



Chemicals in plastics harming unborn boys

Scientists say chemicals have gender bending effect

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Scientists in America have found the first evidence that common chemicals used in products as diverse as cosmetics, toys, clingfilm and plastic bags may harm the development of unborn baby boys.

Researchers have long known that high levels of substances called phthalates have gender-bending effects on male animals, making them more feminine and leading to poor sperm quality and infertility. The new study suggests that even normal levels of phthalates, which are ubiquitous, can disrupt the development of male babies' reproductive organs.

The discovery poses a huge problem for the chemical industry, which is already embroiled in a battle with the government over EU proposals on chemical safety.

Several types of phthalates, which are used to make plastics more pliable, and have been around for more than 50 years, have been banned, but many are still produced in vast quantities.

The study was carried out by scientists from centres across the US, including the University of Rochester and the National Centre for Environmental Health.

The researchers measured the levels of nine widely used phthalates in the urine of pregnant women and compared them with standard physiological measurements of their babies.

Tests showed that women with higher levels of four different phthalates were more likely to have baby boys with a range of conditions, from smaller penises and undescended testicles to a shorter perineum, the distance between the genitals and the anus. The differences, say the authors, indicate a feminisation of the boys similar to that seen in animals exposed to the chemicals.

Shanna Swan, an obstetrician at the University of Rochester, and lead scientist on the study, said researchers must now unravel what kinds of products are most to blame. One way that phthalates get into the bloodstream is when they seep into food from plastic packaging.

"It's going to take a while to work out which of these sources is most relevant to human exposure," she said.

Although the observed differences in body measurements were subtle, they indicate that what is generally regarded as the most ubiquitous class of chemicals is having a significant effect on newborns.

"Every aspect of male identity is altered when you see this in male animals," said Fred vom Saal, professor of reproductive biology at the University of Missouri-Columbia. Levels of aggression, parenting behaviour and even learning speeds were affected, he said.

Andreas Kortenkamp, an expert in environmental pollutants at the School of Pharmacy in London, said: "If it's true, it's sensational. This is the first time anyone's shown this effect in humans. It's an indicator that something's gone seriously wrong with development in the womb and that's why it's so serious."

He added: "These are mass chemicals. They are used in any plastic that is pliable, whether it's clingfilm, kidney dialysis tubes, blood bags or toys. Sorting this out is going to be an interesting challenge for industry as well as society."

The work, which is to appear in the journal *Environmental Health Perspectives*, is due to be presented at the Endocrine Disrupting Chemicals Forum in San Diego on June 3.

Gwynne Lyons, toxics adviser to the WWF, said: "At the moment regulation of the chemicals industry is woefully inadequate."

She added: "Right now the government is looking at how the regulation of hormone disrupting chemicals could be made more effective under new EU chemicals law, but the chemicals industry is lobbying very hard to water down this legislation."

"Political agreement on this legislation is not expected until later this year so it remains to be seen whether the UK government has the guts to stand up to industry lobbying. If they don't, wildlife and baby boys will be the losers."

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