

BIRTH AFTER PREVIOUS CAESAREAN SECTION

DEFINITION

A woman with a uterine scar has the option of planned vaginal birth (VBAC) or an elective repeat caesarean section (ERCS).

Factors to consider include: the material risks in the current pregnancy associated with each, plans for further childbearing, the likelihood of achieving a vaginal birth and other aspects of individual importance.

The decision is one for the woman to make in consultation with her carers who have an obligation to provide her with the relevant information.

This area of practice suffers from misleading terminology. The following terms are recommended and adapted from the National Institutes of Health Consensus Statement (2010)¹:

- **Trial of labour (TOL):** A plan to birth vaginally in a woman who has had a previous caesarean section.
- **Vaginal birth after caesarean section (VBAC):** Vaginal birth following a TOL.
- **Elective repeat caesarean section (ERCS):** Planned caesarean section in a woman who has had one or more prior caesarean sections, whether or not the caesarean section occurred at a scheduled time

BACKGROUND

There is widespread public and professional concern regarding the increasing proportion of births by caesarean section, with **increasing rates of primary caesarean sections** leading to a larger proportion of women presenting with a history of prior caesarean. A pregnant woman with a uterine scar has the option of choosing a planned trial of labour (TOL) or an elective repeat caesarean section (ERCS).²

It is essential that women make an **informed choice** regarding whether to plan for a vaginal birth (VBAC) or elective caesarean (ERCS). It is recommended that the woman, obstetrician and Lead Maternity Carer (LMC) discuss the benefits and risks of both options for the woman and her baby, supported by the provision of appropriate literature.

It is further recommended that all women who have experienced a prior caesarean birth are referred to the newly established '**Planned Birth after Caesarean Section**' clinic held at Christchurch Women's Hospital to discuss plans for this birth with the obstetric and midwifery team. LMC's are encouraged to attend these appointments with the woman in order to take part in this decision making process.

Previous caesarean birth is a 'consultation condition' as per Section 88 Referral Guidelines, which states '*The LMC must recommend to the woman that a consultation with a specialist is warranted given that her pregnancy, labour or birth is or may be affected by the condition. Where a consultation*

*occurs, the decision regarding on-going care, advice to the LMC on management, and any recommendation to subsequently transfer care must involve a three-way conversation between the specialist, the LMC and the woman.*³

Referrals should be made on BAC Referral form C210043 (Ref.6711) – Appendix 1

MANAGEMENT – ANTENATAL

HOW SHOULD WOMEN BE COUNSELLED IN THE ANTENATAL PERIOD?

Women with a prior history of one uncomplicated lower segment caesarean section, in an otherwise uncomplicated pregnancy at term, with no contraindications to vaginal birth, should be **encouraged to aim for planned VBAC**. This antenatal counselling should be clearly documented in the woman's notes, following discussion with the woman and her LMC. Ideally this should occur in the first half of pregnancy.

Women should receive an information leaflet 'Birth after Caesarean Section' Ref.6708 with this consultation.

A **documented plan** for mode of birth should be agreed between the woman, the obstetrician and her LMC before the expected/planned birth date (ideally **by 36 weeks**). This should include a plan for the event of labour starting prior to a scheduled date for ERCS.

Women considering their options for birth following a single previous lower segment caesarean section, should be informed that, overall according to the international literature, their chances of **VBAC** are **>70%**^{4, 5, 6}.

A number of factors are associated with VBAC, including; **previous vaginal birth**, particularly previous VBAC, being the **single best predictor** for VBAC and is associated with an approximately 87–90% planned VBAC rate.^{7, 8, 9}

Risk factors for requiring caesarean section during TOL are:

1. Induced labour
2. No previous vaginal birth
3. Body mass index (BMI) > 30¹⁰⁻¹²

When all three of these factors are present OR

4. The woman has had a previous caesarean section for labour dystocia⁹, VBAC is achieved in only 40% of cases.⁹

Women with a prior history of **two** uncomplicated low transverse caesarean sections, in an otherwise uncomplicated pregnancy at term, with no contraindication for vaginal birth, who have been fully informed by a consultant obstetrician, may be considered suitable for planned TOL. Observational studies have shown VBAC rates of 62-75%¹³⁻¹⁶ in this situation.

