Authors' objectives
To evaluate the safety and effectiveness of a policy of trial of labour for women with a previous Caesarean section, giving birth in hospitals in sub-Saharan Africa.

Searching
Computerised databases such as MEDLINE (from 1970 to 1995), POPLINE, the World Health Organization library database, and Pascal were searched using various spellings of the main keywords and synonymous expressions. Studies reported in any language were considered. Referenced articles from identified studies were also examined. The included studies were limited to published reports, and no systematic attempts were made to contact the authors.

Study selection
Study designs of evaluations included in the review
All included studies were descriptive cohorts with prospective or retrospective data collection.

Studies were included if they were conducted in sub-Saharan Africa, were published after 1970, and were carried out in the context of a policy of trial of labour. Studies that involved a retrospective evaluation of hospital data without an explicit trial of labour policy were excluded.

Studies that failed to report the total number of women with a specific history of Caesarean section, or the proportion of elective procedures among repeat Caesarean sections, were not included in specific computations.

Specific interventions included in the review
A trial of vaginal labour. In none of the studies was electronic foetal monitoring reported to be routinely used.

Participants included in the review
Women with a previous Caesarean section who were undergoing a trial of labour in a hospital in sub-Saharan Africa. Deliveries were conducted in university and urban hospitals and rural centres. The reasons for previous Caesarean section included dystocia and nonrecurrent indications, such as foetal distress, antepartum haemorrhage, breech and other malpresentations.

The types of section scars included both low transverse and classic (one study only). The criteria by which women were selected for a trial of labour was similar across the studies: a single previous Caesarean section, a low transverse scar, and a single foetus in vertex presentation.

Outcomes assessed in the review
The following outcomes were assessed: the probability of vaginal delivery; the risk of morbidity (including scar dehiscence and uterine rupture) and mortality; the risk difference for specific obstetrical conditions; and perinatal mortality.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.
Data extraction
The data were extracted by two reviewers working independently, with any discrepancies being resolved by consensus. For each study, the proportion of women who delivered vaginally relative to the total number of trials of labour was calculated. Summary mortality and morbidity rates were similarly calculated.

Methods of synthesis
How were the studies combined?
The data were combined across studies using a weighted mean of the probabilities of vaginal delivery. Summary mortality and morbidity rates were similarly calculated. The 95% confidence intervals (CIs) of these summary probabilities were calculated using the methods described by Donner and Klar (see Other Publications of Related Interest no.1).

The summary risk difference for the effect of factors that could modify the probability of vaginal birth (indication for the past Caesarean section and a previous vaginal delivery) was computed, along with the 95% CI, using the DerSimonian and Laird approach (see Other Publications of Related Interest no.2).

How were differences between studies investigated?
A chi-squared test for heterogeneity was calculated for the effect between studies, of factors that could modify the probability of vaginal birth, i.e. indication for past Caesarean section and previous vaginal delivery.

Results of the review
Seventeen studies (4,500 women) were included.

Thirteen studies (3,288 women) were used to assess the probabilities of vaginal delivery according to criteria such as the proportion of women for whom Caesarean section was performed electively. Of the remaining four studies, one did not indicate the proportion of elective Caesareans, whilst three only reported outcomes for those permitted a trial of labour.

All women with a previous Caesarean section (19 studies, 4,500 women): 48% achieved a vaginal delivery. The proportion of women offered a trial of labour ranged from 37 to 97%.

The probability of a vaginal delivery for women undergoing a trial of labour (18 studies, 3,634 women) ranged from 49 to 84% (mean 69%, 95%CI: 63, 75). The proportion of women permitted a trial of labour appeared to have little impact on the probability of a vaginal birth.

The probability of a vaginal delivery according to reason for section: previous section for dystocia (8 studies, 454 women), 63% (95% CI: 51, 76); nonrecurrent reasons (8 studies, 612 women), 78% (95% CI: 72, 84). Heterogeneity across studies for risk of difference according to reason for section (dystocia or nonrecurrent) gave a chi-squared value of 23.6 (P<0.01).

The pooled risk difference showed that the probability of a vaginal delivery was lower in women who had a previous section for dystocia rather than a nonrecurrent reason (risk difference 12.4%, 95% CI: 2.1, 22.6).

Vaginal delivery was less frequent for women with no previous vaginal delivery (6 studies, 404 women), compared with those who had delivered vaginally either before or after the previous section (risk difference 10.8%, 95% CI: 5.0, 16.5).

Maternal mortality (14 studies, 4,254 women) was 1.9 per 1,000 (95% CI: 0, 43), and the uterine rupture rate was 2.1% (95% CI: 1.0, 3.2). The data available for uterine rupture did not permit a distinction to be made between scar dehiscence and true uterine rupture, as definitions varied across studies.

Perinatal mortality was 58 per 1,000 (95% CI: 38, 80). This included 36 twins. Nearly 50% of this mortality was attributable to lethal malformations or prematurity.

Authors' conclusions
In hospitals in sub-Saharan Africa, a selective policy of trial of labour after a previous Caesarean section had a success rate comparable to that observed in developed countries. The policy appeared to be relatively safe and applicable in this context.

CRD commentary
This clearly written and presented review included a search of several databases without applying language restrictions. In addition, the inclusion criteria were well-defined and the data were extracted by two researchers working independently. The discussion mentioned the following: the generalisibility of the results in view of the wide spectrum of levels of care, including university, urban and rural hospitals; the limitations resulting from all of the included studies being descriptive; and the potential bias in the maternal mortality observed due to the limited timeframe under study, and the inclusion of women with lower than average risk. Heterogeneity was assessed for two factors modifying the probability of vaginal birth.

Some relevant studies may have been omitted by limiting eligibility to published studies. Details of the methods used to select the studies for inclusion were lacking, and the validity of the studies was not assessed; this may limit the applicability of the findings. Although significant heterogeneity was found, no further investigation was undertaken.

The conclusions of the review seem to be supported by the evidence presented.

Implications of the review for practice and research
The authors state that a policy of trial of labour after a Caesarean section would appear to be especially pertinent in the social and economic context of developing countries.

Bibliographic details

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Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.