A prospective study was undertaken to evaluate the incidence and the course of Pneumocystis (P.) carinii colonization in immunocompetent patients with severe pulmonary diseases. A further perspective was to determine the diagnostic values of different detection methods.

Bronchoalveolar lavage fluid samples from 77 of 838 adult human immunodeficiency virus-antibody negative patients were examined by Diff-Quik stain. Direct immunofluorescence test and polymerase chain reaction. All Diff-Quik stains were negative, but direct immunofluorescence tests and polymerase chain reactions were positive in the samples of 5 patients. The normal number of granulocytes and CD4+ T-lymphocytes (median 810 cells/mm³ blood) and normal values of immunoglobulins proved the relative competence of the immune systems of the 77 patients. Although none of these patients received any agent effective against P. carinii, none developed a P. carinii pneumonia within a 120.5 day surveillance period. Nosocomial transmission could be excluded.

As the colonization with P. carinii did not result in pneumonia in immunocompetent patients, clinically silent carriers have to be assumed. In non AIDS-patients sensitive detection methods have to be used to identify colonized persons.