

# C-reactive protein levels predict breast cancer survival rates

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Levels of C-reactive protein (CRP) are increased in response to acute inflammation, infection and tissue damage. There are also reports that CRP levels are elevated because of cancer. New research published in BioMed Central's open access journal *Breast Cancer Research* shows that elevated CRP levels are predictive of a poor prognosis for breast cancer sufferers.

C-reactive protein is produced by the liver, in response to infection or injury, when stimulated by the cytokine IL-6. Tumor sites are often associated with inflammation and this inflammation contributes to [tumor growth](#), invasion and metastasis. While elevated CRP has been found associated with a poor outcome for many solid tumors, including endometrial, cervical, prostate and colorectal cancer, there has been some discussion about whether this is true for breast cancer.

Researchers from Denmark looked at data from over 2000 breast cancer patients and followed their progress for up to seven years from diagnosis (average follow up was three years). The researchers found that regardless of lifestyle, menopause status and presence of cardiovascular disease, increasing levels of CRP resulted in increasingly poor prognosis. The five-year survival decreased from 90% for low CRP to 74% for high levels of CRP, disease-free survival reduced from 87% to 74%, and deaths from breast cancer increased from 11% to 20%.

Dr Kristine Allin, from Herlev Hospital, said, "Elevated CRP at time of diagnosis remained predictive of overall survival rates regardless of

patient's age, tumor size, lymph node status, or presence of metastasis, and whether or not the patient was estrogen receptor positive. It was still true even when we excluded patients which we believed to have bacterial infections because of their very high CRP levels."

Dr Allin continued, "While measuring CRP levels gives a general indication of health and longevity, measuring CRP levels for [breast cancer](#) patients seems to be an easy way to predict the severity of the patient's disease. This may allow clinicians to alter their treatment tactics and improve cancer [survival rates](#)."

Provided by BioMed Central

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