Nutrition & Mental Health

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EDITORIAL

A Doorway in Preventive Mental Health

Most of us come to orthomolecular medicine through personal experience. We may have suffered with some physical malady for which years of orthodox therapy offered no hope, then found miraculous relief through natural medicine. Often, this deliverance spurs our interest to use orthomolecular medicine beyond acute treatment, to optimization of health and preventive insurance against future disease. How many of us imagine that orthomolecular treatments for mental illness can also lead us to integrate long-term preventive programs as well?

One possible reason for the slow evolution of the mental health prevention idea is the lack of long-term preventive studies in adults. Recently, however, a few pediatric studies have raised the intriguing possibility that the environment parents provide for their children can decrease the chance of mental illness later in life.

I recall Dr. David Horrobin, speaking at our *Nutritional Medicine Today* conferences, presenting some interesting case studies of premature infants who were fed with formula enriched with omega 3 fatty acids, and who were able, solely by nutritional means, to accelerate neural growth and achieve normal brain development at this first critical stage of life.

Now a new study, published in the current issue of the *American Journal of Psychiatry*, found that children aged three to five years old who took part in an "enrichment" program, including healthy diet, exercise and preschool education, were less likely to develop personality disorders and antisocial behaviour in their late teens, and were also less likely to show criminal behaviour at age 23, than control subjects. In the study, among the first to look at ways of preventing psychotic disorders, 83 three-year-olds from the island of Mauritius were fed hot meals, given two-and-a-half hours of daily exercise and treated to intense cognitive stimulation over a two-year period in a pre-school setting. They were then compared to 355 children who received no special treatment. The enriched group at 17 years of age had 31.9% reduction in schizotypal personality, a precursor to schizophrenia. Those who received the intervention also had a 27.9% reduction in antisocial behaviour problems at age 17, and the crime rate was cut by 35% at age 23. When the study was launched, the two sets of children did not differ in their nutritional status. The children in the control group were fed a traditional Mauritian diet, high in starches, including mostly bread and rice. The enriched group was fed fish, chicken or mutton and salad for lunch. They were given milk breaks and morning fruit juices.

This suggests that proper nutrition, exercise and cognitive stimulation in preschool very likely will lead to better mental health in adulthood.

Preventive care, we've all learned, means introducing the good things as well as avoiding the bad in the total environment of the person. Are there analogous things to avoid in infancy which predict the quality of later mental health? We know of one recent and controversial example–television.

A study from the *American Academy of Pediatrics* shows that watching TV or videos as a toddler may lead to Attention Deficit Hyperactivity Disorder (ADHD) in later life. Apparently, television exposure in children ages one to three is associated with attention problems later in life.

Using regression analysis of 2,000 children, the researchers were able to predict that each hour of television watched per day increased a child's risk of attention problems such as ADHD by almost 10% by age seven.

TV watching unnaturally "rewires" an infant's brain, says Dr. D. Christakis, the lead researcher and director of the study. "In contrast to the way real life unfolds and is experienced by young children, the pace of TV is greatly sped up." The quick scene shifts of video images become "normal," to a baby "when in fact, it's decidedly not normal or natural." Exposing a baby's developing brain to videos may overstimulate it, causing permanent changes in developing neu-

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

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ral pathways. Jane Healy, a psychologist and child brain expert, also suggested there was evidence that "the insistent noise of television in the home interferes with the development of inner speech by which a child learns to think through problems and plans and restrain impulsive responding." Even a child playing quietly at a game of blocks has the neural patterning that comes from moving, stacking and grasping. The brain develops in completely unique ways between birth and three years. As a "video baby" sits mesmerized, however, neural paths are not being created. The doorway of this crucial brain development stage begins to shut by age three.

Twenty-six percent of American children younger than age two have TV in their bedrooms - often watched from the crib, and 36% of families leave the TV on almost all of the time, even when no one is watching, according to one study. ADHD increased with the introduction of children's television in the 1950s and then spiked in the mid 1980s when VCRs were introduced into the home. Based on these findings, lead investigator Dr. Carolyn McCarty and her colleagues said that "These results held when controlling for other factors that might explain this association, such as the amount of cognitive stimulation in the home."

