

People with depression may not reap full benefits of healthy behaviors

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Depression may inhibit the anti-inflammatory effects typically associated with physical activity and light-to-moderate alcohol consumption, according to researchers at Duke Medicine.

The finding – based on measurements of the cardio-metabolic risk marker C-reactive protein (CRP) – points to another potential danger of depression, which afflicts an estimated one in 10 adults in the United States. Study results were published online March 26, 2013, in the journal *Brain, Behavior, and Immunity*.

"Our findings suggest depression not only directly affects an individual's mental and [physical health](#); it might also diminish the health benefits of physical activities and moderate alcohol consumption," said lead author Edward C. Suarez, PhD, associate professor of psychiatry and [behavioral sciences](#) at Duke Medicine. "This appears to be specific to inflammation, which we know increases the risk for heart disease, so our findings suggest that depression could be a complicating risk factor."

CRP is a [biomarker](#) that predicts future [risk of heart disease](#) and other [chronic inflammatory conditions](#). It may also play a role in the formation of plaque that builds up in arteries.

Physical activity and moderate alcohol consumption, defined as one drink a day for women and two a day for men, have each been shown to lower the [risk of cardiovascular disease](#) and type 2 diabetes. These behaviors also reduce inflammation, which is demonstrated through

lower levels of CRP.

In contrast, depression is associated with elevated CRP and increased risk of heart disease and type 2 diabetes.

In the current study, researchers gathered information from 222 nonsmoking, healthy adults with no history or diagnosis of [psychiatric conditions](#). They recorded the amount of alcohol the participants consumed, defining light-to-[moderate drinking](#) as about half a drink per day for women and one daily drink for men. Participants reported how many hours of physical activity they did in the past week in activities such as walking, playing tennis, and exercise classes. Researchers also measured CRP levels through blood samples and evaluated the participants' depressive symptoms, with 4.5 percent of the study group meeting the criteria for depression.

The researchers found that untreated depression hindered the anti-inflammatory effects of moderate alcohol consumption and exercise. Participants who were physically active generally had lower CRP levels, with the exception of those who were depressed, who saw no beneficial effect on CRP levels.

In addition, light-to-moderate alcohol consumption was associated with lower CRP, but only in men who were not depressed. Men with symptoms of depression did not see the benefits of light-to-[moderate alcohol consumption](#). Depression did not make a statistically significant difference among women who consumed light to moderate amounts of alcohol, nor those who didn't drink or only drank infrequently.

"This is a novel finding, and it seems to be specific to inflammation as measured by CRP," Suarez said, given that depression did not affect other health markers such as fasting triglyceride and cholesterol levels.

Although preliminary, Suarez said the study could guide health care providers on how best to reduce the risk of [heart disease](#) and [type 2 diabetes](#). In addition to traditional recommendations to increase physical activity and adhere to a Mediterranean diet that includes alcohol consumption, clinicians may also need to consider the mental state of their patients and specifically the presence of depressive symptoms.

This combined approach could be especially beneficial for primary care providers, who are in a good position to both screen for depressive symptoms and measure CRP and cardiovascular risk. Early intervention – and perhaps more aggressive treatment for depression – may benefit patients who do not see the benefit of heart-healthy activities due to untreated depression.

"We're not saying that exercise isn't helpful for those with depression; what we saw is that depression has effects beyond what has previously been reported. Even if mental health improves, the anti-inflammatory benefits of physical activities may lag behind," Suarez said.

Future longitudinal studies could measure CRP levels among those with depression to see if the anti-inflammatory effects of healthy behaviors catch up over time.

Provided by Duke University Medical Center

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