

Smallest and largest fetuses at greater risk of being stillborn, research finds

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The tiniest and the heaviest fetuses are at much higher risk of being stillborn than those of average weight, new research has found.

Fetuses who are "severely small for [gestational age](#)," or weigh below the bottom one percentile of all fetuses, disproportionately account for about six per cent of all [stillbirths](#), according to researchers at St. Michael's Hospital.

Fetuses that are "severely large for gestational age," or weigh above the 99th percentile, account for nearly one per cent of stillbirths.

"In this study of all registered liveborn and [stillborn](#) infants in Ontario, extreme underweight and overweight states confer the highest risk of stillbirth," said Drs. Joel Ray and Marcelo Urquia, authors of the paper that appears in the current issue of the *Journal of Perinatology*.

Stillbirth is traditionally defined as the death of a fetus at more than 23 weeks of gestation weighing 500 grams or more. However, Drs. Ray and Urquia included babies born starting as early as 20 weeks of gestation on the grounds that maternal-fetal bonding is well established at that point, since most mothers-to-be have undergone a Level 2 ultrasound detailing the unborn baby's developing bones and organs.

Including those babies provides new information about the degree to which low and high weights are associated with stillbirths, including those before the point of viability, Dr. Ray said. That, in turn, may help

doctors better decide at which time point it is better to allow a pregnancy to continue so the fetus can grow, or to deliver a [premature baby](#) who might otherwise die in the womb.

The rate of stillbirths in industrialized countries is about six per 1,000, of which half occur after 27 weeks of gestation. In poorer countries, the rate is up to five times higher. Stillbirths are more common than the death of a baby after birth, such as from [prematurity](#) or as a result of [Sudden Infant Death Syndrome](#). Yet, stillbirths have largely been ignored by our society, especially in terms of their emotional effect on the mother, her partner and extended family, Dr. Ray said.

The researchers examined records of all 767,016 live births and all 4,697 stillbirths in Ontario between 2002 and 2007. They said that because they looked at so many births, they could also make statistically precise estimations of the impact of extremely low birthweight on the risk of stillbirth.

They found that 19 per cent of stillbirths occur in fetuses under the tenth percentile of weight. But being below the first percentile of weight meant the fetus faced a 9.5 times higher risk of being stillborn than babies who are within the average weight range, between the 40th to 60th weight percentiles.

Dr. Ray said that when fetuses are severely small for gestational age, it usually means there is a problem with the placenta. Fetuses who are severely large for gestational age generally so because of the mom having diabetes or obesity.

The authors conclude that since more than 95 per cent of women in the industrialized world receive a Level 2 anatomical ultrasound before 22 weeks gestation, fetal weight should be estimated and reported at this time of the ultrasound, as a standard practice. In doing so, the early

presence of a small or large fetus may help guide ongoing ultrasound surveillance for growth and well-being.

Provided by St. Michael's Hospital

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