The findings further underscore the American Academy of Pediatrics' audacious recommendation that parents not allow their children younger than two to watch television. Instead, the AAP advises that parents help their children develop media literacy skills to question, analyze, and evaluate television messages, and take an active role in their children's television viewing.

The great contribution of orthomolecular medicine is the idea that the determinism of the genetic component of health and disease is only half the story. We now are beginning to realize that the three aspects of prevention, treatment and optimization apply to mind as well as body. As research continues to illuminate the crucial doorway of brain development in the first few years of life, we will learn more about how a healthy orthomolecular environment can prevent mental illness.

–G. Schilhab

IN BRIEF

Examination of Magnesium Homeostasis in Children with ADHD

In this study, researchers followed, 51 children, aged 6 to 11, with attention deficit hyperactive disorder (ADHD). Special biochemical tests were made and the magnesium levels were found to be moderately decreased in plasma and red cells. The Magnesium enzyme activity was also reduced. The addition of a magnesium-B_6 supplement, when used in the complex therapy of ADHD, normalizes magnesium homeostasis and enhances attention, psychic stability and reduced anxiety. The method of determining magnesium in erythrocytes and in blood plasma can be used to detect the deficit of the microelement in patients and to monitor the efficiency of therapy.

–Klin Lab Diagn, (5): 17-9, 2005

Relationship of Homocysteine, Folic acid and Vitamin B_{12} to Depression

Case control studies have supported a relationship between low folic acid and vitamin B_{12} and high homocysteine levels as possible predictors of depression. The present researchers studied a random subsample of 412 persons aged 60-64 years from a larger community sample undergoing psychiatric and physical assessments. Subjects were assessed using a questionnaire for depression and severity of depressive symptoms. Blood measures included serum folic acid, vitamin B_{12}, homocysteine and creatinine levels, and total antioxidant capacity. MRI scans were quantified for brain atrophy. The results showed that low levels of homocysteine were associated with fewer depressive symptoms and low levels of folic acid were associated with increased depressive symptoms.Vitamin B_{12} levels did not have a significant association with depressive symptoms. The study provided another line of evidence that low folic acid and high homocysteine, but not low vitamin B_{12} levels, are correlates of depressive symptoms in community-dwelling middle-aged individuals. The effects of folic acid and homocysteine are overlapping but distinct.

–Psychol Med, 35(4): 529-38 2005

Niacin May Reduce Risk of Alzheimer's Disease

Elderly adults who consume low amounts of niacin may be at greater risk of developing Alzheimer's disease, according to research presented at the Annual Meeting of the Gerontological Society of America. Researchers from the Rush Institute for Healthy Aging in Chicago conducted a study of 815 healthy adults age 65 and older living in a community setting. The participants filled out a food frequency questionnaire before the start of the study.

Consumption of niacin (vitamin B_3) had a positive effect in preventing the development of Alzheimer's disease, according to the researchers. Participants in the top fifth of niacin intake (average intake of 22.4 mg) had 79 percent less risk of Alzheimer's disease than those in the bottom fifth (average intake of 12.6 mg). A protective effect was also seen with supplements containing niacin.

–2005 Annual Scientific Meeting of the GSA

Iron Deficiency in Children with Attention-Deficit/Hyperactivity Disorder

New research has suggested that iron deficiency causes abnormal dopamine neurotransmission and may contribute to the physiopathology of attention-deficit hyperactivity disorder (ADHD). To evaluate iron deficiency in children with ADHD, researchers conducted a controlled group comparison study in the European Pediatric Hospital, in Paris.

Fifty-three children with ADHD aged 4 to 14 years were compared to 27 controls. The main outcome measures were serum ferritin levels evaluating iron stores and Conners' Parent Rating Scale scores measuring severity of ADHD symptoms have been obtained.

