

Topic: Wood dust exposure

Title: Proximity to chipboard industries increases the risk of respiratory and irritation symptoms in children: the Viadana study

Conclusion: Emissions from chipboard industries might have a serious impact on children's health status and should therefore be reduced and closely monitored.

Authors: de Marco R, Marcon A, Rava M, Cazzoletti L, Pironi V, Silocchi C, Ricci P

Citation: Sci Total Environ. 2010 Jan 1;408(3):511-7

Context: Northern Italy.

Abstract: Emissions related to wood production processes are a recognized health hazard for professionally exposed subjects. The health effects of living close to wood industries are not known, particularly in the pediatric population. We aimed at investigating if living close to chipboard industries is a health hazard for the children in the Viadana district (Northern Italy). In December 2006, all the children (3-14 years) living in the Viadana district, where two big chipboard industries are located, were surveyed through a parental questionnaire (n=3854). The children were geocoded, and the distance of their houses/schools from the closest wood plant was computed. Independently of sex, age, nationality, residential area, traffic, parents' education, passive/parental smoking, questionnaire compiler and his/her environmental concern, the children living at < 2 km from chipboard industries had a greater prevalence of respiratory (Odds Ratio, OR=1.33, 95% CI: 1.11, 1.60), cough/phlegm (OR=1.43, 95% CI: 1.08, 1.88), nose/throat/mouth (OR=1.47, 95% CI: 1.23, 1.75), eye (OR=1.24, 95% CI: 1.04, 1.48) symptoms, school-days lost (OR=1.24, 95% CI: 1.04, 1.48), and emergency (OR=2.14, 95% CI: 1.47, 3.11) and hospital (OR=2.21, 95% CI: 1.17, 4.18) admissions. There was an inverse dose-response relationship between the adverse health outcomes considered and the distance from the plants. The attributable fractions for the children living close to the chipboard industries were substantial, ranging from 13% (eye symptoms) to 27% (cough/phlegm). The present findings suggest that emissions from chipboard industries might have a serious impact on children's health status and should therefore be reduced and closely monitored.

Policy Implications: Living closer than 2 km from chipboard industries may affect children's health.

Keywords: wood, dust