WHAT ARE THE CONTRAINDICATIONS TO TOL?

Women with a **prior history of classical caesarean section** are recommended to give birth by ERCS, as there is uncertainty to the safety and efficacy of planned TOL in this situation.

Women with a previous uterine incision other than low transverse caesarean section incision who wish to consider a vaginal birth should be assessed by a consultant obstetrician with full access to the details of **the previous surgery**.

There is limited evidence on whether maternal or neonatal outcomes are significantly influenced by the number of prior caesarean births or type of prior uterine scar. Nonetheless, due to higher absolute risks of uterine rupture or unknown risks, planned TOL is contraindicated in women with:

- Previous uterine rupture – risk of recurrent rupture is unknown.^{17,18}
- Previous high vertical classical caesarean section (2-9% risk of uterine rupture) where the uterine incision has involved the whole length of the uterine corpus.^{17,18}
- Three or more previous caesarean deliveries (reliable estimate of risks of rupture unknown).

WHAT ARE THE SPECIFIC BENEFITS AND RISKS OF TOL?

Women considering the options for birth after a previous caesarean should be informed that **ERCS does increase the risk of serious complications in future pregnancies** which includes placenta praevia, placenta accreta and hysterectomy.²¹⁻²⁶

Women considering the options for birth after caesarean section should be informed that planned TOL carries a **risk of uterine rupture of $\leq 0.5\%$ after 1 caesarean¹⁹** (99.5% no rupture) and $<1\%$ following 2 caesareans²⁴. VBAC decreases the caesarean related risks for future pregnancies.

PLANNED TOL IN SPECIAL CIRCUMSTANCES

How should a woman be counselled in the context other obstetric risk factors?

Women who are **preterm** and considering the options for birth after a previous caesarean should be informed that planned preterm TOL has similar VBAC rates to planned term VBAC but with a lower risk of uterine rupture.²⁷

A **cautious** approach is advised when considering planned VBAC in women with **twin gestation^{28,29}**, **fetal macrosomia^{7,17}** and **short interdelivery interval** of less than 2 years³⁰⁻³², as there is uncertainty in the safety and efficacy of planned TOL in such situations.

INTRAPARTUM

INTRAPARTUM SUPPORT AND INTERVENTION DURING PLANNED TOL

Where and how should TOL be managed?

Women should be advised that planned TOL should be conducted in a **secondary/tertiary facility**. Women should be advised to have **close electronic fetal monitoring (EFM)** following the **onset of uterine contractions** for the duration of labour. An abnormal cardiotocograph (CTG) is the most consistent finding in uterine rupture and is present in 55–87% of these events.³³

There is no requirement for a birthing woman to have an IV line placed for the indication of previous CS alone, as this can be inserted rapidly if and when required.

In the event that a woman **declines** close EFM during TOL and following appropriate counselling, a three-way conversation should ensue to negotiate what form of monitoring the woman will accept. Counselling is to include the **risk of 'silent' uterine rupture**, resulting in an increased risk of cerebral palsy and fetal demise secondary to a delay in diagnosis of uterine rupture. As a minimum, intermittent auscultation (I-A) is suggested at 15 minute intervals during the first stage and I-A following every contraction in the second stage of her TOL.

Also refer to the [Fetal Heart Monitoring Guideline](#) (GLM0010)

In the unlikely event that a woman presents in advanced labour at a **rural or primary unit** and the assessment is that it is unsafe to transfer to the secondary/tertiary facility, **intermittent auscultation (I-A, as above)** is the monitoring of choice. The use of continuous CTG in these settings is not recommended.

Continuous intrapartum (one-to-one) midwifery care is beneficial to enable prompt identification and management of uterine scar rupture.

INDUCTION AND AUGMENTATION

How should women with a previous caesarean birth be advised in relation to induction of labour or augmentation?

