

# Classification of Caesarean Sections in Canada: The Modified Robson Criteria

This committee opinion has been prepared by the Maternal Fetal Medicine Committee, reviewed by the Clinical Practice Obstetrics Committee, and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada.

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## Abstract

**Objective:** To advocate for the use of a common classification system for Caesarean section across Canada.

**Options:** A variety of clinical parameters for classification were considered.

**Outcomes:** Consideration of a common system for classifying Caesarean section.

**Evidence:** Studies published in English from 1976 to December 2011 were retrieved through searches of Medline and PubMed, using appropriate controlled vocabulary and key words (Caesarean section, vaginal birth after Caesarean, classification). Results were restricted to systematic reviews, randomized control trials/controlled clinical trials, and observational studies. Grey (unpublished) literature was identified through searching the web sites of health technology assessment and health technology assessment-related agencies, clinical practice guideline collections, clinical trial registries, and the web sites of national and international medical specialty societies.

**Values:** The studies reviewed were classified according to criteria described by the Canadian Task Force on Preventive Health Care, and the recommendation for practice ranked according to this classification (Table 1).

**Sponsors:** The Society of Obstetricians and Gynaecologists of Canada.

## Recommendation

Modified Robson criteria should be used to enable comparison of Caesarean section rates and indications. (III-B)

**Key Words:** Caesarean section, vaginal birth after Caesarean, VBAC, classification

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**Table 1. Key to evidence statements and grading of recommendations, using the ranking of the Canadian Task Force on Preventive Health Care**

Quality of evidence assessment*	Classification of recommendations†
I: Evidence obtained from at least one properly randomized controlled trial	A. There is good evidence to recommend the clinical preventive action
II-1: Evidence from well-designed controlled trials without randomization	B. There is fair evidence to recommend the clinical preventive action
II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group	C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category	D. There is fair evidence to recommend against the clinical preventive action
III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees	E. There is good evidence to recommend against the clinical preventive action
	L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

\*The quality of evidence reported in these guidelines has been adapted from The Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.<sup>14</sup>

†Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.<sup>14</sup>

## TRENDS IN CAESAREAN SECTION RATES

The Caesarean section rate has been increasing during the last 50 years.<sup>1</sup> The rate was 5% in the 1940s and 1950s and remained unchanged for 10 to 15 years. In the late 1970s, the rate rose to 15% and remained unchanged for the next 10 years. In the last decade there has been a dramatic increase in the Caesarean section rate worldwide, which now exceeds 30% in some regions.<sup>1</sup> The latest Statistics Canada Caesarean section rate published in 2009 is 26.8%, with provincial rates ranging from 20.2% in Manitoba to 31.5% in Newfoundland and Labrador.<sup>2</sup>

Although several guidelines, including those issued by the World Health Organization<sup>3</sup> and the United States Healthy People 2000 initiative,<sup>4</sup> suggest that the optimal Caesarean section rate is 15%, there seems to be little effect on the current Caesarean section rate.

## THE CURRENT METHODS OF ASSESSING CAESAREAN SECTION RATES

Currently the heterogeneity of Caesarean section classification does not allow valid comparisons. Specifically, there is a lack of clarity regarding operative indications and relevant obstetric history.

The classification of Caesarean sections should

1. Be relevant to obstetric care providers.
2. Include all Caesarean sections.

3. Be easily derived from current obstetric databases.
4. Have mutually exclusive criteria so each Caesarean section falls into a single class.
5. Allow detailed analysis without excessive complexity.
6. Be applicable for local, regional, national, and international use.

A common classification system allows reflection and research at the local, regional, and national levels to better guide future care. Michael Robson, MD, has developed such a classification system.<sup>5,6</sup> This system's criteria are widely used in the United Kingdom, Ireland, and Scandinavia and in many centres worldwide,<sup>7-10</sup> and this classification system has already been used in Canada.<sup>11,12</sup> A recent meta-analysis comparing different classifications of Caesarean section concluded that the 10-group Robson classification was optimal.<sup>13</sup> A modification to the Robson criteria is proposed for Canadian use (Table 2). This modification includes sub-classification of women having Caesarean section after spontaneous onset of labour, after induction of labour, and before labour.

### Recommendation

Modified Robson criteria should be used to enable comparison of Caesarean section rates and indications. (III-B)

**Table 2. The modified Robson criteria**

Group	Description
1	Nullipara, singleton cephalic, $\geq 37$ weeks, spontaneous labour
2	Nullipara, singleton cephalic, $\geq 37$ weeks A: Induced B: Caesarean section before labour
3	Multipara, singleton cephalic, $\geq 37$ weeks, spontaneous labour
4	Multipara, singleton cephalic, $\geq 37$ weeks A: Induced B: Caesarean section before labour
5	Previous Caesarean section, singleton cephalic, $\geq 37$ weeks A: Spontaneous labour B: Induced labour C: Caesarean section before labour
6	All nulliparous breeches A: Spontaneous labour B: Induced labour C: Caesarean section before labour
7	All multiparous breeches (including previous Caesarean section) A: Spontaneous labour B: Induced labour C: Caesarean section before labour
8	All multiple pregnancies (including previous Caesarean section) A: Spontaneous labour B: Induced labour C: Caesarean section before labour
9	All abnormal lies (including previous Caesarean section but excluding breech) A: Spontaneous labour B: Induced labour C: Caesarean Section before labour
10	All singleton cephalic, $\leq 36$ weeks (including previous Caesarean section) A: Spontaneous labour B: Induced labour C: Caesarean section before labour

## SUMMARY

A common classification of Caesarean section rates and indications allows evaluation and comparison of the contributors to the Caesarean section rate and their impact. It also allows comparison between institutions, regions, and countries that adopt this classification.

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### **LIMITATIONS OF THE MODIFIED ROBSON CRITERIA**

1. This classification does not allow the analysis of Caesarean section by demand and indicated Caesarean section for specific conditions (e.g., placenta previa).
2. This classification does not account for pre-existing medical, surgical or fetal disease; indications for and methods used for induction of labour; and degrees of prematurity, all of which may influence the rate of Caesarean section.
3. Group 5 includes 2 quite different groups: (1) those who planned or needed a repeat Caesarean section, and (2) those who attempted VBAC and required Caesarean section.

This classification system should be considered flexible. Interested parties may choose to further sub-classify the major categories to address specific research and clinical issues.