

Psychological stress and susceptibility to the common cold.

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BACKGROUND. It is not known whether psychological stress suppresses host resistance to infection. To investigate this issue, we prospectively studied **the relation between psychological stress and the frequency of documented clinical colds among subjects intentionally exposed to respiratory viruses.**

METHODS. After completing questionnaires assessing degrees of psychological stress, 394 healthy subjects were given nasal drops containing one of five respiratory viruses (rhinovirus type 2, 9, or 14, respiratory syncytial virus, or coronavirus type 229E), and an additional 26 were given saline nasal drops. The subjects were then quarantined and monitored for the development of evidence of infection and symptoms. Clinical colds were defined as clinical symptoms in the presence of an infection verified by the isolation of virus or by an increase in the virus-specific antibody titer.

RESULTS. The rates of both respiratory infection (P less than 0.005) **and clinical colds** (P less than 0.02) **increased in a dose-response manner with increases in the degree of psychological stress.**

Infection rates ranged from approximately 74 percent to approximately 90 percent, according to levels of psychological stress, and the incidence of clinical colds ranged from approximately 27 percent to 47 percent. These effects were not altered when we controlled for age, sex, education, allergic status, weight, the season, the number of subjects housed together, the infectious status of subjects sharing the same housing, and virus-specific antibody status at base line (before challenge). Moreover, the associations observed were similar for all five challenge viruses. Several potential stress-illness mediators, including smoking, alcohol consumption, exercise, diet, quality of sleep, white-cell counts, and total immunoglobulin levels, did not explain the association between stress and illness. Similarly, controls for personality variables (self-esteem, personal control, and introversion-extraversion) failed to alter our findings.

CONCLUSIONS. Psychological stress was associated in a dose-response manner with an increased risk of acute infectious respiratory illness, and this risk was attributable to increased rates of infection rather than to an increased frequency of symptoms after infection.

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