Women should be informed of the **2-3-fold increased risk (overall risk of 1.5%)** of uterine rupture and around a 1.5-fold increased risk (0.75%) of caesarean section in induced and/or augmented TOL compared with spontaneous labours.³⁴

Women should be informed that there is potentially a higher risk of uterine rupture with induction of labour with prostaglandins versus non-prostaglandin methods. The **current evidence is inconclusive**, with the National Institute of Child Health and Development (NICHD)¹⁶ study prostaglandin induction compared with non-prostaglandin induction incurred a non-significantly higher risk of uterine rupture of 1.4% versus 0.9%, whereas in an analysis of nationally collected data from Scotland³⁵, prostaglandin induction compared with non-prostaglandin induction was associated with a statistically significantly higher uterine rupture risk of 0.9% versus 0.3%

There should be **detailed serial cervical assessments**, preferably by the same person, for both augmented and spontaneous TOL, to ensure that there is adequate cervical progress, thereby allowing the TOL to continue.

Discussion is recommended regarding the:

- Decision to induce
- Method chosen
- Decision to augment with oxytocin
- Time intervals for serial vaginal examination
- Selected parameters of progress that would necessitate and advise on discontinuing TOL

The above should be discussed and agreed with the woman and her LMC and a consultant obstetrician, either directly, or via the obstetric registrar who has discussed the specific situation with the consultant.

How should augmentation of labour be conducted?

The additional risks in augmented TOL mean that:

- Although **augmentation** is not contraindicated it should only be preceded by detailed obstetric assessment, maternal counselling and by a **consultant-led decision**.
- **Oxytocin** augmentation should be titrated such that it should not exceed the maximum rate of contractions of four in 10 minutes; the ideal **contraction frequency** would be **three to four in 10** minutes.³⁵
- **Detailed serial cervical assessments**, preferably by the same person, are necessary to show adequate cervical progress, thereby allowing augmentation to continue.

MANAGEMENT OF SUSPECTED SCAR RUPTURE

Early diagnosis of uterine scar rupture followed by expeditious laparotomy and resuscitation is essential to reduce associated morbidity and mortality in mother and infant. There is no single pathognomonic clinical feature that is indicative of uterine rupture but the presence of any of the following peripartum should raise the concern of the possibility of this event and necessitate full clinical evaluation:³⁶

- Abnormal CTG
- Severe abdominal pain, especially if persisting between contractions
- Chest pain or shoulder tip pain, sudden onset of shortness of breath
- Acute onset scar tenderness
- Abnormal vaginal bleeding or haematuria
- Cessation of previously efficient uterine activity
- Maternal tachycardia, hypotension or shock
- Loss of station of the presenting part

The diagnosis is ultimately confirmed at emergency caesarean section or postpartum laparotomy.

DOCUMENTATION

[Fetal Heart Monitoring Guideline \(GLM0010\)](#)
BAC Referral Form (Ref.6711)

