Unraveling the Mystery of Mental Illness:

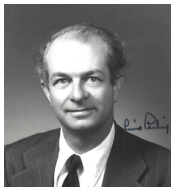
Evidence from Nutrition Research

What causes mental illness? You've heard it before: no one knows. But science is closer than ever before to unraveling this mystery, and nutrition research is giving us vital clues.

Below, you'll find out how these clues match up with the leading theories of mental illness – how nutrients maintain *chemical balance* in the brain, overcome *genetic risks*, and increase *brain growth factor levels*. You'll also learn about clinical nutrition research that offers new hope to those who suffer with mood disorders.

Nutrition and mental illness theories

Chemical imbalance in the brain is the most common explanation for mental disorders. Nutrients are chemicals that the brain requires in order to work correctly. For example, nutrients such as zinc, vitamin B_6 and vitamin B_{12} are needed to make and regulate neurotransmitters, which are essential in sending brain signals. [1,2,3,4] Lack of these nutrients may cause the chemical imbalances of mental illness.



Dr. Linus Pauling

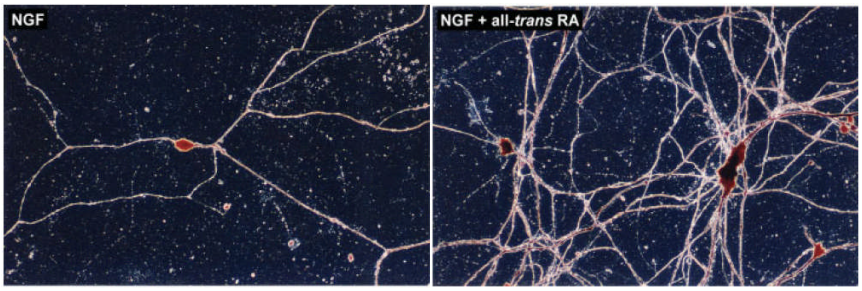
Genetics. Dr. Linus Pauling, winner of two Nobel Prizes, speculated that some people have higher genetic requirements for vitamins and minerals, and that much mental disease may be due to lack of these nutrients in the brain. Pauling stated that "significant improvement in the mental health of many persons might be achieved by the provision of the optimum molecular concentrations of substances normally present in the human body". [5]

Research is showing that Dr. Pauling was right. Dr. Bruce Ames at the University of California, Berkeley, has shown that genetic mutations often result in increased requirements for nutrients, and that higher nutrient intake can overcome many effects of these mutated genes. [6]

Dr. Bruce Ames receiving the national medal of science from President Bill Clinton

Dr. Ames has shown that deficiencies in iron, zinc, folic acid, niacin, and vitamins B_{12}, B_6, C, and E cause mutations in the same way that radiation does, leading to cancer, premature aging, and possibly neuron decay, cognitive dysfunction, mental illnesses, and degenerative diseases like Alzheimer's. [7,8] Half of the U.S. population may be deficient in one or more of these nutrients. [9] For folic acid alone, ten percent are deficient at levels known to cause breaks in human DNA. [10]

Lack of brain growth factors. Growth factors are essential for brain cell branching and survival. They help to keep neurons in the brain connected so the proper signals can be sent. Antidepressants increase brain growth factor levels, [11] but nutrients likely do a better job. [12,13,14,15] Lack of these nutrients, and subsequent lack of brain growth factors, leads to brain cell shrinkage and death. [16,17] These effects may interfere with proper brain signals, leading to symptoms of mental illness.



Nutrients are essential for proper nerve cell branching. This shows neuron branching with nerve growth factor only (left), versus nerve growth factor and vitamin A (right).

Human nutrition research

Poor diet has been associated with mental illness,[18] and people who have poor intestinal absorption of nutrients have a much greater risk of developing a mental illness.[19,20]

In the past, research has used only one vitamin or mineral at a time as a treatment for mood disorders. But results using this approach have been mixed. Why? It's this simple: if the brain needs more than one chemical to restore balance, giving just one will not suffice. Newer research using multiple nutrients is showing encouraging results.[21,22,23,24]

Truehope's involvement

Truehope Nutritional Support Ltd. is a non-profit company that offers education, advocacy, and support to those who suffer from mental illnesses. Research to date using EMPowerplus®, Truehope's 36-ingredient chelated micronutrient supplement, supports Truehope's decade-long observations that nutrition helps people overcome mental illness.[25,26,27,28,29] A multi-center, double-blind, placebo-controlled trial using EMPowerplus® for adults with bipolar disorder is now underway in Canada and the United States.[30] Four other universities are currently using EMPowerplus® in mental illness research.

Truehope's goal is to help all who suffer with devastating mental illnesses to find the hope, healing and health they are seeking by promoting independent research that can introduce safer, more effective treatments into standard psychiatric care.

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