



Research Update • Le point sur la recherche

Dangers of the damp and dark

Fighting mould and mildew, long a defining battle of good housekeeping, is now gaining moral support from the scientific community. For example, the April 1998 issue of *Pediatrics* publicized the dangers of *Stachybotrys atra*, a black fungus that thrives on wood or cardboard soaked during flooding or plumbing leaks. Evidence from recent outbreaks has linked the toxic spores of *S. atra* to potentially fatal pulmonary hemorrhaging in infants; more than 100 cases have been documented in the US since 1994. Researchers also point to more common health effects, attributing an increased risk of respiratory symptoms to high levels of mould spores.

Epidemiologists began investigating fungi in indoor air in the 1980s. In 1988 an Ottawa-based team evaluated both exposure to mould and

health indicators such as asthma, bronchitis and coughing, using a questionnaire sent to 18 000 families in 30 communities across the country. The researchers found a 32% to 89% increase in symptoms in both adults and children living in the one-third of homes that were damp or had visible fungal growth (*Am J Epidemiol* 1991;134:196-203 and *Am Rev Respir Dis* 1991;143:505-9).

“Some 30 studies in different countries all say that there’s an association between self-reported symptoms and home dampness and mould,” says team member Dr. David Miller, a mycotoxicologist at Carleton University in Ottawa. The team recently investigated 400 homes in Wallaceburg, Ont., in an effort to move beyond questionnaire-based research (*Can J Allergy Clin Epidemiol* 1997;2:25-32). The homes were characterized according to biological contaminants and then classified into 4 levels of mouldiness.

“The range of fungi common in mould-contaminated houses represents a very different flora than traditionally assumed,” notes Miller, “and does not correspond to the extracts of fungal species [generally] available for allergy testing.”

In addition to assessing self-reported symptoms, Miller’s group found that children living in the most contaminated houses experienced an increase in CD3+ T-cells expressing CD45RO, an increase in CD20+ B-cells expressing CD5+, and a reduced CD4/CD8 ratio, after controlling for age, dust mite antigens, pets and humidifier use. “These results are reflective of children who are antigenically challenged,” says Miller. “The CD4/CD8 ratio is an important measure of the status of the immune system. The change is small, but it appears to be real and is most likely explained by the fact that the children were in mouldy homes.” — *Deborah Schoen*

In the news . . .

Developmental delays in sperm-injection children

Intracytoplasmic sperm injection — injection of 1 sperm directly into an oocyte before in-vitro fertilization — has recently become the treatment of choice for severe male infertility. A case-control study of children conceived this way now shows that some of the children have mild or significant developmental delay at 1 year of age (*Lancet* 1998;351:1529-34). While many of the children studied had no signs of any abnormality, the findings raise concern about choosing a single sperm and bypassing natural sperm-selection processes.

Radon as a cause of lung cancer

A study in the June issue of the *British Journal of Cancer* reveals that radon gas in the home is a risk factor for lung cancer. It may account for 1 in 20 cases of lung cancer in Britain. Radon, a radioactive gas found in soil, can enter homes through basement walls and build up in indoor air. An estimated 50 000 people in Britain live in homes with radon levels of 400 Bq/m³, which increases the risk of lung cancer by an estimated 40%. The gas is also an issue in Canada, because it is emitted by granitic rocks.

Crying over spilt milk

Cows’ milk can lead to colic in infants and switching to hypoallergenic formula can clear up the problem, according to a large meta-analysis (*BMJ* 1998;316:1563-9). The authors recommend that parents of infants with colic try a hypoallergenic formula for a week if they have been feeding their child cows’ milk.

