Authors' objectives
To evaluate endovaginal cervical ultrasonography as a predictor of pre-term delivery.

Searching
Two independent electronic searches (conducted in January, 1999) of MEDLINE (from 1966), EMBASE (from 1989) and Current Contents (from 1998) were conducted. The search terms included 'cervix', 'cervic*', 'ultrason*', 'ultrasound' and 'sonograph*'. Only publications in the English language publications were included.

Study selection
Study designs of evaluations included in the review
Only prospective studies were included in the review.

Specific interventions included in the review
Endovaginal cervical ultrasonography was investigated by the review. The authors excluded studies which stated that the patients were treated with specific knowledge of the results of the ultrasonography examination.

The criteria for positive test results were cervical length included the following: cervical length (from less than or equal to 18 mm to less than or equal to 50 mm); U or V shaped internal os; funnel length of greater than or equal to 3 mm, and funnel width of greater than or equal to 5 mm.

Reference standard test against which the new test was compared
The prediction of pre-term delivery was validated with reference to information pertaining to the time of delivery.

Participants included in the review
Studies that enrolled women at less than 37 weeks gestation, with intact amniotic membranes and without cervical cerclage, were eligible for the review.

Outcomes assessed in the review
The outcomes of interest included diagnostic indices such as sensitivity and specificity. The authors excluded studies for which there were insufficient data to calculate these indices.

How were decisions on the relevance of primary studies made?
Two reviewers applied the inclusion and exclusion criteria. Any disagreements were resolved by discussion.

Assessment of study quality
The authors do not state that they assessed quality.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Data were extracted on the following: patient inclusion and exclusion criteria; mean gestational age; methods for measuring the cervix; methods for assessing dilation of the os; definitions of pre-term delivery; the total number of patients; the number of true positives; the number of false positives; the number of true negatives; and the number of false negatives.
Methods of synthesis
How were the studies combined?
The studies were categorised according to the following patient groups: studies of pre-term labour; studies of early (20 to 24 weeks gestation) ultrasonography; and studies of late (27 to 32 weeks gestation) ultrasonography. A narrative synthesis was undertaken and summary receiver operating characteristic curve data were presented.

How were differences between studies investigated?
Differences between the studies and factors influencing the outcomes were discussed in the text of the review. No formal tests for homogeneity were performed.

Results of the review
Thirteen prospective studies with results for 8,463 women were included.

The optimal cut-off value for cervical length was between 18 and 30 mm for women in pre-term labour. The sensitivity of the test at this length was between 68% (with a specificity of 79%) and 100% (with a specificity of 44 to 71%), while the specificity was between 44% (with a sensitivity of 100%) and 79% (with a sensitivity of 68%).

The optimal cut-off value for cervical length was between 25 and 35 mm for women undergoing early ultrasonography during low-risk symptom-free pregnancies. The sensitivity of the test at this length was between 33% (with a specificity of 91%) and 54% (with a specificity of 86%), while the specificity was between 73% (with a sensitivity of 47%) and 91% (with a sensitivity of 33%).

The optimal cut-off value for cervical length was between 25 and 39 mm for women undergoing late ultrasonography during low-risk symptom-free pregnancies. The sensitivity of the test at this length was between 63% (with a specificity of 69%) and 76% (with a specificity of 59%), while the specificity was between 59% (with a sensitivity of 76%) and 69% (with a sensitivity of 63%).

For women in pre-term labour, the sensitivity dilation of the internal cervical os was between 70% (with a specificity of 67%) and 100% (with a specificity of 75%), while the specificity was between 54% (with a sensitivity of 77%) and 75% (with a sensitivity of 100%).

For women undergoing early ultrasonography during low-risk symptom-free pregnancies, the sensitivity dilation of the internal cervical os was between 16% (with a specificity of 99%) and 25% (with a specificity of 95%), while the specificity was between 95% (with a sensitivity of 25%) and 99% (with a sensitivity of 16%).

For women undergoing late ultrasonography during low-risk symptom-free pregnancies, the sensitivity dilation of the internal cervical os was 33% and the specificity was 92%.

Authors’ conclusions
In patients with symptoms of pre-term labour, endovaginal cervical ultrasonography appears to be an effective predictor of pre-term delivery.

CRD commentary
The review question on which the research was based is well focused and the search strategy appeared to be appropriate. Only studies reported in English were included and no attempts to locate unpublished material were described.

The process by which the review was conducted was not well described. Information on the process by which the inclusion and exclusion criteria were applied was provided. However, no such details were given on the processes involved in the data extraction or data synthesis, or on the formation of the conclusions and recommendations.

While characteristics of the included studies were presented in both the text and in tabular format, there was no formal assessment of the quality of the studies. This might have improved the review.
The conclusions, and the recommendations based on them, appear to exaggerate the benefits of the test given the results presented in the review.

**Implications of the review for practice and research**

Practice: The authors state that the combination of both tests may be used to detect patients at risk of pre-term delivery with even greater sensitivity, and either test alone may be used to select appropriate management strategies for the various high-risk populations that are identified.

Research: The authors did not state any implications for further research.

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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.