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Cholesterol In Depression And Suicide

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Cholesterol

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For the last quarter century, we have been told that cholesterol is dangerous for our health and were advised to avoid it in order to live a healthier life. However, cholesterol is essential in maintaining good mental health. The brain is most cholesterol-rich organ in the body, and depriving

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the brain of essential fatty acids and cholesterol can lead to detrimental health problems. Lower levels of cholesterol in the blood are associated with a heightened risk of developing major depressive disorder, as well as an increased risk of death from suicide. A study published in the Journal of Psychiatric Research found that depressed men with low total cholesterol levels (less than 165 milligrams per deciliter [mg/dL]) were seven times more likely to die prematurely from unnatural causes such as suicide and accidents.

Most recently, the continued allegation that cholesterol is dangerous came under scrutiny. A meta-analysis published in the March 2014 issue of Annals of Internal Medicine found that there's not enough evidence supporting the claim that saturated fat increases the risk of heart disease. After reviewing 72 different studies, researchers did not find that people who ate higher levels of saturated fat had more heart disease than those who ate less. Researchers came to the conclusion that instead of avoiding fats, which are essential to maintaining brain health, scientists are identifying the real villains as sugar and highly processed foods.

LOW CHOLESTEROL AND DEPRESSION

Several studies have linked low cholesterol levels to an increased risk of developing depression. Consider the following examples:

- A 1993 paper published in the Lancet reported, "Among men aged seventy years and older, categorically defined depression was three times more common in the group with low total plasma cholesterol . . . than in those with higher concentrations."
- A 2000 study published in Psychosomatic Medicine, researchers compared cholesterol levels to depressive symptoms in men ranging in age from forty to seventy. They found that men with long-term, low total

cholesterol levels “have a higher prevalence of depressive symptoms” compared to those with higher cholesterol levels.

- Women with low cholesterol levels are also vulnerable to depression. In 1998, Swedish researchers reported the results of their examination of cholesterol and depressive symptoms among 300 healthy women, ages thirty-one to sixty-five, in and around Stockholm. Women in the lowest cholesterol group (the bottom tenth percentile) suffered from significantly more depressive symptoms than did the others.
- A 2001 study published in *Psychiatry Research* looked at primary care patients in Ireland, finding that low levels of cholesterol were linked to higher ratings on depression rating scales.
- Italian researchers measured the cholesterol levels of 186 patients hospitalized for depression and found an association between low cholesterol and depressive symptoms.

This research is supported by other studies, including a 2008 meta-analysis, which found that higher total cholesterol was associated with lower levels of depression. A 2010 study published in *The Journal of Neuropsychiatry & Clinical Neurosciences* looked at the levels of HDL in depressed people and found that low levels of HDL were linked to “long-term depressive symptomatology.”

LOW CHOLESTEROL AND SUICIDE

Suffering through a depressive episode can be very difficult, and one of the great fears is that someone in the throes of depression does not see any point in continuing to live.

Early evidence of a link between low cholesterol and suicide came from the Multiple Risk Factor Intervention Trial study, a large-scale, long-term look at various health factors

living hundreds of thousands of volunteers. Data from

the study was analyzed by researchers from the University of Minnesota, who found that people with total cholesterol levels lower than 160 mg/dL were more likely to commit suicide than those with higher cholesterol levels. Other studies are equally alarming:

- A 2008 study looked at forty men who were hospitalized due to bipolar disorder. Twenty had attempted suicide at some point in the past, and the other twenty had not. Both cholesterol and blood fat levels were lower, on average, among those who had attempted suicide.
- A paper published in the Journal of Clinical Psychiatry in the same year reported the results of an examination of cholesterol levels in 417 patients who had attempted suicide at some point, 155 hospitalized psychiatric patients who had not, and healthy controls. Results of the study suggest that low cholesterol may be associated with suicide attempts.
- The suicidal method of choice, self-inflicted fatal gun wound versus pills, for example, may also be related to cholesterol levels. A 2008 study published in Psychiatry Research compared nineteen people who had attempted suicide using violent methods to sixteen who had attempted to kill themselves nonviolently, as well as to twenty healthy controls. The researchers found that "violent suicide attempters had significantly lower total cholesterol and leptin levels compared with those with nonviolent suicide attempts."

The connection between low cholesterol and suicide is highlighted in a 2004 study, which concluded that a low total cholesterol level can be used as an indicator of suicide risk. This study, involving suicide attempters with major depressive disorder, nonsuicidal depressed patients, and normal controls, found significant differences in cholesterol levels among the various groups.

