The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

CATEGORY: BEST PRACTICE STATEMENT

Water immersion during labour and birth

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.

First endorsed by RANZCOG: July 2008
Current: March 2021
Review due: March 2024

Objectives: To provide advice regarding the management of women who use water immersion for labour/birth.

Target audience: All health professionals providing obstetric care and women.

Background: This statement was first developed by Women's Health Committee in July 2008 and reviewed in February 2021.

Evidence: A literature search on the terms water immersion and water birth was undertaken.

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

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

Table of contents

1. Plain language summary

The use of warm water during labour is favoured by many women as a form of relaxation and analgesia. It appears that water immersion during first stage labour and/or birth may offer some benefits to the woman that includes less use of regional analgesia and increased maternal satisfaction.[1,2]

The woman's wishes should be respected within the framework of safety and clinical guidelines. Where labour and birth in water is able to be supported, the maternity unit should be able to provide best practice physical structures and systems, staffed by appropriately trained personnel and with timely access to high level obstetric and neonatal facilities.

2. Summary of recommendations

Recommendation 1	Grade
Facilities that plan to offer immersion during labour and waterbirth need to establish protocols for candidate selection; infection control and work health and safety procedures; and exclusion criteria including recommending women leave the water if urgent maternal or fetal compromise develops.	Consensus-based recommendation
Recommendation 2	**Grade**
Clinicians attending women who are labouring and birthing in water must have appropriate training and demonstrated competence in the management of women undergoing water immersion and in the conduct of a waterbirth and be familiar with related clinical practice guidelines.	Consensus-based recommendation
Recommendation 3	**Grade**
Women should receive information about both labour and birth in water antenatally including the benefits and risks to enable the woman to make an informed choice. These plans need to be clearly documented in the woman's birthing plan and clinical record.	Consensus-based recommendation
Recommendation 4	**Grade**
Women requiring continuous electronic fetal monitoring (CEFM) during labour may utilise water immersion, provided that adequate telemetry equipment is available.	Consensus-based recommendation
Recommendation 5	**Grade**
Staff must be trained in and have practised obstetric emergency management under simulation in the correct procedure to assist the woman to leave the water in an emergency situation and to manage the emergency appropriately.	Consensus-based recommendation
Recommendation 6	**Grade**
Regular (at least annually) audits should be conducted in units offering water immersion in labour and birth in water.	Consensus-based recommendation

3. Discussion and recommendations

4.1 What is the current research in relation to water immersion in the first stage of labour?

A Cochrane review[1] provides the most recent international evidence on water immersion in labour and water birth.

The results showed that:

Water immersion during the first stage of labour was associated with a small reduction in the risk of using regional analgesia from 43% to 39% (RR 0.91, 95% CI 0.83 to 0.99, 5 trials, 2439 women, moderate-quality evidence).[1]

The review found little or no difference in the rates of spontaneous vaginal birth between the use of water immersion or not using water immersion (83% versus 82%, risk ratio (RR)1.01, 95% confidence interval (CI) 0.97 to 1.04, 6 trials, 2559 women, moderate-quality evidence); Instrumental vaginal birth (12% versus14%, RR 0.86, 95% CI 0.70 to 1.05, 6 trials, 2559 women, low-quality evidence); caesarean (5% versus 4%, RR 1.27, 95% CI 0.91to 1.79, 7 trials, 2652 women, low-quality evidence).[1]

There is insufficient evidence to determine the effect of water immersion in the first stage of labour on the estimated blood loss (mean difference (MD) -14.33 mL, 95% CI -63.03 to 34.37, 2 trials, 153 women, very low-quality evidence) and the incidence of third or fourth degree tears (3% versus 3%, RR 1.36, 95% CI 0.85 to 2.18, 4 trials, 2341 women, moderate-quality evidence).

4.2 What is the current research in relation to waterbirth?

Concerns often raised regarding birth in water focus on fetal safety include respiratory difficulties and drowning. To date, there is no evidence of increased maternal, fetal or neonatal risk associated with water immersion, compared with labouring and giving birth on land.[1,3] Johnson's [4,5] review of the newborn respiratory physiology outlines that there are several protective mechanisms that prevent the baby from inhaling or gasping during a birth in water.

