



Use of prostaglandins for induction of labour

This statement has been developed and reviewed by the Women's Health Committee and approved by the RANZCOG Board and Council.

A list of Women's Health Committee Members can be found in [Appendix A](#).

Disclosure statements have been received from all members of this committee.

Disclaimer This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

First endorsed by RANZCOG: July 2006
Current: March 2019
Review due: March 2022

Objectives: To provide advice on the use of prostaglandins for induction of labour.

Target audience: All health practitioners providing maternity care.

Values: The evidence was reviewed by the Women's Health Committee (RANZCOG), and applied to local factors relating to Australia and New Zealand.

Background: This statement was first developed by Women's Health Committee in July 2006 and reviewed in March 2019.

Funding: The development and review of this statement was funded by RANZCOG.

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1. Plain language summary

Some pregnant women are advised to have their baby within a specific time frame, rather than waiting for labour to start naturally. When the birth process is started with medical intervention, this is called “induction of labour”.

Different methods are available to stimulate labour artificially, depending on the reasons for the induction and whether the woman’s body has already begun to prepare for labour. Prostaglandins are a type of medication commonly given for induction of labour when the cervix has not softened in natural preparation for birth. The use of prostaglandins to assist in the induction process is often called “cervical ripening”. It is usually followed by additional techniques to establish labour, including artificial rupture of membranes and intravenous oxytocin infusion.

Further information regarding induction of labour can be found at:

<https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets>

2. Introduction

There are many different prostaglandin preparations and regimens for induction of labour. Overall, prostaglandins are effective at increasing the odds of vaginal birth within 24 hours when compared with placebo.¹

3. Discussion

The most appropriate type and dose of prostaglandin for induction of labour are influenced by several factors, including patient characteristics, model of obstetric care and resource setting.

All prostaglandins carry a small risk of causing uterine hyperstimulation and fetal heart rate changes. Vaginal prostaglandin E₂ (PGE₂) is one of the most common preparations used in Australian and New Zealand for induction of labour at or near term. The risk of uterine hyperstimulation with fetal heart rate changes with PGE₂ is up to 4.8% versus 1.0% with placebo or no treatment.²

In other settings, misoprostol (PGE₁) is used for induction of labour.^{3,4} Vaginal misoprostol, while more effective than PGE₂ at achieving birth within 24 hours, appears to have almost three-fold higher risk of hyperstimulation.¹ Its use for induction of labour is an off-label indication in Australia and New Zealand. Because of its higher potency, misoprostol is commonly used in Australia and New Zealand for management of midtrimester fetal death in utero and abortion. While effective, caution is particularly necessary in women with a scarred uterus where the risk of uterine rupture is around 0.3%.⁵ All units offering prostaglandin induction of labour should inform women about the associated risks of uterine hyperstimulation and have protocols in place for appropriate fetal surveillance following prostaglandin administration and prevention and management of complications.⁶

In women with a history of a prior caesarean section, prostaglandin induction of labour has been associated with rates of uterine rupture ranging from 1.4 to 2.45%.⁷⁻⁹ Please refer to the College Statement Birth after Previous Caesarean Section (C-Obs 38).

4. Summary of recommendations

Recommendation 1	Grade
The decision to use prostaglandins for cervical ripening prior to the induction of labour must consider both the potential benefits and the side effects of all available induction methods.	Consensus-based recommendation
Recommendation 2	Grade
All maternity units that use prostaglandins for cervical ripening prior to induction of labour should have protocols in place that define: <ul style="list-style-type: none"> • Dose regimen(s), including time between doses; • Fetal surveillance recommendations; • Duration and place of observation; • Management of subsequent labour including oxytocin regimen; and • Diagnosis and management of uterine hyperstimulation 	Consensus-based recommendation
Recommendation 3	Grade
Such protocols may vary recommended treatment on the basis of: <ul style="list-style-type: none"> • Favourability of the cervix (cervical or Bishop score); • Parity of the woman; • Indication for induction of labour and likelihood of fetal maternal compromise with the onset of labour; and • Other clinical circumstance 	Consensus-based recommendation