REFERENCES

1. National Institutes of Health Consensus Development Conference Statement: *Vaginal Birth After Cesarean: New Insights*. March 8–10, 2010.
2. Planned vaginal birth after caesarean section (trial of labour) (C-Obs 38)
http://www.ranzcog.edu.au/component/docman/doc_view/971-c-obs-38-planned-vaginal-birth-after-caesarean-section-trial-of-labour-.html
3. Ministry of Health. 2012. Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines). Wellington: Ministry of Health.
4. Guise JM, Berlin M, McDonagh M, Osterweil P, Chan B, Helfand M. Safety of vaginal birth after cesarean: a systematic review. *Obstet Gynecol* 2004;103:420–9.
5. Chauhan SP, Martin JN, Jr., Henrichs CE, Morrison JC, Magann EF. Maternal and perinatal complications with uterine rupture in 142,075 patients who attempted vaginal birth after caesarean delivery: a review of the literature. *Am J Obstet Gynecol* 2003; 189:408–17.
6. Mozurkewich EL, Hutton EK. Elective repeat cesarean delivery versus trial of labor: a meta-analysis of the literature from 1989 to 1999. *Am J Obstet Gynecol* 2000;183:1187–97.
7. Landon MB, Leindecker S, Spong CY, Hauth JC, Bloom S, Varner MW, *et al*. The MFMU Cesarean Registry: factors affecting the success of trial of labor after previous cesarean delivery. *Am J Obstet Gynecol* 2005;193:1016–23.
8. Smith GC, White IR, Pell JP, Dobbie R. Predicting caesarean section and uterine rupture among women attempting vaginal birth after prior caesarean section. *PLoS Med* 2005;2:871–8.
9. Gyamfi C, Juhasz G, Gyamfi P, Stone JL. Increased success of trial of labor after previous vaginal birth after cesarean. *Obstet Gynecol* 2004;104:715–19.
10. Hibbard JU, Gilbert S, Landon MB, Hauth JC, Leveno KJ, Spong CY, *et al*. Trial of labor or repeat cesarean delivery in women with morbid obesity and previous cesarean delivery. *Obstet Gynecol* 2006;108:125–33.
11. Goodall PT, Ahn JT, Chapa JB, Hibbard JU. Obesity as a risk factor for failed trial of labor in patients with previous caesarean delivery. *Am J Obstet Gynecol* 2005;192:1423–6.
12. Juhasz G, Gyamfi C, Gyamfi P, Tocce K, Stone JL. Effect of body mass index and excessive weight gain on success of vaginal birth after cesarean delivery. *Obstet Gynecol* 2005;106:741–6.
13. Macones GA, Cahill A, Pare E, Stamilio DM, Ratcliffe S, Stevens E, *et al*. Obstetric outcomes in women with two prior caesarean deliveries: is vaginal birth after cesarean delivery a viable option? *Am J Obstet Gynecol* 2005; 192:1223–8.
14. Spaans WA, van der Vliet LM, Roell-Schorer EA, Bleker OP, van Roosmalen J. Trial of labour after two or three previous caesarean sections. *Eur J Obstet Gynecol Reprod Biol* 2003; 110:16–19.
15. Caughey AB, Shipp TD, Repke JT, Zelop CM, Cohen A, Lieberman E. Rate of uterine rupture during a trial of labor in women with one or two prior caesarean deliveries. *Am J Obstet Gynecol* 1999;181:872–6.
16. Miller DA, Diaz FG, Paul RH. Vaginal birth after cesarean: a 10-year experience. *Obstet Gynecol* 1994; 84:255–8.
17. Guise JM, Hashima J, Osterweil P. Evidence-based vaginal birth after Caesarean section. *Best Prac Res Clin Obstet Gynaecol* 2005;19:117–30.

18. Turner MJ. Uterine rupture. *Best Prac Res Clin Obstet Gynaecol* 2002; 16:69–79.
19. Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, *et al.* Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. *N Engl J Med* 2004;351:2581–9.
20. Landon MB, Spong CY, Thom E, Hauth JC, Bloom SL, Varner MW, *et al.* Risk of uterine rupture with a trial of labor in women with multiple and single prior cesarean delivery. *Obstet Gynecol* 2006;108:12–20.
21. Ananth CV, Smulian JC, Vintzileos AM. The association of placenta previa with history of caesarean delivery and abortion: a metaanalysis. *Am J Obstet Gynecol* 1997;177:1071–8.
22. Miller DA, Chollet JA, Goodwin TM. Clinical risk factors for placenta previa–placenta accreta. *Am J Obstet Gynecol* 1997;177:210–214.
23. Makoha FW, Felimban HM, Fathuddien MA, Roomi F, Ghabra T. Multiple cesarean section morbidity. *Int J Gynaecol Obstet* 2004;87:227–32.
24. Wu S, Kocherginsky M, Hibbard JU. Abnormal placentation: twenty-year analysis. *Am J Obstet Gynecol* 2005;192:1458–61.
25. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, *et al.* Maternal morbidity associated with multiple repeat cesarean deliveries. *Obstet Gynecol* 2006;107:1226–32.
26. Impact of multiple cesarean deliveries on maternal morbidity: a systematic review. Marshall NE, Fu R, Guise JM. *Am J Obstet Gynecol*. 2011 Sep;205(3):262.e1-8. Epub 2011 Jun 15
27. Durnwald CP, Rouse DJ, Leveno KJ, Spong CY, MacPherson C, Varner MW, *et al.* The Maternal–Fetal Medicine Units Cesarean Registry: safety and efficacy of a trial of labor in preterm pregnancy after a prior cesarean delivery. *Am J Obstet Gynecol* 2006;195:1119–26.
28. Varner MW, Leindecker S, Spong CY, Moawad AH, Hauth JC, Landon MB, *et al.* The Maternal–Fetal Medicine Unit cesarean registry: trial of labor with a twin gestation. *Am J Obstet Gynecol* 2005;193:135–40.
29. Cahill A, Stamilio DM, Pare E, Peipert JP, Stevens EJ, Nelson DB, *et al.* Vaginal birth after caesarean (VBAC) attempt in twin pregnancies: is it safe? *Am J Obstet Gynecol* 2005;193:1050–5.
30. Bujold E, Mehta SH, Bujold C, Gauthier RJ. Interdelivery interval and uterine rupture. *Am J Obstet Gynecol* 2002;187:1199–202.
31. Esposito MA, Menihan CA, Malee MP. Association of interpregnancy interval with uterine scar failure in labor: a case–control study. *Am J Obstet Gynecol* 2000;183:1180–3.
32. Shipp TD, Zelop CM, Repke JT, Cohen A, Lieberman E. Interdelivery interval and risk of symptomatic uterine rupture. *Obstet Gynecol* 2001;97:175–7.
33. Guise JM, McDonagh MS, Osterweil P, Nygren P, Chan BK, Helfand M. Systematic review of the incidence and consequences of uterine rupture in women with previous caesarean section. *BMJ* 2004;329:19–25.
34. Ofir K, Sheiner E, Levy A, Katz M, Mazor M. Uterine rupture: risk factors and pregnancy outcome. *Am J Obstet Gynecol* 2003; 189:1042–6.
35. Smith GC, Pell JP, Pasupathy D, Dobbie R. Factors predisposing to perinatal death related to uterine rupture during attempted vaginal birth after caesarean section: retrospective cohort study. *BMJ* 2004;329:375.
36. Royal College of Obstetricians and Gynaecologists. *Induction of labour*. Evidence-based Clinical Guideline Number 9. London: RCOG Press; 2001.
37. Turner MJ. Uterine rupture. *Best Prac Res Clin Obstet Gynaecol* 2002;16:69–79.

