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The B3 Story: The Brain

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Introduction

Abram Hoffer estimates that half the homeless in North America are former mental patients. When Hoffer was about 15 he went with his parents to visit a cousin who suffered with mental illness. Everyone was impressed with the entrance to the hospital and the impressive waiting room. The family waited an hour or more before their cousin was brought to the waiting room to meet with them.

The long wait puzzled Hoffer until years later when he made the acquaintance of Dr. Humphrey Osmond at the same hospital. Osmond explained that at that time conditions in the wards were so bad that the public was not allowed to see them. They would first give a patient a bath, take off their dirty and torn clothes, and dress them up in clean clothes before they were allowed to meet with family and friends. The clothes were removed and they were returned to their ragged garb until the next visitors came. Reform did not take place until the wards were opened to the public.

Schizophrenia has long been treated as a hopeless and shameful condition. In the early 1960's Hoffer was asked to care for a young boy with schizophrenia who had shot himself, missing his heart by about one inch. The boy had been institutionalized several times previously. After being released he had visited his family physician. The doctor was called away to another examination room while the boy was being examined. The patient read his chart and learned he had been diagnosed with schizophrenia. Not knowing what the condition was, he looked up the word in the dictionary when he returned home. The dictionary defined schizophrenia as "a hopelessly incurable disease." The boy promptly shot himself. Hoffer expained to the boy that the condition was not hopeless and could be treated. The boy eventually recovered from the disease.

Reference:

Hoffer, Abram, *Healing Schizophrenia*, Toronto, Canada: CCNM Press, 2008, 9-12.

Mental Illness

The use of vitamin B-3 to treat schizophrenia can be traced back to Joseph Goldberger. He set the stage for the fortification of foods with vitamin B-3. About half the people in mental institutions went home when vitamin B-3 or niacin was first added to flour.

Abram Hoffer, M.D., Ph.D., conducted the very first double-blind, placebo-controlled studies in the history of psychiatry. The studies showed that vitamin B-3 could cure schizophrenia. Hoffer wrote, "For schizophrenics, the natural recovery rate is 50 percent. With orthomolecular medicine, the recovery rate is 90 percent. With drugs, it is 10 percent. If you use just drugs, you won't get well."

Abram Hoffer became convinced early in his career that intake of niacin through diet was not optimal. He wrote, "I have been convinced for a long time that if we were to add 100 mg of vitamin B3, in niacinamide form, to our diet, there would be a major decrease in the incidences of schizophrenia, as well as many other diseases, such as hyperactivity and learning and behavioral disorders in children."

Hoffer was not close minded. As time went on he came to realize that other factors in addition to B-3 deficiency could contribute to schizophrenia. Hoffer wrote, "...schizophrenia is not a single disease as we once thought: it is a syndrome with each syndrome caused by different factors."

In addition to niacin deficiency Hoffer found other complicating factors for the disease including brain allergies, vitamin and mineral deficiencies, toxicities and mineral excesses, and conditions caused by drugs such

as hallucinogens.

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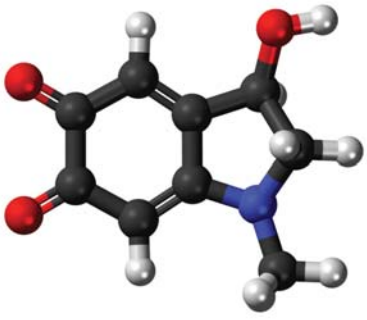
Vitamin Dependency

Understanding Abram Hoffer's concept of vitamin dependency is a natural starting place for comprehension of the role of vitamins in conditions such as schizophrenia.

Two thousand Canadian soldiers were sent to defend Hong Kong at the beginning of World War II. The Japanese attacked and these soldiers were imprisoned for forty-four months. Conditions were so severe that one in four died and the rest were permanently impaired. Nutrition was so poor that survivors had lost one-third of their body weight.

Dr. Abram Hoffer estimated that every year in prison camp had aged these soldiers by five years. They suffered with the diseases of aging at an early age. Their afflictions included arthritis, blindness, heart disease, deterioration of the nervous system, and depression.

In 1960 Hoffer began a project to study the effects of niacin on aging patients. George Porteous, one of these prisoners of war, was director of the institution housing Hoffer's patients. Porteous was one of these Japanese prisoners of war who suffered with chronic anxiety and fear, heat and cold intolerance, and debilitating arthritis.



Adrenochrome

GP asked Hoffer if he could try the niacin so he could explain the flush to the patients. Two weeks after he began the high dose niacin he was free of all his symptoms. He suffered a relapse one time when he forgot to take his niacin.

Hoffer concluded that extreme deprivation of nutrients early in life can result in an acquired dependency for a larger amount of some of these nutrients later in life. These individuals might appear superficially healthy, but they could not enjoy optimal health until supplied with optimal doses of the nutrients they required to make a full recovery from the damage caused by their previous malnourished state.

