

Vaginal Birth After Caesarean (VBAC)

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1. Purpose of guideline

This guideline establishes the best practice care of women with previous caesarean, whether having a vaginal birth after caesarean (VBAC) or an elective repeat caesarean section (ERCS). It is to ensure women are well-informed of the main reason for their previous caesarean, the risks and benefits of each mode of birth in her current pregnancy, if she is clinically eligible for VBAC, and her individualized likelihood of VBAC. The purpose of this guideline is also to support a women's choice of mode of birth, across the organisation, and at each time point in her care (ante partum and during labour).

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2. Background

The New Zealand Guidelines Group (NZGG) (2004) recommends that the decision to have a trial of labour (TOL) or ERCS be made by the individual woman and her lead maternity carer (LMC), after informed discussion of the options. RANZCOG (2010) recommends that women with previous caesarean have the option of choosing an elective caesarean section or to attempt vaginal birth. The NICE guidelines (2004) state that the decision about mode of birth should consider maternal preferences and priorities, and include general discussion of the risks and benefits of repeat caesarean section and vaginal birth after caesarean. They further state that women who want vaginal birth after caesarean should be supported.

The following brief review of (a) maternal and (b) perinatal outcomes is based on a moderate grade of evidence from the National Institute of Health (NIH). There is no high quality evidence as there are no randomized controlled trials comparing women having TOL to women having ERCS. Many outcomes have insufficient or poor evidence and are not included in this guideline. The third section (c) provides local data.

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a. Maternal outcomes

The best maternal outcomes are associated with VBAC, followed by ERCS, followed by unsuccessful TOL.

There is an increased risk of uterine rupture in women who have TOL compared to ERCS. Uterine rupture occurred in 3/1000 women undergoing TOL. The risk for women undergoing TOL at ≥ 37 weeks gestation was 8/1000. The risk for women with 2 previous caesarean sections was higher (16/1000). The risk for women with a previous vaginal birth was lower (0.6/1000).

A retrospective population-based Australian study of women with one previous caesarean section having TOL (published since the NIH statement) showed a rate of complete uterine rupture of 1.3/1000.

It is unclear whether oxytocin augmentation of labour in women in spontaneous labour increases the risk of uterine rupture. The NIH statement concluded that there

does not appear to be an increased risk of uterine rupture with oxytocin augmentation of spontaneous labour. However, the Australian study found an increased risk of uterine rupture in women with spontaneous labour augmented with oxytocin (19/1000 compared to 1.5/1000 without oxytocin).

The combination of prostaglandins for priming of unfavourable cervix, and subsequent use of oxytocin infusion for induction/augmentation of labour, appears to be associated with significantly increased risk of uterine rupture. Risk of uterine rupture with oxytocin induction of labour appears to increase in a dose-response manner.

The risk of hysterectomy (about 2/1000) and of blood transfusion (about 10/1000) was not significantly different between women who had TOL compared with ERCS.

The major benefit of TOL is the 74% likelihood of vaginal birth and avoidance of multiple caesarean sections, and the associated complications. For example, there is an association between caesarean section and abnormal placental position and fetal growth in subsequent pregnancies. The incidence of placenta praevia and placenta accreta is doubled in women with two previous caesarean sections compared to one previous (17 vs. 9/1000 for praevia, and 6 vs. 3/1000 for accreta, respectively). In addition, there is twice the risk of hysterectomy in women with one previous caesarean (compared to none), and there is an 18-fold higher risk in women with \geq two previous caesarean sections.

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b. Perinatal outcomes

The risk of perinatal mortality was low for women undergoing TOL (1.3/1000 live births, compared to 0.5/1000 for women having ERCS).

This can be put in perspective by comparing perinatal mortality rates in other groups of women:

- 0.3/1000 in Parkland Hospital in the US (1998-2006) for nulliparous women with uncomplicated pregnancies at term in spontaneous labour
- 3.4/1000 in the Netherlands (2007-2008) for nulliparous women at term with planned vaginal birth
- 7.4/1000 in New Zealand (2008) for all women

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c. Local data

In Auckland District Health Board (ADHB) Women's Health in 2009, 10% (773) of women who gave birth were parity 1 with prior caesarean. Of these, 57% had an ERCS and 43% had a TOL. Of the women who had a TOL, 59% had a vaginal birth. The rate was lower in women who had induction of labour (51%) compared to women who had spontaneous labour (66%). The vaginal birth rate among all women with previous caesarean was 22.5%.

A local 2009 audit of 443 women who had TOL found 1 case of complete uterine rupture. This occurred in a woman with one previous LSCS induced at 37 weeks for fetal growth restriction.

