

# Plastics chemical in dental fillings might affect children's behavior: study

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But research could not prove bisphenol-A (BPA) caused the subtle changes.

(HealthDay) -- Children who receive dental fillings made from the controversial plastics chemical bisphenol-A (BPA) could undergo small but long-term changes in their behavior, a new study suggests.

Researchers looked at 534 children who had fillings for at least two cavities and examined their social skills before and five years after getting fillings.

The fillings were made of either a silver blend called amalgam, which has been phased out because it contains mercury, or plastic composites, some of which are based on bisGMA, a material made from BPA.

The children who got the highest number of bisGMA-based fillings had more [emotional problems](#) five years later than the children who got fewer of these fillings. But no such change occurred with other types of

fillings.

The study appeared online July 16 and will be published in the August print issue of *Pediatrics*.

"It was actually kind of a surprise that instead of seeing any possible adverse associations with amalgam, that the trends seem to go the other way and the children in the composite group seemed to have more problems," said study author Nancy Maserejian, an [epidemiologist](#) at New England Research Institutes in Watertown, Mass.

"On average, the difference in [social behavior](#) scores were very small and would probably not be noticed for each individual child," Maserejian said. "But imagine a huge group of children around the country; you'd probably notice a difference."

Although it remains controversial whether BPA affects human health, previous research has linked BPA exposure to hyperactivity and [aggressive behavior](#) in young children.

Composite fillings, including the kind made from BPA, became the mainstay for treating children's cavities in the mid-90s because they were thought to be safer than mercury-containing amalgam fillings and they looked more natural, said Dr. Burton Edelstein, a [pediatric dentist](#) and professor of dentistry at Columbia University, in New York City.

"This study raises enough concern about the alternative of amalgam to revisit the value of amalgam," Edelstein said. There is no reason at this point to be concerned about the health effects of amalgam, or the stainless steel crowns that are sometimes placed on top of a tooth with a cavity, he added.

The study included 543 children between the ages of 6 and 10 who

received two or more fillings in their back teeth made of amalgam or a composite based on either bisGMA or urethane. The data were part of a New England-based study that was designed to look at the long-term effects of amalgam fillings on psychological scores and kidney function.

Children who had the most bisGMA-based fillings were more likely four or five years later to score poorly on tests that asked the children and their parents questions like whether they had trouble making friends or felt anxious or depressed.

Overall, the researchers found that 16 percent of the children in the top third for their number of bisGMA-based fillings were at risk for having a behavior problem, based on a combination of children's self-reports and parents' descriptions, compared with only 6 percent of children in the bottom two-thirds.

But no difference existed in emotional problems when looking at children who had more vs. fewer amalgam or urethane-based composite fillings.

"This study is a call for more research," said Dr. Mary Hayes, a pediatric dentist in Chicago and a spokeswoman for the American Dental Association.

Hayes chooses between composite fillings or amalgams depending on the tooth and where it is in the mouth and if parents want a white-colored composite filling for their children instead of a silver filling. "Most composites that I am aware of have BPA," she said.

Study author Maserejian said, "We are really not sure if BPA or another material released from the resin could be causing these effects." She and her colleagues are currently measuring BPA levels in children's systems.

Children could be exposed to materials in their fillings both when the dentist applies them and over time, because the fillings wear down and release chemicals that children swallow, Columbia's Edelstein said.

"If you've got to have a filling, you're better to go with one that does not have [BPA](#), but that is not a panacea," Edelstein said. Parents can also reduce exposure by making sure their dentist takes standard steps, like vacuuming around the tooth after applying the filling, he added.

"The only real solution is to realize that no material is better than the material that Mother Nature gave us and to do a better job of [cavity] prevention," Edelstein said.

Parents can help prevent [cavities](#) by helping their [children](#) brush their teeth, giving them water instead of sugary drinks and visiting the dentist twice a year.

If your child does have a cavity, "talk to the dentist about where the cavity came from and how to prevent the next one," Edelstein said. "This study was clear that [higher] doses of fillings were associated with a health impact."

The study also made it explicitly clear that you should not have your [amalgam fillings](#) replaced with composites, which some dental practices will do, Edelstein said. "If you've got a sound filling, leave it in place."

While the study found an association between materials in fillings and behavior, it did not prove a cause-and-effect relationship.

**More information:** You can learn more about preventing cavities in children by visiting the [American Academy of Pediatric Dentistry](#).

Paper [pediatrics.aappublications.org ... s.2011-3374.abstract](http://pediatrics.aappublications.org ... s.2011-3374.abstract)

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