during the trial. Six patients in the omega 3 group and 8 placebo group patients were followed for an additional 3 months after treatment stopped and administered the same questionnaire monthly.

The results showed that patients who received omega 3 fatty acids for 3 months showed a progressive decline in anxiety scores. This was not the case for patients who received placebos and a comparison of the 2 groups showed statistical significance. Surprisingly, anxiety scores also remained significantly decreased in the omega 3 group for 3 months after treatment discontinuation and even 6 months later. This preliminary study indicate that omega 3 supplementation could be beneficial in the treatment of anxiety disorders.

– J Clin Psychopharmacol, 26(6): 661-5 2006

Plasma Selenium and Cognitive Decline in the Elderly

Because oxidative stress in the brain is a cause of cognitive impairment, researchers hypothesize that selenium, an antioxidant, may offer some protection. The aim of this study was to examine whether declining selenium levels over time are associated with cognitive decline in a group of French elderly. During 1991-1993, 1,389 subjects (age 60-71 years) were recruited into a 9-year longitudinal study with 6 neuropsychologic follow-ups to test cognitive functions.

After controlling for potential confounding variables, the researchers found that cognitive decline was associated with decreases of plasma selenium over time. Among subjects who had a decrease in their plasma selenium levels, the greater the decrease in plasma selenium, the higher the probability of cognitive decline. Among subjects who had an increase in their plasma selenium levels, cognitive decline was greater in subjects with the smallest selenium increase. There was no association between short-term (2-year) selenium change and cognitive changes. This seems to indicate that if selenium status declines among aging people, it may contribute to declines in their neuropsychologic functions.

–Epidemiology, 2007; 18(1): 52-8.

Homocysteine-Reducing Strategies Improve Symptoms in Chronic Schizophrenic Patients

Elevated homocysteine levels are reported to be a risk factor for several diseases, including Alzheimer's and cerebrovascular disease. Recently, several studies have reported that homocysteine levels are also elevated in many schizophrenic patients. Standard nutritional therapy to lower homocysteine levels use folic acid, and vitamins B_{12} and B_6.

In this randomized, double-blind, placebo-controlled, crossover study, 42 schizophrenic patients with plasma homocysteine levels >15 micromol/L were treated with folic acid, B_{12}, and B_6 for 3 months and placebo for 3 months. Testing at the end of the study showed that homocysteine levels declined with vitamin therapy compared with placebo in all patients except for one noncompliant subject. Clinical symptoms of schizophrenia as measured by the Positive and Negative Syndrome Scale also declined significantly with active treatment compared with placebo. Neuropsychological test results overall, and Wisconsin Card Sort test results in particular, were significantly better after vitamin treatment than after placebo. The researcher's surprise findings in this subgroup of schizophrenic patients with hyperhomocysteinemia may hold promise for other schizophrenic patients with normal homocysteine levels.

–Biol Psychiatry, 2006; 60(3): 265-9.

Effects of Dietary Supplements on Depressive Symptoms in Older Patients

To study whether nutritional support could influence older patient's depressive symptoms and cognitive function, researchers randomly assigned 225 hospitalized, acutely ill older patients to receive either normal hospital diet plus 400 mL oral nutritional supplements (106 subjects) or normal hospital diet plus a placebo (119 subjects) daily for 6 weeks. The supplement provided 100% of the reference nutrient intakes of vitamins and minerals for a healthy old person. Subjects were tested at 6 weeks and 6 months for changes in nutritional status, depressive symptoms and cognitive state.

Subjects in the supplement group had a significant increase in red-cell folate and plasma vitamin B_{12} concentrations, in contrast to a decrease seen in the placebo group. There were significant differences in depression scores in the supplement group compared with the placebo group at 6 months but no evidence of a difference in cognitive function scores at 6 months. It appears from this study that oral nutritional supplementation of hospitalized, acutely ill older patients results in a statistically significant benefit on depressive symptoms.

–Clin Nutr, 2007; Oct 26(5): 545-51.