In relation to birth in water, the Cochrane review results showed that:

There is a growing body of evidence that reports on the safety and efficacy of labour and birth in water.

There were no clear differences between groups for normal vaginal birth (98% versus 97%, RR 1.02, 95% CI 0.96 to 1.08, 120 women, 1 trial, low-quality evidence); or instrumental vaginal birth (2% versus 2%, RR 1.00, 95% CI 0.06 to 15.62, 1 trial, 120 women, very low quality evidence); caesarean section (0% versus 2%; RR 0.33, 95% CI 0.01 to 8.0, 1 trial, 120 women, very low-quality evidence), and NICU admissions (8% versus 11%, RR 0.78, 95% CI 0.38 to 1.59, 2 trials, 291 women, very low-quality evidence).[1]

For women choosing to give birth in water there was no evidence of increased adverse effects to the fetus/neonate or woman from labouring or giving birth in water.[1]
Although there is no evidence of increased adverse outcomes related to water immersion/birth it

needs to be noted that the numbers in these studies are small, and thus have limited power to identify increased risks of uncommon perinatal outcomes. The authors concluded that due to clinical variability and heterogeneity within the studies, further research is required.[1]

4.3 Facilities and clinicians offering water immersion for labour/birth.

Facilities that plan to offer warm water immersion during labour and who facilitate birth in water need to establish protocols for candidate selection; infection control and work health and safety procedures; and exclusion criteria including moving women from the water if urgent maternal or fetal concerns or complications develop. The guidelines for candidate selection should take into consideration the full clinical picture and all associated risk factors.

Clinicians attending women who are labouring and birthing in water must have appropriate training and demonstrated competence in water immersion and birth and be familiar with the related clinical practice guidelines.

Waterbirth may remain outside a clinician's scope of practice due to lack of training. In the event that a clinician competent in waterbirth is not available to facilitate a woman's request to birth in water, it is recommended that the woman leave the water.

Recommendation 1	Grade
Facilities that plan to offer immersion during labour and waterbirth need to establish protocols for candidate selection; infection control and work health and safety procedures; and exclusion criteria including recommending women leave the water if urgent maternal or fetal compromise develops.	Consensus-based recommendation
Recommendation 2	**Grade**
Clinicians attending women who are labouring and birthing in water must have appropriate training and demonstrated competence in the management of women undergoing water immersion and in the conduct of a waterbirth and be familiar with related clinical practice guidelines.	Consensus-based recommendation

4.4 What are the recommendations in relation to obtaining consent?

Women should receive information about both labour and birth in water antenatally including the benefits and risks to enable the woman to make an informed choice. These discussions and plans need to be clearly documented in the woman's birthing plan and clinical record.

Recommendation 3	Grade
Women should receive information about both labour and birth in water antenatally including the benefits and risks to enable the woman to make an informed choice. These plans need to be clearly documented in the woman's birthing plan and clinical record.	Consensus-based recommendation

4.5 Unplanned birth in water

Women should be advised antenatally that they may be advised to leave the water if the clinicians have concerns for either her or her baby's well-being.

Women who wish to labour in water and birth out of the water should be assisted to do so by having arrangements to assist her leave the water to birth.

Nevertheless, a proportion of women will birth in water when that was not the prior intent, usually, but not always, as a result of rapid progress in the second stage.

The clinician supporting a woman undertaking water immersion in first stage labour should be prepared for the event of a woman giving birth in water even if this was not the woman's original intent.

4.6 Issues to be considered with water immersion during labour and birth?

4.6.1 Fetal surveillance

Fetal heart rate monitoring should be undertaken as per RANZCOG guidelines. Continuous electronic fetal monitoring (CEFM) is only possible using telemetry; where these facilities are not available fetal surveillance is limited to intermittent auscultation, usually with a handheld Doppler device. Women requiring continuous electronic fetal monitoring (CEFM) during labour may utilise water immersion, provided that adequate telemetry equipment is available.

