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New Research Finds Chewing Sugar-Free Gum Reduced Preterm Births

10-Year, Multicenter Study is the Largest of its Kind

Washington, DC — Each year, an estimated 15 million babies are born prematurely or preterm (defined as delivery before the 37th week of pregnancy), and this number is rising, according to the World Health Organization. Preterm babies are at greater risk of experiencing serious health problems.

Over the last several decades, multiple studies have shown a link between poor oral health and increased occurrence of preterm birth. Researchers have looked at various ways to improve dental health during pregnancy, including doing a "deep-teeth cleaning," (also called 'scaling and planing') which involves removing plaque and tarter on the teeth and below the gum line. However, despite improving periodontitis, deep teeth cleaning approaches have not proven to be effective in the prevention of preterm birth. But now researchers have discovered an easy and inexpensive way to improve oral health and reduce preterm births.

In a new study to be presented today at the Society for Maternal-Fetal Medicine's (SMFM) annual meeting, The Pregnancy Meeting™, which is being held virtually, researchers will unveil findings that suggest that daily use of xylitol chewing gum starting pre- or early pregnancy significantly reduced the number of preterm births. Xylitol is a naturally occurring alcohol found in fruits and vegetables and is commonly used as a sugar substitute in chewing gum.

The study, the largest of its kind, was conducted over 10 years and included 10,069 women in the South-Central African country of Malawi, which has the highest number of preterm births in the world. Most Malawians live in rural locations, making it especially difficult to conduct of study of this magnitude.

The cluster randomized trial enrolled participants from eight health centers in Malawi and was approved by the Malawi Ministry of Health. Participants enrolled voluntarily and consented to participation before they became pregnant or within 20 weeks of becoming pregnant. All of the eight health centers provided health care messages promoting oral health care and preterm birth prevention and care, while half of the eight centers were randomized to also provide xylitol chewing gum to enrolled research participants.

In the four health centers that served as the control group, 5,520 participants received basic perinatal and oral health education, including things they could do to help lower the chance of delivering a baby prematurely. In the other four centers, the 4,549 enrolled participants also received this same health education. In addition,

they were given xylitol chewing gum and instructed to chew the gum for 10 minutes once a day, ideally twice a day, throughout pregnancy.

Out of the 9,670 participants who were available for contact during the up to six years of follow-up, results showed a significant reduction in preterm birth among those who chewed the xylitol containing gum (12.6 percent vs. 16.5 percent) and fewer low birth weight babies, those weighing 5.5 pounds or less (8.9 percent vs. 12.9 percent). Participants also saw an improvement in their oral health.

"Using xylitol chewing gum as an intervention prior to 20 weeks of pregnancy reduced preterm births, and specifically late preterm births between 34 to 37 weeks," says the study's lead author Kjersti Aagaard, MD, PhD, a Professor in Maternal-Fetal Medicine and Vice Chair of Obstetrics & Gynecology at Texas Children's and Baylor College of Medicine in Houston. "When we analyzed by birth weight, instead of estimated gestational age at delivery, we similarly showed a significant improvement in the birth weight with one-third fewer low birth weight babies being born."

Adds Aagaard, "What's unique about our study is that we used a readily available, inexpensive, and palatable means to reduce the risk of a baby being born too soon or too small. There is some real science behind the choice of xylitol chewing gum to improve oral health, and our novel application to improving birth outcomes is exciting. This has been a labor of love with our colleagues in Malawi, and we were honored to work side-by-side to demonstrate that xylitol chewing gum in early or pre-pregnancy improved oral health by reducing periodontal disease in pregnancy, which was strongly associated with our observed reduction of preterm and low birthweight birth in Malawi. This fits with longstanding evidence linking oral health with preterm births."

The next step, say researchers, is to conduct studies in other parts of the world, including in the U.S., to determine whether this invention will be effective in settings where there may be a lower burden of preterm birth tied to oral health.

The abstract has been published in the January 2022 supplement of the *American Journal of Obstetrics and Gynecology* (AJOG*J*) and can be accessed at no cost on the *AJOG* website. To view the presentation of this abstract or other Pregnancy Meeting™ abstracts and events, visit the SMFM website or contact Karen Addis at karen@addispr.com or 301-787-2394.

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About the Society for Maternal-Fetal Medicine

The Society for Maternal-Fetal Medicine (SMFM), founded in 1977, is the medical professional society for obstetricians who have additional training in high-risk, complicated pregnancies. SMFM represents more than 5,000 members who care for high-risk pregnant people and provides education, promotes research, and engages in advocacy to reduce disparities and optimize the health of high-risk pregnant people and their families. SMFM and its members are dedicated to optimizing maternal and fetal outcomes and assuring medically appropriate treatment options are available to all patients. For more information, visit SMFM.org and connect with the organization on Facebook and Twitter. For the latest 2022 Annual Meeting news and updates, follow the hashtag #smfm22.