Vitamin B_{12} and Folate Serum Leels in Newly Admitted Psychiatric Patients

This study compared vitamin B_{12} and folate levels in newly admitted psychiatric patients to mentally healthy controls and assessed their correlation with various psychiatric conditions. Of the 224 newly admitted patients , 30% of patients had low folate values compared to 2.5% in the control group. The low-folate patients also had more depression symptoms. The results of this study suggest that folate levels be assessed in patients admitted to psychiatric wards, especially in those with depression. Further study is needed to evaluate the role of folate and cobalamin in psychiatric illness.

–Clin Nutr. 2006; Feb 25(1): 60-7.

BOOK REVIEW

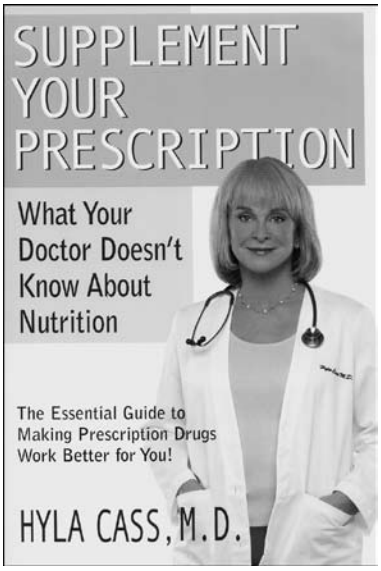
Supplement Your Prescription
by Hyla Cass, MD
2007, Basic Health Press
Laguna Beach, CA

Dr. Cass' new book *Supplement Your Prescription* covers a vital but under-represented topic–integrating orthomolecular medicine with standard drug medicine. The reasons are twofold. Not only are people often "stuck" with lifetime prescriptions but often their own doctors have no means to use orthomolecular medicine to reduce or replace drugs for the long term.

In the first two chapters of her book, Dr. Cass explains how many of the common drugs we take actually worsen our health by depleting the health sustaining nutrients in our diet. Drugs affect nutrition by impairing absorption, increasing urination and using up nutrients by increasing metabolic activity and blocking various enzymes.

Chapter 2 describes the various macronutrients and micronutrients, the essentials of good versus bad fatty acids and how oxygen and antioxidants balance each other to create the metabolic conditions of good health. Dr. Cass then shows how poor diet, environmental toxins, and generally poor lifestyle choices can create subclinical nutritional deficiencies which sets the stage for later degenerative diseases.

Chapters 3 through 7 go into specifics of using nutrition with drugs to address the major conditions such as diabetes, cardiovascular disease, high cholesterol, acid reflux, heartburn, arthritis, digestive disorders and depression. Dr. Cass begins each chapter with a compelling case history from her practice which illustrates how some patients taking prescription medications for pre-existing conditions also experience dangerous side effects which add even more problems to their already poor health. Dr. Cass then begins to describe, in simple language, the causes and main features of each condition and which drugs will most likely be prescribed for it. The basic method of action of the drug is described, along with its most common side effects. Next in each chapter is a list of nutrients that drugs will deplete and the supplements that are essential to counteract the depletion which may affect one's overall nutrient balance. Dr. Cass then discusses the other choices you can make to enhance your biochemical balance.



In Chapter 8, "Less Commonly Used Prescriptions," one gets important information about depletions related to less commonly used medicines, including drugs for obesity, epilepsy, AIDS, contraception, menopausal symptoms, schizophrenia/bipolar disorder, gout, and cancer.

The final chapter covers polypharmacy, a trend in which people find themselves saddled with multiple drug prescriptions which may cause serious health concerns (See *NEMH Autumn 2007* editorial) and for which there is little reliable evidence of efficacy. There is good advice here on managing multiple medications and making your doctor, nutritionist and pharmacist work better for you.

Dr. Cass has written a long-overdue book that provides a bridge for patients to go from their over-drugged lethargy and pains to a natural and thriving state of health. As a concise compendium of how the most common drugs deplete nutrients and how we can counter this, *Supplement Your Prescription* is a unique book, making it more than worth its modest price.

–Greg Schilhab

"More lithium."