References:

http://articles.mercola.com/sites/articles/archive/2012/10/21/pellagra-causes-violent-crimes.aspx

Hoffer, Abram, Saul, Andrew, and Foster, Harold, *Niacin: The Real Story,* Laguna Beach, CA.: Basic Health Publications, Inc., 2012, 34-38.

The Adrenochrome Hypothesis

Abram Hoffer developed the adrenochrome hypothesis of schizophrenia in 1952. The theory suggests that many cases of schizophrenia are associated with adrenalin which has oxidized into adrenochrome and adrenolutin. Both of these compounds have halucinogenic properties similar to LSD.

The origin of the adrenochrome hypothesis can be traced back to Smythies and Osmond in 1952. They pointed out a structural similarity between adrenaline and mescaline and their hallucinogenic properties. Dr. John Smythies had experimented with mescaline and noted that the experience resembled that of some schizophrenics.

These researchers also noted psychological changes in an asthmatic who used quantities of adrenaline sprays to control his asthma. "He had colored visions with his eyes shut and feelings of unreality."

Professor Duncan Hutcheon of the University Medical School in Saskatoon suggested adrenochrome, a degradation product of adrenaline was the culprit. Adrenochrome is similar to mescaline and was related to every hallucinogen then known.

Hoffer followed by Humphrey Osmond took adrenochrome. Osmond saw the ceiling change color and a brightly colored pattern of dots formed themselves into fish. Osmond felt like he was under water with a school of fish. When he was given a self-portrait of Van Gogh it came alive.

Osmond experienced similar sensations for an extended period after taking the drug. The sensations appeared about 15 minutes after stress.

Hoffer and Osmond found that inhaled adrenochrome or adrenolutin could trigger schizophrenic symptoms including emotional outbursts, delusions, and suspiciousness.

Both the adrenochrome and adrenolutin derivatives of adrenaline proved highly unstable until Hoffer found a way to stabilize them.

Interest in adrenochrome as a hallucinogen was killed for a time as a result of Dr. Max Rinkel who used adrenochrome semicarbazide (stabilized adrenochrome) to decrease bleeding in surgial patients. He found no hallucinogenic properties. He subsequently admitted that he had made an error in assuming tthat the two compounds had identical properties.

Hoffer and his associates pursued the idea that excessive adrenaline production could lead to too much adrenochrome and its toxic byproducts such as adrenolutin. These toxic byproducts could lead to the physiological and biochemical changes in schizophrenia.

Based on this hypothesis Hoffer

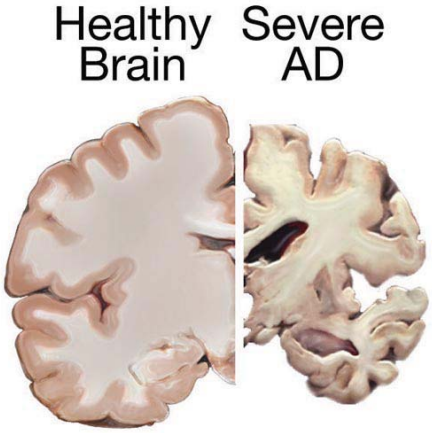
suggested that decreasing the amount of adrenaline would reduce the biochemical inclination toward schizophrenia.

Hoffer gave his schizophrenic patients generous quantities of vitamin C because antioxidants such as vitamins C, E, and glutathione inhibit free radical oxygen activity. Oxidized adrenaline compounds appeared to be the source of the hallucinogens in schizophrenia. Hoffer did not mention carotenoids which have the most potent activity against free radical oxygen.

Hoffer began using niacin for a couple of reasons. Firstly, niacin slows the production of adrenalin reducing its downstream metabolic products as well. Hoffer's main reason for using niacin with schizophrenia was the similarity between the disease and pellagra. He wrote, "Many psychiatrists are no longer familiar with the clinical manifestations of the vitamin deficiency disease known as pellagra, but when the older literature is examined, it is clear that the best model of schizophrenia is pellagra."

Hoffer goes on to say, "It would appear that pellagrins suffer from a vitamin B-3 deficiency disease, while schizophrenics suffer from a vitamin B-3 dependency disease. People with schizophrenia need more vitamin B-3 to restore their biochemical balance than people with pellagra or any 'normal' person."

Recent research by Christine Miller and Jeannette Dulay lends some credence to Hoffer's use of vitamin B3. These researchers found that a high-affinity brain receptor for niacin was decreased in the anterior cingulate cortex of individuals suffering with schizophrenia. The researchers chose to examine this part of the brain because "it is a key region...thought to be disrupted in psychosis."



