

Intergenerational Link Found in Breech Delivery

BY ROBIN TURNER
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Men and women who were delivered in breech presentation have more than twice the risk of having their firstborn children delivered in breech position, according to a study published online in *BMJ*.

A population-based study by researchers at the University of Bergen, Norway, found the intergenerational recurrence risk of breech delivery in offspring was equally high when transmitted through fathers and mothers.

Tone Irene Nordtveit, a Ph.D. student, and colleagues cited genetic inheritance predominantly through the fetus as a factor in the observed pattern of familial predisposition to breech delivery at term. Breech delivery is associated with significantly increased perinatal mortality and morbidity (*BMJ* 2008 [doi:10.1136/bmj.39505.436539.BE]).

The data were taken from the Medical Birth Registry of Norway, including all

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births reported from 1967 to 2004. In Norway, all live births and stillbirths of at least 16 weeks' gestation are registered, for a total of 2.2 million births.

Several factors are associated with an increased risk of breech delivery,

such as older mother, first baby, and low gestational age and birth weight. But these account for one in seven of all breech births, according to the study. The researchers said the current findings are important because there are no data that show whether genes also could be a factor in breech delivery.

"A considerable number of breech presentations are not detected before labor, despite careful antenatal surveillance," Ms. Nordtveit said in an interview. The proportion of undiagnosed breech deliveries at admission to hospital has been reported to be as high as 31%. "To avoid undiagnosed breech deliveries, information about the mother's and the father's own presentation at birth will be valuable in the evaluation of fetal presentation in the third trimester."

The researchers linked the birth records of mothers and fathers by national identification numbers to birth records of their offspring, providing 451,393 generation files on mothers and their offspring and 295,253 records of fathers and their offspring. All births delivered in breech position were considered breech delivery, regardless of whether they involved elective or emergency cesarean section.

The researchers then excluded multiple pregnancies and infants who weighed less than 500 g in both generations and restricted the study to firstborn offspring in the second generation. As a result, the

study had 232,704 mother-offspring units and 154,851 father-offspring units. All of the mothers and fathers were born during 1967-1986, and 98% of the second generation was born during 1987-2004. The proportion of breech births was 2.5% in 1967-1976, 3.0% in 1977-1986, 3.2% in 1987-1996, and 3.5% in 1997-2004.

Among 318,855 males and 301,438 females who were born in 1967-1976, 96.8% and 97.6%, respectively, lived to age 18 years. The mortality in those delivered in

breech position was four times the mortality of those delivered in the cephalic presentation.

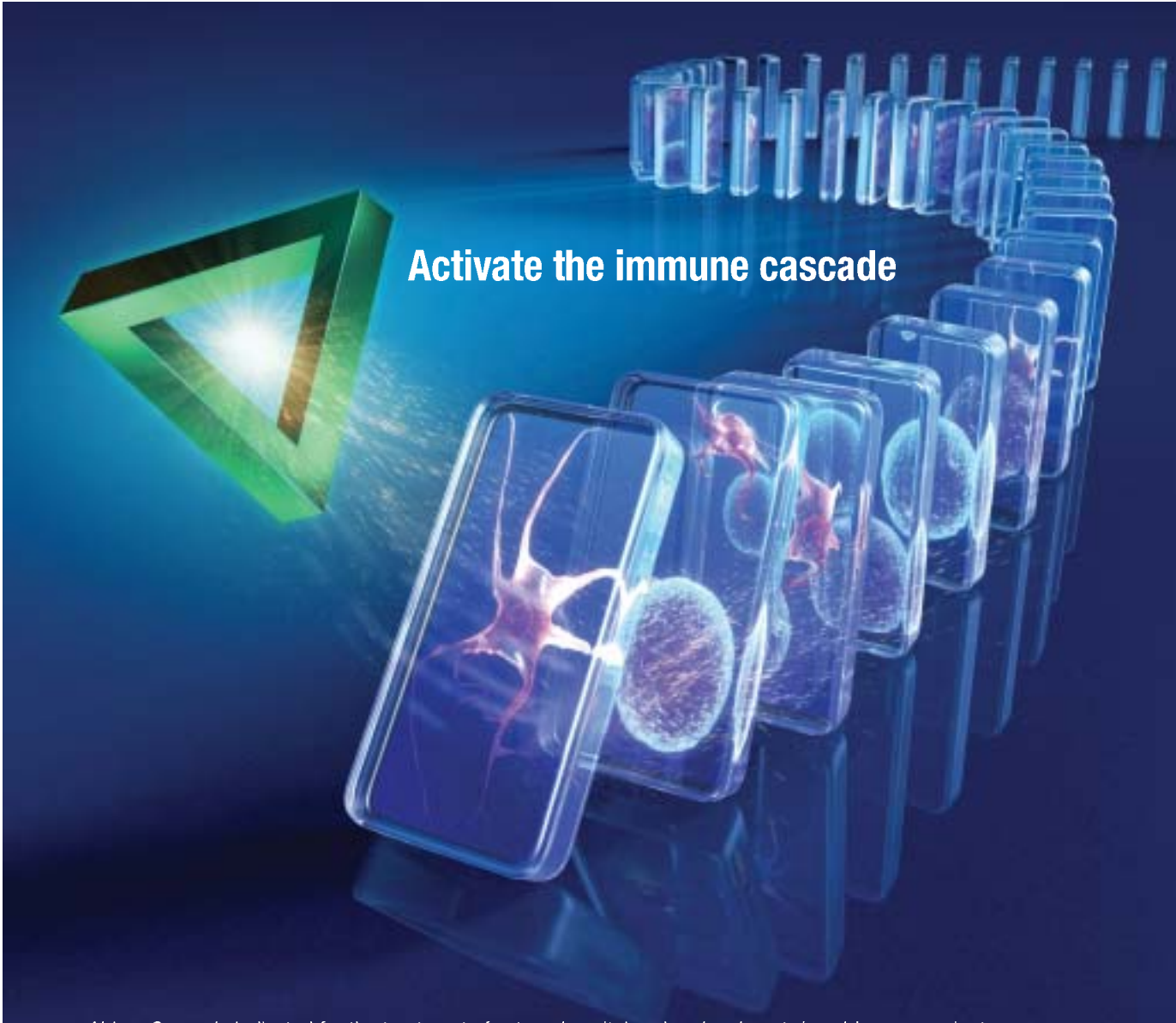
The highest risk of recurrence of breech delivery was seen in babies of firstborn men and women who themselves were delivered in breech position at term, with an odds ratio of 2.2.

The strongest risks were found for vaginally delivered offspring and were equally strong for men and women. There was no recurrence between generations for men

and women born preterm. The prevalence of breech presentation is 15% at 29-32 weeks' gestation and 3%-4% at term.

Men delivered in breech presentation seem to carry genes predisposing to breech delivery that are transferred to their offspring, increasing their partners' risk of breech deliveries. Fetal genes also can be transmitted from women delivered in breech, according to the study.

The researchers said they had no conflict to report. ■



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