Recommendations from the Women's Health Annual Report Day included:

- improving counselling and documentation around discussion of VBAC
- increasing the proportion of women with one previous caesarean who have vaginal birth

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3. Antepartum consultation and advice for women with previous caesarean

Offer referral for consultation with a specialist obstetrician at the Positive Birth after Caesarean (PBAC) Clinic, preferably prior to 20 weeks gestation. If unable to refer prior to 25 weeks, then refer for consultation at any of the general maternity clinics, preferably prior to 36 weeks. Referral should be made on the standardised PBAC Clinic Referral Form (see Associated ADHB documents) to the PBAC clinic. The same form should also be used to refer to the general maternity clinic if over 25 weeks.

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a. The Positive Birth after Caesarean (PBAC) Clinic

At the PBAC Clinic woman should be seen by a midwife and an obstetrician to review her caesarean experience, values, and motivations for method of delivery. A balanced presentation of the risks and benefits of VBAC and ERCS should be provided, using the Patient Information Pamphlet (see Associated ADHB documents) and vaginal birth should be promoted.

A plan of management will be discussed and documented in the chart:

- VBAC, but re-consider ERCS if delivery needs to be expedited
- ERCS at or beyond 39 weeks, but re-consider VBAC if spontaneous labour occurs before the scheduled caesarean

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b. For women planning a vaginal birth after caesarean (VBAC)

The following information should be provided:

- Individualized likelihood of VBAC and risk of uterine rupture
- Reassurance of safety of VBAC at ADHB, a centre which has ready access to obstetric, paediatric, anaesthetic, operating theatre and resuscitation services (including blood bank) should complications arise
- For women with high BMI, advise limiting gestational weight gain
- Ongoing clinical assessment of fetal size, and consider ultrasound around 32-34 weeks for estimated fetal weight
- Advisability of admission to hospital once in established labour

- Importance of intensive monitoring of maternal and fetal well-being in labour to identify symptoms and signs of uterine rupture
- Necessity of emergency caesarean section if concerns about progress of labour or about fetal well-being
- Previous caesarean is a risk factor for post-partum haemorrhage, and to reduce this risk, active management of the third stage is advised
- Specialized antenatal classes to be offered in second half of pregnancy
- “Stretch and sweep” to be offered at 40 weeks gestation to reduce need for post-dates induction of labour

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c. Factors associated with increased risk of uterine rupture and / or decreased chance of VBAC

- Previous classical caesarean section
- More than one previous caesarean
- Inter-delivery interval < 18 months
- Morbid maternal obesity
- Infant weight > 4000g
- No previous vaginal birth
- Induction of labour

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4. Safe planning of VBAC

a. Early labour

When in early labour, the woman is to call her midwife in order to be assessed either by phone, at her home, or in Women’s Assessment Unit (WAU). The Midwives in Labour and Birthing Suite (LBS) taking these phone calls are to consult with Clinical Charge Midwife (CCM), and:

- Encourage mobilization, fluids, and relaxation
- Offer pain relief as needed
- Provide support and reassurance
- Assess woman and her baby as needed

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b. Established labour

Once in established labour:

- admit to Labour and Birthing Suite (delivery unit or DU)
- Leur and bloods (G&S, FBC)
- Consult with DU Registrar on call or Private Obstetrician
- DU Registrar on call to notify SMO on call for DU
- Notify CCM of the admission in a timely manner
- Regular maternal observations

- Monitor for signs and symptoms of uterine rupture (see below)
- Continuous fetal heart monitoring is recommended
- Clear fluids only
- Epidural is not contraindicated for pain relief in labour
- Regular assessment of progress (at least 4 hourly in first stage for cervix dilation and hourly in second stage for descent of presenting part)
- Active management of the third stage is recommended

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c. Signs and symptoms of uterine rupture

- Abnormal CTG (most common, most reliable)
- Vaginal bleeding
- Abdominal pain
- Cessation of contractions
- Elevation of presenting part on vaginal exam
- Haematuria
- Maternal cardiovascular instability

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d. Women who planned elective repeat caesarean section (ERCS) but present in spontaneous labour

- Leur and bloods (G&S, FBC)
- Nil by mouth
- Consult with DU Registrar on call or Private Obstetrician
- DU Registrar on call to notify SMO on call for DU
- Offer woman information about VBAC given new clinical circumstances
- Women in spontaneous labour at less than 40 weeks gestation have a high likelihood of VBAC, and low incidence of uterine rupture
- Operative risks with emergency caesarean section in labour are higher compared to elective caesarean
- Support woman's choice to change plan to VBAC, or proceed with ERCS as soon as resources available
- Ensure continuous fetal monitoring and adequate analgesia regardless of final decision re: method of delivery
- Inform scheduler that woman delivered so that she can remove woman from elective caesarean list

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e. Augmentation of labour in women with previous caesarean

Oxytocin for augmentation of labour should be used with caution. Specifics of oxytocin infusion should be discussed by the midwife looking after the woman with the DU team on call or Private Obstetrician. Rates higher than 15 milli units/min should be avoided.

