

Smoking throughout pregnancy is tied to five-fold-plus risk of sudden unexpected infant death

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A Rutgers University analysis of infants born to non-Hispanic Black and white mothers in the United States has found infants exposed to maternal smoking throughout pregnancy were more than five times as likely as

infants of never-smokers to suffer a sudden unexpected infant death (SUID).

While a smaller percentage of Black than white mothers reported smoking, the risk of SUID rose as the duration of smoking increased for [infants](#) of both groups. The highest risk levels were found when smoking continued throughout pregnancy.

"The message is simple," said Barbara M. Ostfeld, program director of the SIDS Center of New Jersey, professor of pediatrics at Rutgers Robert Wood Johnson Medical School and lead author of the study, which was published in the *Journal of Perinatology*. "Smoking greatly elevates the risk of sudden unexpected infant death. Everyone who plans to get pregnant has a profoundly important reason to quit."

Ostfeld's team calculated a SUID rate of 1.07 deaths per 1,000 [live births](#) for babies born to non-Hispanic Black (Black) never-smokers, which rose to 3.80 for infants born to those who smoked throughout pregnancy. About 10 percent of Black mothers of surviving infants smoked either during or before pregnancy, compared to nearly a quarter of mothers of SUID victims.

For infants of non-Hispanic white mothers, the SUID rate also rose in association with [smoke exposure](#), increasing from 0.34 per 1,000 live births for never-smokers to 2.33 for infants of steady smokers. About 16 percent of white mothers of surviving infants smoked either during or before pregnancy, while fully half of the white mothers of SUID victims did.

Duration of smoking had a significant incremental association with SUID, regardless of the mother's race. Infants of never-smokers fared best, while the risk of SUID rose with every trimester of in-utero exposure.

It was, therefore, particularly concerning that for those who smoked, the most common pattern in either [racial group](#) was smoking throughout the pregnancy. Among smokers whose infants survived, 60 percent of white smokers and 54 percent of Black smokers did so throughout pregnancy.

Among smokers whose infants died of SUID, 78 percent of white smokers and 67 percent of Black smokers had smoked throughout pregnancy.

"Given the strong connection between [smoking](#) and SUID, it was concerning that the majority of those in either racial group who had been smokers continued to smoke through the [pregnancy](#)," said Thomas Hegyi, medical director of the SIDS Center of New Jersey, professor of pediatrics at Rutgers Robert Wood Johnson Medical School and a co-author of the study. "This finding underscores the difficulty smokers have with quitting and suggests that there is a national need for more effective approaches as well as better access to these services."

The research team gathered data on infants born between 24 and 42 weeks of gestation from anonymous United States birth and death records maintained by the Centers for Disease Control for the period 2012-2013. Cases of SUID were included if the death occurred following discharge from the hospital of birth and where an autopsy had been performed.

These criteria resulted in the inclusion of 3.3 million births to white women and 857,864 to Black women. SUID describes the [death](#) of an infant at less than 365 days of age to Sudden Infant Death Syndrome, ill-defined and unknown causes, or accidental suffocation and strangulation in bed.

Because racial disparity has frequently been found in SUID risk factors, this study included an assessment of outcomes by race to determine

whether there were any unique patterns of usage that could inform the development of new smoke-ending interventions.

More information: Barbara M. Ostfeld et al, Racial differences in the impact of maternal smoking on sudden unexpected infant death, *Journal of Perinatology* (2022). [DOI: 10.1038/s41372-022-01516-0](https://doi.org/10.1038/s41372-022-01516-0)

Provided by Rutgers Robert Wood Johnson Medical School

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