Recommendation 4	Grade
Women requiring continuous electronic fetal monitoring (CEFM) during labour may utilise water immersion, provided that adequate telemetry equipment is available.	Consensus-based recommendation

4.6.2 Progress of labour

Vaginal examination to assess the progress of labour may be performed under water if deemed necessary. However, this is dependent on acceptability to the woman and the clinician's ability to perform this procedure under these circumstances and the woman is usually asked to leave the water if findings are not certain. Water immersion should not be used as a reason to delay

procedures such as vaginal examination. There is no quality evidence attesting to the safety of vaginal examination whilst immersed in water.

4.6.3 Oxytocin infusion

Oxytocin augmentation of labour may not be possible (as CEFM is obligatory and telemetry may not be universally available).

4.6.4 Third stage of labour

There is also currently no reliable evidence that can be used to inform women regarding the benefits and risks of water immersion during the third stage of labour. Third stage is managed according to the clinical situation. Following physiological birth there is no evidence to suggest physiological third stage must be conducted out of the water. Clinicians should be alert to the increased difficulty in estimating blood loss within water and should assist the woman to exit the water if any concerns are present. For active management of third stage best practice suggests that the woman should be assisted to exit the birth pool/bath after birth in water to an environment where the management of third stage can be safely performed, where she can have skin to skin contact and breastfeed her baby, and where an accurate estimation of blood loss can be performed.

4.6.5 Obstetric emergencies

- In the rare case of obstetric emergencies (e.g. shoulder dystocia and maternal collapse) it is essential that the woman is removed from the water as quickly as possible. These emergencies cannot be safely managed when the woman is immersed in water.

- Staff must be trained in and have practised obstetric emergency management under simulation in the correct procedure to assist the woman to leave the water in an emergency situation.

- Emergency clinical scenarios can be associated with substantive work health and safety issues. Significant hazards exist when trying to transfer a woman rapidly from a birthing pool/bath onto a bed, particularly when flooring can be wet and slippery, and the woman compromised or unconscious. Electrically powered hoists are essential in such a setting in order to minimise risks to the woman and attending staff and should form part of local policies and protocols.

Recommendation 5	Grade
Staff must be trained in and have practised obstetric emergency management under simulation in, the correct procedure to assist the woman to leave the water in an emergency situation and to manage the emergency appropriately.	Consensus-based recommendation

4.7 Maternal and neonatal sepsis with WWI during labour and birth?

Contamination of the water with enteric bacteria is inevitable and cases of neonatal and maternal sepsis can logically be expected on first principles. However, it is unlikely that high level evidence of a causal relationship will become available due to limitations on the power of studies that can be undertaken in such a setting. Whilst the Cochrane meta-analysis in 2018 showed no significant differences in neonatal infection rates compared with conventional labour and birth, there are no adequately powered prospective studies addressing this issue. It is considered imperative that audit

within units offering water immersion in labour/birth include careful collection of data relating to maternal and neonatal sepsis.

Positive Group B Streptococcus (GBS) vaginal swabs during pregnancy are not a primary contraindication for water immersion provided that antibiotics guidelines are adhered to.[6] Women with ruptured membranes for more than 18 hours may utilise immersion in water during labour and birth provided that the recommended intravenous antibiotics are administered.[6,7]

4.8 What are the recommendations in relation to audit and research?

It is incumbent on any facility offering water immersion for labour and/or birth to carefully collect and scrutinise appropriate audit data in a peer review setting. These audits should include collection of data relating to the various maternal outcomes such as use of alternative analgesia, length of labour and maternal intervention rates and neonatal outcomes such as unexpected nursery admission. Audits should form part of regular review alongside other maternal and neonatal outcome measures. Additionally, evaluation should be conducted to ensure adherence to published water immersion/birth guidelines. In addition to the various measures of maternal and neonatal outcomes, given the lack of high-quality data with which to advise women on this issue, further research is needed. It is imperative that all such research is adequately powered, appropriately structured and registered, randomised and is analysed according to intention to treat. Issues addressed should include maternal well-being, birth outcomes, incidence of obstetric and neonatal emergencies, rates of neonatal admission to special care nursery and maternal satisfaction.