Date Issued: November 2018

Review Date: November 2021

Written/Authorised by: Maternity Guidelines Group

Review Team: Maternity Guidelines Group

Birth After Previous Caesarean Section

Maternity Guidelines

Christchurch Women's Hospital

Christchurch New Zealand

Canterbury

District Health Board

Te Poari Hauora o Waitaha

CHRISTCHURCH WOMEN'S HOSPITAL
MATERNITY SERVICES

PATIENT DETAILS	
SURNAME	NHI
FIRST NAME	DOB
ADDRESS	POSTCODE
<i>(or affix patient label)</i>	
PHONE: HOME (.....)	MOBILE:
GP:	

BAC Clinic Referral

B
A
C

C
L
I
N
I
C

R
E
F
E
R
R
A
L

Referral date									
Referrer	Name:	Designation:							
	Phone: ()	Mobile:	Fax:						
Maternity Booking form	<input type="checkbox"/> Attached <input type="checkbox"/> Previously sent								
MATERNITY STATUS									
Gravida:	Parity:	LMP:	Gestation age at referral: weeks						
EDD by LMP:		EDD by scan:							
Height:	Weight:	BMI:							
Ethnicity:	<input type="checkbox"/> NZ European <input type="checkbox"/> Māori <input type="checkbox"/> Samoan <input type="checkbox"/> Cook Island Māori <input type="checkbox"/> Tongan <input type="checkbox"/> Niuean <input type="checkbox"/> Chinese <input type="checkbox"/> Indian <input type="checkbox"/> Other such as Dutch, Japanese, Tokelauan <i>please state:</i>								
PREVIOUS OBSTETRIC HISTORY									
Date	Place	Gest.	Spont./ Induced	Labour duration	Type of birth	Birth weight	A/SB	Gender	Comments
FURTHER INFORMATION / COMMENTS / CLINICAL CONCERNS									
.....									

FAX FORM TO: external (03) 364 4301 internal 85301

The information contained in this facsimile message is confidential information and may also be legally privileged. It is intended only for the individual or entity named above. If you are not the intended recipient, any use, review, dissemination, distribution or copying of this document is prohibited. If you have received this document in error, please notify us by telephone (call collect to the person named) and destroy the original message.

FOR OFFICE USE ONLY
 Maternity Booking form details entered into Caresys

C
2
1
0
0
4
3