

# Caesarean sections associated with risk of asthma

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Babies born by Caesarean section have a 50 % increased risk of developing asthma compared to babies born naturally. Emergency Caesarean sections increase the risk even further. This is shown in a new study based on data from 1.7 million births registered at the Medical Birth Registry at the Norwegian Institute of Public Health.

The goal of the study was to investigate the possible link between being born by Caesarean section and later development of asthma.

Summarised results from the study:

-- Compared to children born in the natural way (i.e. spontaneously and vaginally), children born by Caesarean section had an approximately 50 % increased risk of developing asthma.

-- Children born vaginally, but with assistance from vacuum or forceps, had a 20 % increased risk of asthma.

-- For children born between 1988 and 1998, planned Caesarean section was associated with an approximately 40 % increased risk of asthma while emergency Caesarean section was associated with a 60 % increased risk.

## Why do Caesarean sections give an increased risk of asthma?

"We found a moderately strong association between birth by Caesarean section and asthma in childhood", says doctor and research fellow Mette Christophersen Tollånes, who works for both the Norwegian Institute of Public Health and the Department of Public Health and Primary Health Care at the University of Bergen, Norway.

She is first author of the article "Caesarean Section and Risk of Severe Childhood Asthma: A Population-Based Cohort Study" which is

published in the *Journal of Pediatrics*.

Tollånes explains that there are two main theories about why Caesarean sections could cause asthma.

"The first is that babies who are born by Caesarean section are not exposed to their mothers' bacteria during birth, which is detrimental for development of the immune system. The other is that babies born by Caesarean section have more breathing problems after birth because they are less exposed to stress hormones and compression of the chest, since these mechanisms contribute to emptying the lungs of amniotic fluid. Maybe this can negatively affect lung function in the long term. The fact that emergency Caesarean section apparently has a stronger effect on the risk of asthma than planned Caesarean section cannot easily be explained by any of these theories. It is possible that there are other common causes that can induce the need for Caesarean section and the development of asthma" says Tollånes.

## Information from 1.7 million births

The authors looked at over 1.7 million births reported to the Medical Birth Registry at the Norwegian Institute of Public Health in the period 1967-1998. Multiple births and children with congenital malformations were excluded. The children were monitored until they became 18 years old or through 2002.

The study compared the proportions of children who received a basic -and/or attendance benefit for asthma from the Social Security office after spontaneous vaginal birth, assisted vaginal birth (forceps or vacuum), and Caesarean section (planned Caesarean section and emergency Caesarean section separate from and including 1988), respectively. 4 out of 1 000 children received benefits for asthma.

Source: Norwegian Institute of Public Health

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