The average total serum cholesterol level was 190 mg/dL among the normal controls, 180 mg/dL in nonsuicidal depressed group, and 150 mg/dL among the suicidal depressive patients. This study showed that the total cholesterol level can be used to gauge possible suicide risk (less than 180 mg/dL) and probable risk (150 mg/dL and lower).

Suicide is not the only type of violence associated with lower cholesterol levels. Homicide and other violence committed against others is also associated with low cholesterol. Swedish researchers compared one-time cholesterol measurements on nearly eighty thousand men and women, ranging in age from twenty-four to seventy, to subsequent arrests for violent crime. The researchers reported that "low cholesterol is associated with increased subsequent criminal violence."

WHAT'S THE CHOLESTEROL-DEPRESSION LINK?

There is strong scientific evidence indicating that low cholesterol and suicide, particularly violent suicide, are linked. The vast majority of studies linking low cholesterol to depression, suicide, and violence looked at the serum cholesterol level. But what about the amount of cholesterol in the brain?

Canadian researchers were the first to examine this question in their 2007 study published in the International Journal of Neuropsychopharmacology. The researchers measured and compared the cholesterol content in various parts of the brains of forty-one men who had committed suicide and twenty-one men who had died of other, sudden causes that had no direct impact on the brain. The results were intriguing: When the suicides were categorized as violent or non-violent, those who had committed violent suicide were found to have less cholesterol than the others in the gray

matter of their brains. This was seen specifically in the frontal cortex, a part of the brain that handles "executive functions," including processes involved in planning, cognitive flexibility, abstract thinking, initiating appropriate actions and inhibiting inappropriate actions, and selecting relevant sensory information. The frontal cortex essentially controls the ability to make good decisions.

Cholesterol is a critical precursor to many essential physiological molecules in the human body that directly and indirectly affect our moods and optimal brain function. Some researchers theorize that low levels of cholesterol alter brain chemistry, suppressing the production and/or availability of the neurotransmitter serotonin. Cholesterol is essential for the synthesis of all steroid and sex hormones, including DHEA, testosterone, and estrogen. Cholesterol is also needed in the synthesis of vitamin D.

Clinically low cholesterol is a significant variable in the treatment and recovery from mood disorders. A simple blood test looking at total cholesterol can reflect multiple factors influencing treatment. In my clinical practice for the past 20 years, I have found that low cholesterol (<130) has significant implications for what is referred to as "treatment-refractory" depression. This refers to patients who have failed to recover from traditional antidepressant medications. Treatment-refractory patients often struggle with intense suicidal ideation and aggressive behavior. Often, we are able to determine that low cholesterol is genetic, as there are other members in the family who also have low cholesterol levels, despite eating a diet rich in cholesterol and saturated fats. For individuals with low cholesterol, a diet with adequate cholesterol and saturated fats is highly recommended in order to replenish cholesterol levels, although supplemental cholesterol may also be needed for many.

New Beginning's Sonic Cholesterol supplement provides 250 milligrams of cholesterol per capsule. Individuals with low cholesterol levels may take between two to six capsules per day in order to restore adequate cholesterol levels for optimal brain function. Cholesterol repletion is often slow and can take many months. Once cholesterol levels are normalized, we often see an improvement in symptoms and a decreased dependency on medications. It is quite striking to consistently witness the high correlation between cholesterol levels and behavioral and mood symptoms.

For information about cholesterol supplementation, contact [New Beginnings Nutritionals](#).

CONCLUSION

There is a growing amount of research looking at the use of essential fatty acids, particularly omega-3's in psychiatry, but we often overlook cholesterol. Low levels of cholesterol and essential fatty acids are intimately linked to depression. Understanding the consequences of deficiencies in essential fats and cholesterol is important for the effective treatment of depression. Whether it is drug induced, genetic, or a result of dietary patterns, low cholesterol impairs optimal brain function and often prevents successful recovery from chronic depression.

Clinical References:

- 1. Hediger ML, England LJ, Molloy CA, Yu KF, Manning-Courtney P, Mills JL. Reduced bone cortical thickness in boys with autism or autism spectrum disorder. *J Autism Dev Disord*. 2008;38(5):848-856
- 2. Coleman, M. Clinical presentations of patients with autism and hypocalcemia. *Develop. Brain Dys*. 7: 63-70, 1994
- 3. Caudarella R, Vescini F, Buffa A, Stefoni S. Citrate and mineral metabolism: kidney stones and bone disease.



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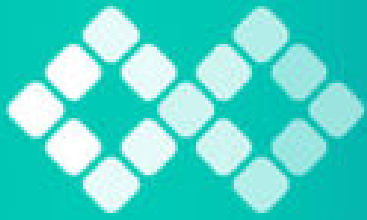
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