5. References

1. Alfirevic Z, Keeney E, Dowswell T, Welton NJ, Dias S, Jones LV, et al. Labour induction with prostaglandins: a systematic review and network meta-analysis, *BMJ*. 2015;350:h217.
2. Thomas J, Fairclough A, Kavanagh J, Kelly AJ. Vaginal prostaglandin (PGE2 and PGF2a) for induction of labour at term, *Cochrane Database Syst Rev*. 2014;6:CD003101.
3. Tang J, Kapp N, Dragoman M, de Souza JP. WHO recommendations for misoprostol use for obstetric and gynecologic indications, *Int J Gynaecol Obstet*. 2013;121(2):186-9.
4. ACOG. Practice Bulletin No. 107: Induction of labor, *Obstet Gynecol*. 2009 Aug(114 (2 Pt 1)):386-97.
5. Daniel Seow Choon K, Eek Chaw T, Hester Chang Qi QL, Mor Jack NG, Wan Shi T, Kok Hian T. Incidence and contributing factors for uterine rupture in patients undergoing second trimester termination of pregnancy in a large tertiary hospital - a 10-year case series, *European Journal of Obstetrics and Gynecology and Reproductive Biology*. 2018;227:8-12.
6. NICE. Clinical Guideline 70. Induction of Labour. 2008.
7. 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(25):2581-9.
8. Lydon-Rochelle M, Holt VL, Easterling TR, Martin DP. Risk of uterine rupture during labor among women with a prior cesarean delivery, *N Engl J Med*. 2001;345(1):3-8.
9. Ravasia DJ, Wood SL, Pollard JK. Uterine rupture during induced trial of labor among women with previous cesarean delivery, *Am J Obstet Gynecol*. 2000;183(5):1176-9.

6. Links to other College statements

[Intrapartum Fetal Surveillance Clinical Guideline \(3rd edition\)](#)

[Planned Birth after Previous Caesarean Section \(C-Obs 38\)](#)

[Credentialing in Obstetrics and Gynaecology \(WPI 23\)](#)

[Evidence-based Medicine, Obstetrics and Gynaecology \(C-Gen 15\)](#)

7. Patient information

A range of RANZCOG Patient Information Pamphlets can be ordered via:

<https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets>

Appendices

Appendix A Women's Health Committee Membership

Name	Position on Committee
Professor Yee Leung	Chair and Board Member
Dr Gillian Gibson	Deputy Chair, Gynaecology
Dr Scott White	Deputy Chair, Obstetrics and Subspecialties Representative
Associate Professor Ian Pettigrew	Member and EAC Representative
Dr Kristy Milward	Member and Councillor
Dr Will Milford	Member and Councillor
Dr Frank O'Keeffe	Member and Councillor
Professor Sue Walker	Member
Dr Roy Watson	Member and Councillor
Dr Susan Fleming	Member and Councillor
Dr Sue Belgrave	Member and Councillor
Dr Marilyn Clarke	ATSI Representative
Associate Professor Kirsten Black	Member
Dr Thangeswaran Rudra	Member
Dr Nisha Khot	Member and SIMG Representative
Dr Judith Gardiner	Diplomate Representative
Dr Angela Brown	Midwifery Representative
Ms Ann Jorgensen	Community Representative
Dr Rebecca Mackenzie-Proctor	Trainee Representative
Prof Caroline De Costa	Co-opted member (ANZJOG member)
Dr Christine Sammartino	Observer

Appendix B Overview of the development and review process for this statement

i. Steps in developing and updating this statement

This statement was originally developed in July 2006 and was most recently reviewed in March 2019. The Women's Health Committee carried out the following steps in reviewing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- Structured clinical questions were developed and agreed upon.
- An updated literature search to answer the clinical questions was undertaken.
- At the March 2019 teleconference, the existing consensus-based recommendations were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise. Recommendations were graded as set out below in Appendix B part iii)

ii. Declaration of interest process and management

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of the Women's Health Committee.

A declaration of interest form specific to guidelines and statements was developed by RANZCOG and approved by the RANZCOG Board in September 2012. The Women's Health Committee members

were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they become aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

iii. Grading of recommendations

Each recommendation in this College statement is given an overall grade as per the table below, based on the National Health and Medical Research Council (NHMRC) Levels of Evidence and Grades of Recommendations for Developers of Guidelines. Where no robust evidence was available but there was sufficient consensus within the Women’s Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

Recommendation category		Description
Evidence-based	A	Body of evidence can be trusted to guide practice
	B	Body of evidence can be trusted to guide practice in most situations
	C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	The body of evidence is weak and the recommendation must be applied with caution
Consensus-based		Recommendation based on clinical opinion and expertise as insufficient evidence available
Good Practice Note		Practical advice and information based on clinical opinion and expertise

Appendix C Full Disclaimer

This information is intended to provide general advice to practitioners, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient.

This information has been prepared having regard to general circumstances. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual patient and the particular circumstances of each case.

This information has been prepared having regard to the information available at the time of its preparation, and each practitioner should have regard to relevant information, research or material which may have been published or become available subsequently.

Whilst the College endeavours to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available.