# Elevated levels of C-reactive protein appear associated with psychological distress, depression

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Elevated levels of C-reactive protein, a marker of inflammatory disease, appear to be associated with increased risk of psychological distress and depression in the general population of adults in Denmark, according to a report published Online First by *Archives of General Psychiatry*, a JAMA Network publication.

Depression is one of the leading causes of disability and previous studies suggest that low-grade systemic inflammation may contribute to the development of depression. C-reactive protein (CRP) is a commonly used marker of inflammation, and inflammatory disease is suspected when CRP levels exceed 10 mg/L. Researchers are unclear whether and to what extent elevated CRP levels are associated with psychological distress and depression in the general population, according to the study background.

Marie Kim Wium-Andersen, M.D., of Herlev Hospital and Copenhagen University Hospital, Denmark, and colleagues examined whether elevated plasma levels of CRP were associated with distress and depression. Researchers analyzed CRP levels using data from two general population studies in Copenhagen, which included 73,131 men and women ages 20 to 100 years.

"The main finding of this study consisted of an association of elevated CRP levels with an increased risk for psychological distress and

depression in the general population," the authors comment.

Increasing CRP levels were associated with increasing risk for psychological distress and depression in analyses. For self-reported antidepressant use, the odds ratio was 1.38 for CRP levels of 1.01 to 3 mg/L, 2.02 for 3.01 to 10 mg/L, and 2.7 for greater than 10 mg/L compared with 0.01 to 1 mg/L. For prescription of antidepressants, the corresponding odds ratios were 1.08, 1.47 and 1.77, respectively; for hospitalization with depression they were 1.30, 1.84 and 2.27 respectively. Other analyses suggest that increasing CRP levels also were associated with increasing risk for hospitalization with depression, according to the study results.

"More research is needed to establish the direction of the association between CRP and depression because this study and others are primarily cross-sectional. The results also support the initiation of intervention studies to examine whether adding anti-inflammatory drugs to antidepressants for treatment of depression will improve outcome," the authors conclude.

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