

# Role of Social Support in Healthy and Asthmatic Adolescents

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Social support has been suggested to have direct and indirect beneficial effects on various health status. Higher social support has been associated with lower mortality and morbidity, fewer pregnancy complications, and lower incidence of heart disease and cancer. More recently, a number of studies indicated that higher social support was associated with higher immune responses, suggesting a potential mechanism in the relationship between social support and health. However, the role of social support in adolescent population is not clear. The purpose of study, thus, was to determine whether social support had direct influence on immune responses and whether social support mediated the impact of stress on immune responses in adolescents across academic examinations, comparing responses from asthmatics with those of healthy counterparts. One hundred and thirty three high school students were divided into three groups: Healthy(N=58), Mild Asthma (N=44), and Severe Asthma(N=31). Because of heterogeneity in asthma, asthmatics were classified into two groups according to their prescription pattern of asthma medications. Subjects completed a set of questionnaires (Adolescent Perceived Event Scale and Norbeck Social Support Questionnaire) and gave a blood sample twice: once during midsemester and again during the week of final examinations. Immune measures included both functional assays and enumeration of leukocytes (natural killer cell cytotoxicity, lymphocyte proliferation, neutrophil superoxide release, T subsets) which represent general immunocompetence in persons. Three groups reported similar levels of perceived social support and stress over two timepoints. Immune responses did not differ among three groups. However, all subjects reported a significant decline in social support during exam period. Similarly, immune measures showed significant changes in the week of final examinations: natural killer cell(NK) cytotoxicity fell more than 50% in average, whereas lymphocyte proliferation and neutrophil superoxide responses were increased significantly. Social support, nevertheless, failed to show significant main effects on any immune responses across the two timepoints. When subjects were divided into high and low groups of social support and stress by median split, interactions between social support and stress became evident on certain immune measures: When social support was high, low stress group showed higher immune responses, whereas the high stress group showed lower immune responses. Because of marked immunological changes during exams, we further examined the role of social support between students who showed greater immune changes and students with less immune changes. The role of social support emerged most clearly in NK cytotoxic changes: overall social

support was found to be significantly higher in subjects who had less NK reduction during exams than those who had greater NK reduction, suggesting a protective role of social support in immunological decrement under stressful situation.