What is folate?

Folate is a vitamin required for the human body to perform many essential processes on a day-to-day basis. Also called folic acid or vitamin B9, folate is a compound that the human body is unable to make on its own. Therefore, people must have a certain amount of folate in their diet in order to stay healthy. Folate is usually found in leafy vegetables and is often an added ingredient in enriched flour. Amongst its most important functions are the facilitation of DNA production and the creation of new blood cells.

Most people with a traditional Western diet are not at risk of folate deficiency, as an average human being has significant amounts of folate stored throughout the body. People with an abnormal diet, pregnant women, or individuals with malnutrition and medical illnesses (e.g., celiac disease) may be at increased risk of folate deficiency. People with substance abuse disorders and other mental illnesses are also at increased risk of folate deficiency.

People with low folate levels may develop anemia (the clinical term for decreased levels of red blood cells), which can often first appear as worsening fatigue throughout the day. Pregnant women with low folate levels are at increased risk of having children with neural tube defects (e.g., spina bifida). Other well-known consequences of folate deficiency are changes in thinking and personality. People with folate deficiency may appear confused, irritable or depressed. Folate deficiency can be diagnosed through a simple blood test that can be part of a standard medical evaluation for these symptoms. If a person is found to have a low level of folate on these tests, treatment with folate supplementation can reverse many of these symptoms caused by its deficiency.

L-methylfolate is an active form of folate that is used throughout the body in many of its most important metabolic activities. For some people with mental illness—specifically individuals with low folate levels and a diagnosis of either depression or schizophrenia—l-methylfolate will be useful as an additional treatment along with their other regularly prescribed psychiatric medications (e.g., antidepressants and antipsychotics).

What is the connection between folate and mental illness?

Extensive scientific research has shown that mental illnesses are not caused by a single factor. When a person with biological risk factors—such as the presence of other medical illnesses or certain genes that are associated with mental illness—experiences environmental adversity (e.g., stressful life events or malnutrition), this may trigger the development of mental illness. Furthermore, it is clear that biological and environmental factors work together on a biochemical basis.
People with mental illness are at greater risk of vitamin deficiencies due to a number of issues, including access to healthcare, education and other socioeconomic factors. Specifically, scientific studies have shown that people with depression, schizophrenia and other mental illnesses may be more likely to have folate deficiency than people without mental illness. Furthermore, there have been studies that suggest that a genetic condition impairing the body’s ability to correctly use folate may be more common in certain people with depression and other mental illnesses.

Supplementation with folate is not a first-line treatment for mental illness. Similarly, there is no evidence to suggest that folate supplementation is routinely effective at preventing mental illness. In spite of this, certain people with mental illness and low folate levels, as detected by laboratory evaluation, may benefit from treatment with additional folate supplementation. At the current time, the US-FDA has approved one form of folate—L-methylfolate (Deplin)—for use in the treatment of depression and schizophrenia. L-methylfolate has not been approved as a primary treatment, but rather as an adjunctive treatment—in addition to a person’s regular psychiatric medications—in these two mental illnesses for people with low folate levels. As with any other medication of form of treatment, the specifics of this treatment option should be discussed with one’s family, physicians and other members of the treatment team.

Are there any significant side effects of folate supplementation?

Folate is thought to be relatively safe for most people. In general, the main risk of folate supplementation is the chance that one might experience an allergic reaction (e.g., rash, hives, shortness of breath and other symptoms) to the pills. It should be noted that L-methylfolate can interact with other medications (e.g., valproic acid [Depakote] and carbamazepine [Tegretol]) which underscores the need to discuss this with one’s physicians.

In summary, for people with low folate levels, L-methylfolate supplementation, along with other psychopharmacological and psychosocial interventions, may play a useful role in the treatment of certain mental illnesses.

Reviewed by Ken Duckworth, M.D., and Jacob L. Freedman, M.D., May 2013