

# One in 270 births have 'dual burden' of prematurity and severe maternal complications

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A quarter of women who have serious maternal complications during childbirth also have premature births, posing a "dual burden" on families, finds research from NYU Rory Meyers College of Nursing, the University of California, San Francisco (UCSF) California Preterm Birth Initiative, and Stanford University.

The study, published online in *The Journal of Maternal-Fetal & Neonatal Medicine* and the first to focus specifically on "dual burden" births, shows that these complications occur in one of 270 births and are twice as likely to affect Black mothers.

"The situation of combined maternal and newborn complications is likely to be extremely stressful for families concerned for both the mother's and the infant's health. However, healthcare providers may not fully recognize this, especially when maternal and newborn care are delivered by different specialists. There's not enough attention to the combined effect on the family," said Audrey Lyndon, Ph.D., RN, FAAN, professor of nursing and assistant dean for clinical research at NYU Rory Meyers College of Nursing, as well as the study's lead author.

Premature infants—those born at less than 37 weeks—experience a range of [health issues](#), including problems with breathing, digestion, heart rate, and development. Mothers can also face serious to potentially life-threatening [health](#) issues during childbirth. These maternal

complications—also known as severe maternal morbidity—include serious bleeding that requires a blood transfusion, blood clots, heart failure, emergency hysterectomies, and other serious problems. Research shows that severe maternal morbidity is rare but is also increasing nationally, with rates more than doubling from 2002 to 2014, and can have ongoing consequences for women and their families.

While prior studies have shown associations between [premature birth](#) and severe maternal morbidity, the prevalence of experiencing the "dual burden" of both has not been studied until now. Lyndon and her colleagues examined data from all California births from 2007 through 2012, a total of 3.1 million births. California keeps robust data on childbirth for its diverse population and accounts for approximately one in eight of all U.S. births.

The researchers found that the rates of preterm [birth](#) were 876 per 10,000 births, and the rates of severe maternal morbidity were 140 per 10,000 births. A quarter of the women with severe maternal morbidity, or one per 270 births, also had their babies prematurely. The majority of these "dual burden" births occurred in cases of preterm labor (61 percent) rather than births that needed to occur early for medical reasons (23 percent).

Several factors were associated with a higher risk of a "dual burden" birth, including cesarean birth, carrying multiples, smoking during pregnancy, being underweight, high blood pressure, and diabetes. The researchers also found that Black women were twice as likely to have a "dual burden" birth as White women when controlling for other factors.

"Racial disparities in health outcomes should be considered markers of exposure to racism, where poorer health reflects the exposure to chronic stress from discrimination and structural inequity, rather than race being a 'risk factor' for disease or poor [health outcomes](#)," said Lyndon. "Our

study suggests that combined maternal and infant health challenges may result from exposure to racism for Black families and illustrates the transgenerational impact of such exposure."

Dual burden births have immediate and persistent physical, psychological, social, and financial consequences for women and their families. Furthermore, the experience may trigger post-traumatic stress disorder (PTSD) for women and their partners, leading to consequences including impaired parent-infant attachment, damaged partner relationships, and prolonged suffering and feelings of failure. These consequences could add to what may already have been racialized birth experiences for Black families, with Black women reporting disrespectful encounters when engaging reproductive health care services and Black preterm infants less likely to be referred for developmental follow-up.

"Imagine the deep trauma a family experiences when both the mother and newborn child are simultaneously fighting for their lives," said Laura Jelliffe-Pawlowski, Ph.D., MS, associate professor of epidemiology & biostatistics in UCSF School of Medicine, director of precision health and discovery with the UCSF California Preterm Birth Initiative, and the study's senior author. "This is the reality for 1,900 families in California, and it can have rippling effects across generations, particularly for Black families who are more likely to have a dual burden birth."

Given that mothers and newborns are cared for by different teams of specialists, the researchers point to the need for new models of care that explicitly coordinate infant and maternal health care teams and provide proactive support for the family's transition to home and long-term health

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Jelliffe-Pawlowski, study authors include Rebecca Baer of the University of California, San Diego and the California Preterm Birth Initiative; Caryl Gay of UCSF School of Nursing and the California Preterm Birth Initiative; Alison M. El Ayadi of UCSF; and Henry Lee of Stanford University and the California Perinatal Quality Care Collaborative.

**More information:** Audrey Lyndon et al, A population-based study to identify the prevalence and correlates of the dual burden of severe maternal morbidity and preterm birth in California, *The Journal of Maternal-Fetal & Neonatal Medicine* (2019). [DOI: 10.1080/14767058.2019.1628941](https://doi.org/10.1080/14767058.2019.1628941)

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