

Ethnicity plays role in size of baby Study tries to take the labels off newborns

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Ethnicity plays a significant role in the size of newborns, according to a study of nearly 2,700 infants born at B.C. Women's Hospital, the first of its kind in Canada.

In B.C., where 40 per cent of women delivering at Women's Hospital are of East Asian (China, Hong Kong) descent and 10 per cent are of South Asian (India, Pakistan) descent, there has been a growing awareness of possible size differences, so researchers set out to determine whether they are statistically significant enough to stop basing norms on somewhat arbitrary Caucasian standards.

"The greatest utility of this study is that we can inject some common sense into the discussion, so that we don't label as malnourished babies who may be a little small, relative to Caucasian standards, and so that we don't give parents the anxiety-causing idea that their child is not normal," said co-researcher Dr. Michael Klein.

Study leader Patricia Janssen, a peri-natal epidemiologist, said the study doesn't explain the reasons behind the size differences, an issue that is neither well studied nor well understood. But diet and inheritable traits such as height may play a role, as might parental weight and body mass, and other factors such as education, physical activity, stress and prenatal medical care.

The team of researchers compiled length, weight and head circumference measurements on babies of European (Caucasian), Chinese and South Asian descent and confirmed their instincts that, generally speaking, newborns of European descent are indeed bigger on all three measurements than newborns of Chinese and South Asian descent, regardless of gender.

(Offspring of mixed marriages were not included in the study, nor were infants born prematurely.)

The researchers found that newborns of European descent weigh about 250 grams (8.8 ounces, or about a half pound) more than newborns of Chinese and South Asian descent and they are also about .89 cm longer (just over a third of an inch) at 40 weeks gestation than newborns of Chinese and South Asian descent. Caucasian newborns also have bigger head size circumferences -- about .50 cm (or about a fifth of an inch) bigger than Chinese babies and bigger than South Asian babies, although not by as much.

The researchers, from the University of B.C., the Child and Family Research Institute and Women's and Children's hospitals, have published their results in an online journal called Open Medicine.

The results set new measurement standards for newborns based on ethnic origin, so that smaller infants are not subjected to inappropriate or unnecessary investigations and interventions like blood sampling. Babies who are "off the charts" or extremely undersized or oversized will still be investigated.



CREDIT: Ian Lindsay/Vancouver Sun
Newborn Sandhu (no first name yet) lies sleeping with his mom at Women's Hospital Wednesday. A study at the hospital has shown trends in birth weight and size that correspond to ethnic background.

When it comes to newborns, size matters because it may be suggestive of health problems in the mother or infant. Smaller babies may be susceptible to temperature control problems, blood sugar disorders and infections, not to mention having an increased risk of death.

Babies who are small for their gestational age may also be suggestive of risky maternal behaviour such as smoking or drug and alcohol abuse. Large babies may mean that mothers have a condition called gestational diabetes.

Health professionals take measurements of infants within 48 hours of birth to identify those who may deviate from the standards so they can be closely monitored. While doctors have long known that boy babies are slightly bigger than girls, there has been a growing appetite for standards that relate to ethnicity, especially since "there are so many infants being born here who are not white," said co-researcher Dr. Paul Thiessen.

Thiessen said the study found that Caucasian newborns are about six to eight per cent heavier, on average, than their Chinese and South Asian counterparts. And knowing that should be reassuring for non-white parents "so that they aren't left thinking that there is something wrong with their smaller, perfectly normal baby."

The use of ethnic-specific growth charts may help prevent the misclassification of newborns as either small or large for gestational age. Using the measurements to detect "clinically relevant deviations from the normal range will help identify newborns at risk for the adverse health outcomes associated with abnormal intrauterine growth" according to the study.

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Jin Chen (Girl)
Chinese
Weight 2,940 grams (6 lb., 8 oz.)
Head circumference 33 cm
Length 50.5 cm

Baby Sandhu (Boy)
South Asian
Weight 2,300 grams (5 lb., 0 oz.)
Head circumference 31.5 cm
Length 45 cm

Ella Grace Almeida (Girl)
Caucasian
Weight 4,375 grams (9 lb., 10 oz.)
Head circumference 37.5 cm
Length 52 cm