These researchers also note that schizophrenics have a much more blunted flush when they take niacin than do age-matched controls. The high-affinity niacin receptor is responsible for the flush experienced when an individual takes niacin. Through this mechanism niacin causes the release of tissue hormones which cause dilation of the capillaries in the skin. A study by Craig Hudson and associates found that 12 of 28 schizophrenic patients did not vasodilate in response to supplementation with niacin while all controls responded with a flush.

Finally, Miller and Dulay suggest looking for substances that stimulate these receptors as a potential treatment for schizophrenia. One possible mechanism of stimulating these receptors is the high dose niacin untilized by Hoffer. The authors suggest that Hoffer's work should be "...re-evaluated in the context of the limitation imposed by a deficient receptor..."

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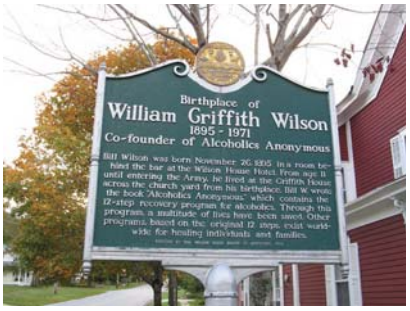

Anxiety

Vitamin B3 may benefit anxiety. Dr. Jonathan Prousky discusses niacin at length in his book *Anxiety*. He points out that both niacin and niacinamide have sedative activity and interact with the benzodiazepine receptor site. Benzodiazepines have powerful sedative, anti-anxiety, muscle relaxant and sleep inducing properties.

Niacin also upregulates production of serotonin. Pharmaceutical medications used to treat depression and anxiety disorders usually focus on increasing serotonin availability.

Niacin also decreases lactic acid levels in the blood. This compound is produced in the muscle when exercizing. Accumulation can cause burning in the muscles during exercise. Studies of individuals prone to panic discorder can be triggered with infusions of sodium lactate. Control subjects did not respond to the infusions with panic attacks. Lactate sensitive individuals respond positively to niacinamide which converts lactic acid to pyruvate which does not trigger anxiety.

Reference:

Prousky, Jonathan, *Anxiety*, Ontario, Canada: CCNM Press, 2006, 39-60.

https://en.wikipedia.org/wiki/Benzodiazepine

Alzheimer's

Vitamin B3 appears to be a nutrient with wide-ranging benefits for brain function. Kim Green and her associates published an article in 2008 showing that niacinamide enhanced memory in mice bred to manifest the characteristics of Alzheimer's disease. The researchers concluded, "In sum-

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mary, the results presented here suggest that nicotinamide has potential as a novel, safe, and inexpensive AD (Alzheimer's Disease) therapy..."

REFERENCE:

Green, Kim N., et al., Nicotinamide restores cognition in Alzheimer's disease transgenic mice via a mechanism involving sirtuin inhibition and selective reduction of Thr231-phosphotau, *The Journal of Neuroscience*, November 5, 2008; 28(45):11500-11510.

ALCOHOLISM

Bill Wilson, co-founder of Alcoholics Anonymous and popularizer of the program, was introduced to niacin by Abram Hoffer in 1960. Bill W began to take 3 grams of the vitamin in divided doses each day. He had suffered with depression and fatigue since giving up alcohol, but the niacin alleviated these symptoms.

Bill W. tested 30 of his friends in AA on niacin. Ten were free of depression, anxiety, and tension within one month. Another ten improved in two months.

Bill W. became a zealous proponent of the use of vitamin B3 and other nutrients as a treatment for addiction. He put together private communications to the medical community informing them of the value of niacin. The medical members of the board of AA International resented Bill's promotion of vitamins.

Wilson died of pneumonia on January 24,1971. Had he lived longer the importance of niacin would have been better known in the alcoholic community. Wilson inaugurated a chain reaction of B-3 use among A.A. members in 1965 "when I recommended the vitamin to a few friends I knew to be continually plagued by depression, tension, anxiety and lack of energy. Those who received marked benefits from B-3 made conscientious efforts to brief fellow sufferers."

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Wilson, Bill, *The Vitamin B-3 Therapy*, February 1968, Bedford Hills, New York, 3.

FINAL THOUGHTS

The B complex in general and vitamin B3 in particular are appropriate for a trial in a wide variety of abnormalities involving mood and behavior. Donald Rudin points out that the omega-3 fatty acids are the substrate for the functioning of the B vitamins including vitamin B3. Rudin found that he could lower the threshold for the niacin flush in schizophrenics dramatically by supplementing them with omega-3 fatty acids.

REFERENCE:

Rudin DO, The Major Psychoses and Neuroses as Omega-3 Essential Fatty Acid Deficiency Syndrome: Substrate Pellagra, Biol Psychiatry, September 1981;16(9):837-850.

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www.imageawareness.com

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