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*The Danish Dystocia Study*

[www.veprojekt.dk](http://www.veprojekt.dk)

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## **Dystocia in nulliparous women**

Incidence, risk indicators and some parents' and midwives' experiences  
A multi centre cohort study and a qualitative study

### **Background:**

Dystocia is the most common clinical problem in nulliparas and treatment for dystocia accounts for most interventions during labour. The literature lacks consistency in defining the length of normal labour. Accordingly there are no uniform criteria for diagnosing dystocia. This makes research results difficult to interpret. A lack of standardized and comparable data makes it impossible to monitor trends over time and to evaluate performance of care.

Some authors use the term dystocia in clinical situations that require immediate instrumental delivery while others use the term when augmentation is needed regardless of subsequent mode of delivery. In the Nordic countries the use of the term dystocia is in accordance with the latter and the primary treatment of dystocia is i.v. hormonal augmentation and/or artificial rupture of membranes.

The incidence of augmented deliveries in nulliparas in the Nordic countries is increasing and is now 43-59%. Augmentation in itself or the underlying causes for dystocia may correlate with risk of other obstetric interventions and negative perinatal outcome. The literature is inconsistent on this. Dystocia is the leading reported indication for primary caesarean delivery in the United States and it is estimated that 50-60% of all caesarean deliveries are related to dystocia. Others find lower figures and better outcome. Interventions with reference to dystocia may or may not be justified. The lower true limit of performing instrumental deliveries for dystocia is unknown, but prevention of dystocia should be emphasized. Knowledge of incidence, outcome and risk factors are essential conditions for preventive strategies.

A number of studies focus on risk factors for Caesarean delivery based on failure to progress. These studies focus on anthropometric and obstetric risk factors. Our study focuses on anthropometric-, life style-, psychological- and health care system related variables that may be associated with dystocia. The Danish Dystocia Study is studying these risk indicators and the incidence of dystocia in a large population based multi centre design using longitudinal and prospective data.

### **Objectives:**

The overall aim of the study is to describe the incidence of dystocia, to identify risk factors associated with dystocia and to elucidate parents' and midwives' experiences of prolonged labours.

The study consists of 5 sub studies (A-E). Sub study A-C are conducted in a quantitative design, sub study D and E are conducted in a qualitative design.

Aim, sub study A: To describe anthropometric and life-style factors in nulliparas and analyse these factors in relation to failure to progress during labour.

Aim, sub study B: To describe obstetric and care related factors during labour in nulliparas and to analyse these factors in relation to failure to progress during labour.

*The study is located at The Juliane Marie Centre, Research Department 3341,  
Copenhagen University Hospital, DK-2100 Copenhagen Ø, Denmark.*

*It takes place at nine obstetric departments and midwifery centers in Denmark.*

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Aim, sub study C: To describe psychological and social factors in nulliparas and to analyse these factors in relation to failure to progress during labour.

Aim, sub study D: To elucidate parents' experiences of deliveries with failure to progress and their experiences with the care given during labour.

Aim, sub study E: To describe midwives' experiences of how prolonged labour is defined, to discuss potential causes for failure to progress, to share experiences of potential preventive strategies.

### **Material, methods and analyses:**

This is a multi centre study comprising nine obstetric departments. Diagnostic criteria for dystocia were: Cervical dilatation < 2 cm assessed over 4 hours during labour's first stage or no descent during 2 hours (3 hours if epidural) in the descending phase of second stage or no progress for 1 hour during the pushing phase of second stage.

A cohort was established. Danish-speaking nulliparas  $\geq 18$  years, with no planned caesarean delivery and singleton infant were invited into the study in gestational week 33. The group was followed prospectively from gestational week 37 till the first two weeks after delivery. In case of pre- or postmature delivery, breech presentation, induction of birth or planned caesarean delivery the woman was excluded. The database comprises data from 4808 nulliparas in gestational week 37 and among these, information from the delivery is available from 2810 term nulliparas with a singleton child in cephalic presentation and spontaneous onset of labour.

Information about the cohort (sub studies A-C) was collected by questionnaires to the woman during pregnancy and after delivery and data records to be filled in by the midwives in order to secure standardized examination procedures. Questionnaires to the women comprised topics that are usually discussed between the pregnant woman and the midwife or doctor during pregnancy and after delivery, but they were more comprehensive. Validated questions that have been tested in other studies and a few newly developed questions were used. The instruments and logistics were tested in a pilot study comprising 265 women and 79 midwives. In Sub study D and E individual and focus group interviews were conducted.

Descriptive statistics and multiple regression analyses are used as estimated by crude and adjusted Odds ratios (OR). Interviews were conducted and analysed according to the Grounded Theory method.

The database comprises a large amount of clinical, psychological, social - and lifestyle information and will act as a supplement to existing databases because of the high degree of details.

### **Clinical relevance of the study:**

The study will contribute with a well-defined estimate of the incidence of dystocia in nulliparas in spontaneous labour at term with a singleton infant in cephalic presentation. Clinical practice may benefit from our results by differentiating the treatment for dystocia in nulliparas with and without the risk factors reported in this study. The knowledge of risk factors that is provided, will hopefully create a basis for hypotheses for other studies to examine the effect of preventive interventions. The sub studies D and E provide knowledge that can adjust information and care individually.

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