

Second-hand smoke increases risk of invasive meningococcal disease in children

December 7 2010

Children exposed to second-hand smoke are more likely to get invasive meningococcal disease than children who are not exposed, reports a study from Chien-Chang Lee at the Harvard School of Public Health (Boston, USA) and colleagues published in this week's *PLoS Medicine*.

The authors also found a possible association of second-hand [smoke exposure](#) with invasive pneumococcal disease and Haemophilus influenzae type b.

By reviewing and analysing published studies (30 case-control and 12 cross-sectional studies, mostly conducted in high income countries with good vaccination policies), the authors used the findings of all studies that had compared the occurrence of invasive [bacterial disease](#) in children exposed to second-hand smoke with its occurrence in children not exposed to second-hand smoke. The authors found that exposure to second-hand smoke doubled the likelihood of invasive meningococcal disease (with a total odds ratio for second hand smoke exposure of 2.02) and although there was an increase in the risk of developing invasive pneumococcal disease and Haemophilus influenzae type b, this increase could not be distinguished from chance finding, perhaps because a relatively small number of studies were available. However, nasal carriage of *N. meningitidis* (which causes meningitis) and *S. pneumoniae* in children exposed to second-hand smoke was significantly increased compared to those who were not exposed. The effects were generally stronger in the youngest children, those below 6 years of age, who are more vulnerable.

These results suggest that by decreasing children's exposure to second-hand smoke, for example by parents stopping smoking or not smoking at home, deaths and illness caused by invasive bacterial diseases could be reduced. Such a reduction would be particularly beneficial in poor countries, where vaccination against invasive bacterial diseases is low.

The authors conclude: "Because the burden of invasive bacterial disease is highest in developing countries where second-hand smoke is increasing, there is a need for high-quality studies to confirm these results, and for interventions to reduce exposure of children to [second-hand smoke](#)."

More information: Citation: Lee C-C, Middaugh NA, Howie SRC, Ezzati M (2010) Association of Secondhand Smoke Exposure with Pediatric Invasive Bacterial Disease and Bacterial

Carriage: A Systematic Review and Meta-analysis. PLoS Med 7(12): e1000374. [doi:10.1371/journal.pmed.1000374](https://doi.org/10.1371/journal.pmed.1000374)

Provided by Public Library of Science

Citation: Second-hand smoke increases risk of invasive meningococcal disease in children (2010, December 7) retrieved 20 April 2024 from <https://medicalxpress.com/news/2010-12-second-hand-invasive-meningococcal-disease-children.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--