

Newborns in intensive care exposed to thirdhand smoke residue

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Despite hospitals operating a smoke free policy, newborns in intensive care may still be exposed to thirdhand smoke residue from their smoker parents, suggests a small study published online in the journal *Tobacco Control*.

The residue of second hand smoke, referred to as [thirdhand smoke](#), is easily transported and deposited indoors, where it may take weeks or even months to degrade. It has been linked to cardiovascular and lung diseases in experimental research.

The researchers wanted to find out if thirdhand smoke residue would be detectable in a neonatal unit of a smoke free hospital, and consequently, whether this type of exposure would be evident in the newborns being treated there.

They therefore measured surface nicotine on the fingers of five mothers who smoked, and whose newborns had been admitted to neonatal [intensive care](#) at one hospital.

The mothers, most of whom visited their babies daily, said they were light smokers, smoking fewer than 10 cigarettes a day. Surface nicotine was found on all of the mums' fingers sampled.

They also tested the surfaces of the babies' incubators/cots and other furniture in the unit, such as chairs and couches. And they took [urine samples](#) from the five babies to check for the chemical by-products of

nicotine.

The analysis showed that nicotine was detectable on the surfaces of the incubators, cots, and other furniture tested.

The quantities found on the incubator and cot surfaces were lower than those on the unit furniture, which were at levels comparable with residue detected in the homes of smokers, where indoor smoking is banned.

In one case the unit furniture sample was at a level normally associated with [smoking](#) indoors.

This discrepancy might be because of the tougher cleaning regimes for hospital cots and incubators, suggest the researchers.

Detectable levels of several nicotine metabolites were also found in the babies' urine samples, with the highest levels in one baby, who was still being breastfed.

This is an observational study, so no firm conclusions about cause and effect can be drawn. And the researchers point out that some of the nicotine by-products found in the babies' urine might have been accumulated while in the womb, as it is not clear how long it takes for these chemicals to clear a newborn's system. The study is also small.

But the findings reiterate the pervasiveness of thirdhand smoke, even in highly protected environments, they say.

It is not known what the health consequences of this exposure might be, but given that premature newborns are so vulnerable, it may be harmful, say the researchers.

"These findings demonstrate that exposure is taking place in at least one

[[neonatal intensive care](#) unit], and raise the possibility that such exposure contributes to morbidity and premature mortality in vulnerable [babies](#)," they write.

"Ultimately, hospital policies and interventions to reduce [thirdhand smoke] transport and exposure may prove necessary, especially for immunocompromised children," they suggest.

More information: Thirdhand smoke contamination in hospital settings: assessing exposure risk for vulnerable paediatric patients, [DOI: 10.1136/tobaccocontrol-2015-052506](#)

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