

An Analysis of the Impact of Immunosuppression upon the Prevalence and Risk of Cancer

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Abstract : In recent years, extensive research upon 'stress' has provided insight into its two distinct guises, namely the short-term (fight-or-flight) response versus the long-term (chronic) response. Specifically, the long-term or chronic response is associated with the suppression or dysregulation of immune function. It is also widely noted that the occurrence of cancer is greatly correlated to the suppression of the immune system. It is thus necessary to explore the impact of long-term or chronic stress upon the prevalence and risk of cancer. To what extent can the dysregulation of immune function caused by long-term exposure to stress be controlled or minimized? This study focuses explicitly upon immunosuppression due to its ability to increase disease susceptibility, including cancer itself. Based upon an analysis of the literature relating to the fundamental structure of the immune system alongside the prospective linkage of chronic stress and the development of cancer, immunosuppression may not necessarily correlate directly to the acquisition of cancer—although it remains a contributing factor. A cross-sectional analysis of the survey data from the University of Tennessee Medical Center (UTMC) and Harvard Medical School (HMS) will provide additional supporting evidence (or otherwise) for the hypothesis of the study about whether immunosuppression (caused by the chronic stress response) notably impacts the prevalence of cancer. Finally, a multidimensional framework related to education on chronic stress and its effects is proposed.

Keywords : immune system, immunosuppression, long-term (chronic) stress, risk of cancer

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