The results indicated that the mean serum ferritin levels were lower in the children with ADHD (23 ng/mL) than in the controls (44 ng/mL. Serum ferritin levels were also abnormal (<30 ng/mL) in 84% of children with ADHD and 18% of controls. In addition, low serum ferritin levels were correlated with more severe general ADHD symptoms measured with tests. These results suggest that low iron stores contribute to ADHD and that ADHD children may benefit from iron supplementation.

–Arch Pediatr Adolesc Med. 2004;158:1113-5

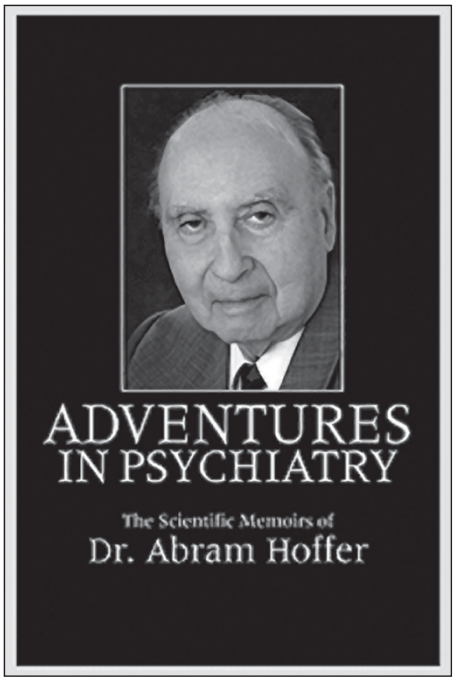
BOOK REVIEW

Adventures in Psychiatry:
The Scientific Memoirs of
Dr. Abram Hoffer
by Abram Hoffer, M.D., Ph.D.,
Kos Publishing Inc
2005, 400 pages, $30.00

Abram Hoffer, Ph.D., M.D., became a pioneering psychiatrist over 50 years ago when he successfully applied the life science of biochemistry to the art of psychiatry. Not content with helping many of his patients recover from schizophrenia, he cooperated with colleagues to research and to develop treatments based on diagnosis, nutritional status and biochemical individuality. As he cared for his patients, Dr. Hoffer discovered a new dimension of restorative care which complemented the standard medications, talks and shock therapies. Over the span of his long and distinguished career, Dr. Hoffer inspired a paradigm shift: leading by example, he learned to resolve patients' episodes, even psychoses, and restore mental health by correcting brain chemistry. This innovative and important work was welcomed by grateful patients but frowned upon by skeptical psychiatrists. After years of sharing his research and reporting positive progress in medical journals, Dr. Hoffer realized that most doctors either ignored or dismissed his ideas–without trying them. Believing that millions of mental patients deserved better quality care, Dr. Hoffer embarked on a campaign to educate the public.

We want to know what made Dr. Hoffer study schizophrenia so carefully. What did he think when his patients heard voices? What motivated him to research, develop and then foster the concept of orthomolecular medicine? What intrigues him so much that, at age 87, he still practices psychiatry and medicine, he still researches and he still writes? Hoffer's scientific memoirs share the fascinating story of his life's work and his medical adventures.

Advances in medicine don't happen overnight. The quality of care usually improves by fine-tuning existing routines. Years of clinical observations and outcome analyses can lead to flashes of insight that reveal possible solutions to age-old health problems. A pioneering doctor trusts his instincts, investigates the probabilities and perseveres until he finds better ways to practice medicine. Anything new takes decades to implement. While trusting patients cooperate, the innovator has to develop and test theories, conduct research studies, perform clinical trials and prove the efficacy of his discoveries, and then write progress reports, submit journal articles and speak at conferences to educate health professionals. This important work requires well-above-average intelligence, inspiration, dedication and determination. Paradigm shifts require even more exceptional capabilities, not to mention serendipity, opportunity and a network of colleagues. As it turned out, Abram Hoffer had the essentials: the necessary smarts, a kind heart, a quick wit, stick-to-itiveness, a supportive family and a knack for making friends, even with patients.