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f. Unsuccessful trial of labour (TOL)

Notify the Anaesthetics Registrar and NICU of need for caesarean. Complete operative note to include main reason for caesarean and advice for further pregnancies. Assess venous thromboembolism risk and manage appropriately. The Obstetrician who performed the caesarean is to review the events with the woman prior to being discharged from hospital.

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5. Management of women with previous caesarean who require expedited delivery (induction of labour)

Induction of labour should be undertaken only if the benefits of induction (for maternal or fetal reasons) outweigh the risks of induction (general risks of induction, plus increased risk of uterine rupture and lower likelihood of VBAC). It is advisable that discussion re: timing and method of induction, and to offer ERCS as an alternative to induction, occur at the consultant level. Counselling should be well documented.

Support the woman's choice to proceed with induction and TOL, or to change plan to ERCS as soon as resources available.

The combination of prostaglandins and oxytocin infusion should be avoided. Consider mechanical means of priming unfavourable cervix instead of prostaglandins. Specifics of oxytocin infusion should be discussed by the midwife looking after the woman with the DU team on call or Private Obstetrician. Rates higher than 15 milli units/min should be avoided.

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6. Definitions

The following definitions are based on Consensus Statement on VBAC from the National Institute of Health (NIH), Washington:

- Elective repeat caesarean section (ERCS) - planned caesarean for a woman with previous caesarean section
- Trial of labour (TOL) - planned attempt at vaginal birth in a woman with previous caesarean section
- Vaginal birth after caesarean (VBAC) - vaginal birth following a trial of labour
- Unsuccessful trial of labour - caesarean section following a trial of labour

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7. Supporting evidence

- Centre for Maternal and Child Enquiries. [Saving mothers' lives: Reviewing maternal deaths to make motherhood safer: 2006-2008](#). The Eighth Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. BJOG 2011;118(Suppl. 1):1-203

- PMMRC. 2010. [Perinatal and Maternal Mortality in NZ 2008: 4th Report to the Minister of Health](#). Wellington: Ministry of Health October 2010
- [Planned Vaginal Birth after Caesarean Section \(Trial of Labour\)](#). New College Statement (C-Obs 38) Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) July 2010
- Dekker GA, Chan A, Priest K et al. [Risk of uterine rupture in Australian women attempting vaginal birth after one prior caesarean section: a retrospective population-based cohort study](#). BJOG 2010;117:1358-65
- [Vaginal Birth after Caesarean: New Insights](#). National Institutes of Health (NIH) consensus development conference final statement. Washington, D.C. March 2010
- [Guidelines for Vaginal Birth after Previous Caesarean Birth](#). Society of Obstetricians and Gynaecologists of Canada, Clinical Practice Guidelines No 155. Ottawa 2005
- [Caesarean section](#). National Collaborating Centre for Women's and Children's Health, for National Institute for Clinical Excellence (NICE), Clinical Guideline, Royal College of Obstetricians and Gynaecologists Press. London 2004
- [Care of Women with Breech Presentation or Previous Caesarean Birth](#). New Zealand Guidelines Group (NZGG). Evidence-based best practice guideline, 2004
- Stiebel V and Bayly A. Trainee Intern quality improvement project, ADHB 2010
- National Women's Annual Clinical Report 2009

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8. Associated ADHB documents

[Caesarean section \(CS\) - Access, Preparation & Care in Operating Room](#)
[Caesarean Section \(CS\) - Elective - Role of Midwife in Preparing Woman for Theatre](#)
[Fetal surveillance in labour](#)
[Induction of Labour](#)
[Postpartum Haemorrhage](#)
[Syntocinon infusion](#)
[Vaginal Birth after Caesarean \(VBAC\) - Patient Information Pamphlet](#)
[Positive Birth after Caesarean \(PBAC\) - Clinic Referral Form](#)

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9. Disclaimer

No set of guidelines can cover all variations required for specific circumstances. It is the responsibility of the health care practitioners using these ADHB guidelines to adapt them for safe use within their own institutions and for the individual needs of their patients.

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10. Corrections and amendments

The next scheduled review of this document is as per the Document Classification table (page 1). However, if the reader notices any errors or believes that the document should be reviewed **before** the scheduled date, they should contact the owner or email the [Clinical Policy Advisor](#) without delay.

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