Shoulder dystocia is an infrequent but dramatic complication of vaginal delivery. Shoulder dystocia is a delayed or difficult delivery of the fetal shoulders after the delivery of the fetal head. The risk for offspring morbidity is high and the condition may be fatal. Maternal complications are also common. Knowledge of risk factors is important to possibly prevent this fared complication of child birth.

We performed population based studies using data drawn from the Medical Birth Registry of Norway, a total of more than 2 million deliveries during the period 2005-2009. Shoulder dystocia occurred in 0.7% of all vaginal deliveries.

High offspring birthweight was the major risk factor and 75% of all cases of shoulder dystocia occurred in deliveries of offspring weighing more than 4000 grams. Parous women were at higher risk of shoulder dystocia compared to primiparous women, also after adjustment for offspring birthweight and other study factors. The positive association of birthweight with shoulder dystocia showed similar patterns across categories of parity, but at high birthweights, parous women were at higher risk of shoulder dystocia than primiparous women.

After adjustment for offspring birthweight there was a decreasing risk of shoulder dystocia with increasing pregnancy week. This finding was particularly pronounced in diabetic pregnancies. Consequently, postterm delivery is not an independent risk factor for shoulder dystocia.

A history of shoulder dystocia increased the risk of shoulder dystocia in the second delivery as compared to women without such a history, and 7.3% of women with a history of shoulder dystocia experienced a new shoulder dystocia. The combination of a history of shoulder dystocia and high offspring birthweight in the second pregnancy conferred a high risk of recurrence. If the birthweight
was low or normal, the risk of shoulder dystocia in the second delivery was low, regardless of a history of shoulder dystocia.