Abram Hoffer attended one-room schools in Saskatchewan, obtained his Ph.D. in biochemistry from the University of Minnesota and completed his medical degree at the University of Toronto. Rather than take quick and easy short cuts in his work as a keen young research psychiatrist in the 1950s, Abram Hoffer wondered what could cause the human brain to hallucinate and what could stabilize brain chemistry. No one told Dr. Hoffer that most doctors believed: "There is no cure for schizophrenia!" The practice guidelines of psychiatry encourage physicians to differentiate the root cause(s) of each patient's symptoms before recommending effective treatment(s). True to the guidelines, Dr. Hoffer and his co-workers researched how to diagnose psychosis and restore brain chemistry by prescribing nutritional supplements – in therapeutic doses – and by improving patients' diets. A surprising number of patients recovered and kept well, as long as they continued their regimens.

What prompted Dr. Hoffer to prescribe supplements? How could nutrients restore mental health? Hoffer's memoirs explain that, according to the Hoffer-Osmond adrenochrome hypothesis, the dysfunctional metabolism of adrenalin can cause psychosis in some people. Vulnerable patients metabolize adrenalin (a healthy brain chemical) to adrenochrome, and then adrenolutin, a hallucinogen. Dr. Hoffer and his colleague, Dr. Humphry Osmond, believed that unbalanced brain chemistry could be restored. By means of the first double-blind clinical trials ever done in psychiatry, they tested two vital amines: divided doses of either niacin or niacinamide (vitamin B_3–a methyl acceptor) with ascorbic acid (vitamin C–an antioxidant). This proved the efficacy of their double-barreled treatment which, for years, has continued to work better than antipsychotic medications alone.

If nutrient-based therapies sound unscientific, remember that Dr. Hoffer earned a Ph.D. in biochemistry before he became a physician. Practicing with medical integrity, Hoffer and his team respected each patient's biochemical individuality by customizing regimens of medical nutrients: vitamins (or vital amines), trace minerals, amino acids, antioxidants, methyl acceptors and sources, energy and enzyme cofactors, essential fatty acids and precursors. Thousands of patients got well enough to resume their educations, continue their careers and realize their destinies.

Conventional doctors scoffed at the idea that mere vitamins could heal patients suffering with schizophrenia, a serious mental illness. However, when world-renowned, Nobel-Prize-winning chemist Linus Pauling, Ph.D., read Hoffer's and Osmond's 1966 book, *How to Live With Schizophrenia*, he realized that "orthomolecular therapy," using vitamins and other essential nutrients as treatments, could help many patients by

"the provision of the optimum molecular concentrations of substances normally present in the human body." Pauling's word "orthomolecular" explains the ortho-care concept of medicine: restore patients to good health by prescribing the right molecules. Linus Pauling came out of retirement, researched the biochemistry and then championed orthomolecular medicine.

Other researchers had tested specific nutrient therapies before and used them to treat nutritional deficiencies and metabolic problems: vitamin C for scurvy (Lind, 1795); foods rich in vitamin B_3 for pellagra (Goldberger, 1914-1928); and insulin for diabetes (Banting and Best, 1920-1925). When these cures were first discovered, uninformed doctors disputed, discounted and denied the healing value of nutrients. Before long, clinicians proved the treatments so safe and so effective that biochemical supplements became the standard of care for these three illnesses which affect millions of patients. Linus Pauling's orthomolecular concept and Dr. Hoffer's success treating schizophrenia and other disorders with orthomolecular regimens have encouraged many open-minded health professionals to cooperate. They discovered restorative treatments for a range of mental and physical illnesses.

However, while following their tradition of nihilism, the majority of psychiatrists dismissed Dr. Hoffer's work and kept their minds closed to the reality that their medications and talk therapies, however well-intentioned and useful, do not restore sick brains to normal. Just as thousands of sailors suffered for decades before the British admiralty provisioned vessels with citrus fruits to prevent scurvy, legions of trusting mental patients have suffered while most psychiatrists have refused to review Dr. Hoffer's orthomolecular research or test his complementary clinical regimens. Unwilling to let skeptics discredit his life's work, Dr. Hoffer continued his research and reported his progress by publishing the case reports of recovered patients in medical books and journals, for over 50 years.

