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Researchers analyze impact of chemical BPA in dental sealants used in children

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Researchers from Mount Sinai School of Medicine have found that bisphenol A (BPA) released from some plastic resins used in pediatric dentistry is detectable in the saliva after placement in children's mouths. BPA is a widely used synthetic chemical that has been associated with changes in behavior, prostate and urinary tract development, and early onset of puberty. The findings are published in the current issue of *Pediatrics*.

Reins containing BPA are commonly used in preventive and restorative oral care. Children often have their teeth sealed with a dental resin containing BPA to prevent cavities, and it is often used for fillings. Led by Philip Landrigan, MD, Dean for Global Health, Professor and Chair of Preventive Medicine, and Director of the Children's Environmental Health Center at Mount Sinai School of Medicine, the research team conducted a literature review and found that BPA was detectable in saliva for up to three hours after the dental work was completed.

"BPA is commonly used in dental products, and while exposure from dental materials is much less common than from food storage products, we are still concerned," said Dr. Landrigan. "These dental products are still safe and an effective way to promote good oral health, but dentists should take precautions to reduce potential absorption of this chemical and the negative side effects associated with it."

Dr. Landrigan's team reviewed toxicology data over the last 10 years to examine the benefits and potential childhood health risks of using dental

materials containing BPA. They determined that dental products contain different derivatives of BPA, and that saliva breaks down the derivative into BPA during the dental procedure and for three hours following it. As a further precaution the authors urge that resins containing BPA not be applied in women during pregnancy.

The authors caution that these results are preliminary, and that data on the absorption of BPA in the body were not available. "Further research is needed to fully grasp the impact of BPA in dental products, and to analyze all dental products that use this chemical," continued Dr. Landrigan. "However, the overwhelming benefit of these dental resins in oral health outweighs the brief exposure to BPA. Dentists should continue to use these products, but manufacturers should disclose specific information about the chemical structures of these products and search for alternatives."

To reduce exposure, the authors recommend the use of one BPA derivative called bis-GMA over another, bis-DMA, as bis-GMA seems to pose less risk. They also recommend that dentists rub the surface of the materials with pumice to remove the top liquefied layer of the sealant. Another preventive measure would be to encourage the patient to rinse for 30 seconds immediately following the procedure to prevent saliva from breaking the chemical down into BPA.

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