Recommendation 6	Grade
Regular (at least annually) audits should be conducted in units offering water immersion in labour and birth in water.	Consensus-based recommendation

5. References

1. Cluett E, Burns E, Cuthbert A. Immersion in water during labour and birth. Cochrane Database Syst Rev2018; 5(5).

2. Carlsson T, Ulfsdottir H. Waterbirth in low-risk pregnancy: An exploration of women's experiences.Journal of Advanced Nursing 2020; 76(5): 1221-31.

3. National Institute for Clinical Excellence. Intrapartum care for healthy women and babies Clinicalguideline [CG190]. Febraury, 2017 ed. https://www.nice.org.uk/guidance/cg190: NICE; 2019.

4. Johnson P. Birth under water: To breathe or not to breathe. BJOG : an international journal ofobstetrics and gynaecology 1996; 103: 202-8.

5. Harper B. Birth, Bath, and Beyond: The Science and Safety of Water Immersion During Labor and Birth.Journal of Perinatal Education 2014; 23(3): 124-34.

6. Cohain JS. Waterbirth and GBS. Midwifery Today 2010; 4: 9-10.

7. Department of Health (Western Australia). Statewide clinical guidelines for women requesting immersionin water for pain management during labour and/or birth.; 2017.

8. National Health and Medical Research Council. NHMRC additional levels of evidence and grades forrecommendations for developers of guidelines. Canberra; 2009

6. Other suggested reading

Australian College of Midwives. Position Statement on the use of Water Immersion for Labour and Birth. 2013; https://www.midwives.org.au/position-statements

Cluett E, Burns E, Cuthbert A. Immersion in water during labour and birth. *Cochrane Database Syst Rev* 2018; 5(5).

Davies M. Water births and the research required to assess the benefits versus the harms *J Paediatr Child Health*, 2012; 48 (9): pp. 726-729.

Maude R, Foureur M. It's beyond water: stories of women's experience of using water for labour and birth. Women and Birth 2007 20(1):pp.17-24.

Maude, R. Getting into the water: a prospective observational study of water immersion for labour and birth at a New Zealand District Health Board. *BMC Pregnancy and Childbirth* 2020; Vol20:312 pp.1-12.

Nutter E, Meyer S, Shaw-Battista J, Marowitz A. Waterbirth: An Integrative Analysis of Peer-Reviewed Literature. *Journal of Midwifery & Women's Health*. 2014;59(3):286–319.

New Zealand College of Midwives. Consensus Statement: The Use of Water for Labour and Birth. 2015; https://www.midwife.org.nz/wp-content/uploads/2019/05/The-Use-of-Water-for-Labour-and-Birth.pdf

Links to other College statements

Evidence-based Medicine, Obstetrics and Gynaecology (C-Gen 15)
https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical%20-%20General/Evidence-based-medicine,-Obstetrics-and-Gynaecology-(C-Gen-15)-Review-March-2016.pdf?ext=.pdf

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

8. 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
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, Australia
Ms Adrienne Priday	Midwifery Representative, New Zealand
Ms Ann Jorgensen	Community Representative
Dr Rebecca Mackenzie-Proctor	Trainee Representative
Dr Leigh Duncan	Maori 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 2008 and was most recently reviewed in February 2021. 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 November teleconference committee meeting, 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.[8] 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

Purpose

This Guideline has been developed to provide general advice to practitioners about women's health issues concerning water immersion during labour and birth 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 person with an intent to use water immersion during labour and birth. 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 person with an intent to use water immersion during labour and birth and the particular circumstances of each case.

Quality of information

The information available in the *Water Immersion in Labour and Birth* is intended as a guide and provided for information purposes only. The information is based on the Australian context using the best available evidence and information at the time of preparation. While the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) had endeavoured 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. The use of this information is entirely at your own risk and responsibility.

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