Dr. Hoffer had many clinical adventures as he determined the optimum doses of smart nutrients for his patients and as he encouraged ethical colleagues around the world to apply his methods. In order to share research results and educate caregivers, Dr. Hoffer established the *Journal of Orthomolecular Psychiatry,* later to become the *Journal of Orthomolecular Medicine.* He also wrote many articles, editorials and books including: *Niacin Therapy in Psychiatry* (1962), *The Hallucinogens* (1967); *Orthomolecular Medicine for Physicians* (1989); *Smart Nutrients* (1994); *Vitamin B_3 & Schizophrenia: Discovery, Recovery, Controversy* (1998); *Vitamin C & Cancer; Dr. Hoffer's ABC of Natural Nutrition for Children* (1999); *Orthomolecular Treatment for Schizophrenia* (1999) and *Healing Schizophrenia: Complementary Vitamin and Drug Treatments* (2004).

In addition, Dr. Hoffer helped to establish, direct and maintain the International Schizophrenia Foundation and the International Society of Orthomolecular Medicine. Since 1971, 34 annual *Nutritional Medicine Today* conferences have shared orthomolecular information, medical research, progress reports and success stories with patients, families, caregivers and health professionals from around the world. The Orthomolecular Medicine Hall of Fame recognizes outstanding achievements by medical professionals.

Thousands of grateful patients owe their recoveries and their restored destinies to Dr. Abram Hoffer. Thanks to his original work, vision, integrity and leadership in researching and developing restorative orthomolecular medicine, patients no longer need to suffer for decades with symptoms of schizophrenia, psychosis, depression, bipolar disorder, attention deficit disorder or autism. Hopefully, Dr. Hoffer's story will encourage patients, families and caregivers to ask for restorative care; hopefully the paradigms of medicine will expand until the standards of care routinely offer orthomolecular treatments to patients with mental health problems, even schizophrenia. This won't happen on its own. We all need to help. If you or someone you love has a mental illness, you will enjoy reading *The Scientific Memoirs of Dr. Abram Hoffer* and getting inspired by his wonderful *Adventures in Psychiatry*.

–Review by Robert Sealey, BSc, CA
Author of *Finding Care for Depression, Mental Episodes & Brain Disorders; 90-Day Plan for Finding Quality Care, Depression Survivor's Kit* published by Sear Publications, Toronto
www.searpubl.ca

NEWS

ADHD Drug Misuse Epidemic

Ritalin is most frequently prescribed for treatment of attention deficit hyperactivity disorder (ADHD), which is thought to affect as many as 5% of school-aged kids in the U.S. However, recreational use and abuse of Ritalin is a growing trend that the Drug Enforcement Administration and other watchdog groups have noticed with growing alarm.

The legitmate use of these drugs to treat ADHD in younger adults more than doubled from 2000 to 2004. Spending on the drugs in 20–44 year old adults more than quadrupled. Dr. Alexander Lerman, a New York specialist in child and adolescent psychiatry, says psychiatrists are using increasingly vague definitions of the disorder to conclude that adults with mild symptoms needed medication.

This widespread entry into the adolescent and adult market has led to more experimentation among those who do not have a ADHD but who are looking for a performance "edge." High school and college students and even parents have begun using Ritalin as an aid to concentration, a perfect weight-loss drug or high-energy boost.

The DEA lists Ritalin as one of its "drugs of concern." As with other controlled, prescription substances, Ritalin has "high potential for abuse ... that may lead to severe psychological or physical dependence," said Rogene Waite, a DEA spokesperson. A report from the DEA identifies Ritalin as one of the top 10 controlled drugs most frequently reported stolen. It's sold on the street as "Vitamin R" and "R-Ball." In many cities, Ritalin abuse has moved from the club scene and now is available to younger adolescents in other social situations, many of which are billed as "no alcohol" events.

Those who don't need these drugs, which are generally stimulants, can cause themselves severe psychological problems. Most people forget that stimulants are mood destabilizers and make the user more emotionally unstable, depressed, irritable, less social and obsessive.