Water immersion during labour and birth

**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.
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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

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Recommendation 1</td>
<td>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.</td>
</tr>
<tr>
<td>Recommendation 2</td>
<td>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.</td>
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<td>Recommendation 3</td>
<td>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.</td>
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<td>Recommendation 4</td>
<td>Women requiring continuous electronic fetal monitoring (CEFM) during labour may utilise water immersion, provided that adequate telemetry equipment is available.</td>
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<tr>
<td>Recommendation 5</td>
<td>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.</td>
</tr>
<tr>
<td>Recommendation 6</td>
<td>Regular (at least annually) audits should be conducted in units offering water immersion in labour and birth in water.</td>
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</table>
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% versus 14%, 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 0.91 to 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.

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### 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

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.

Grade
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

Women requiring continuous electronic fetal monitoring (CEFM) during labour may utilise water immersion, provided that adequate telemetry equipment is available.

Grade
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.

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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. 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.

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.

<table>
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5. References

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

6. **Other suggested reading**


Links to other College statements

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](https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets)
8. Appendices

Appendix A Women’s Health Committee Membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Position on Committee</th>
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<tbody>
<tr>
<td>Professor Yee Leung</td>
<td>Chair and Board Member</td>
</tr>
<tr>
<td>Dr Gillian Gibson</td>
<td>Deputy Chair, Gynaecology</td>
</tr>
<tr>
<td>Dr Scott White</td>
<td>Deputy Chair, Obstetrics</td>
</tr>
<tr>
<td>Associate Professor Ian Pettigrew</td>
<td>Member and EAC Representative</td>
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<tr>
<td>Dr Kristy Millward</td>
<td>Member and Councillor</td>
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<tr>
<td>Dr Will Milford</td>
<td>Member and Councillor</td>
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<tr>
<td>Dr Frank O’Keeffe</td>
<td>Member and Councillor</td>
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<tr>
<td>Professor Sue Walker</td>
<td>Member</td>
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<tr>
<td>Dr Ray Watson</td>
<td>Member and Councillor</td>
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<tr>
<td>Dr Susan Fleming</td>
<td>Member and Councillor</td>
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<tr>
<td>Dr Sue Belgrave</td>
<td>Member and Councillor</td>
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<tr>
<td>Dr Marilyn Clarke</td>
<td>ATSI Representative</td>
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<tr>
<td>Associate Professor Kirsten Black</td>
<td>Member</td>
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<tr>
<td>Dr Thangeswaran Rudra</td>
<td>Member</td>
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<tr>
<td>Dr Nisha Khot</td>
<td>Member and SIMG Representative</td>
</tr>
<tr>
<td>Dr Judith Gardiner</td>
<td>Diplomate Representative</td>
</tr>
<tr>
<td>Dr Angela Brown</td>
<td>Midwifery Representative, Australia</td>
</tr>
<tr>
<td>Ms Adrienne Priddy</td>
<td>Midwifery Representative, New Zealand</td>
</tr>
<tr>
<td>Ms Ann Jorgensen</td>
<td>Community Representative</td>
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<tr>
<td>Dr Rebecca Mackenzie-Proctor</td>
<td>Trainee Representative</td>
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<tr>
<td>Dr Leigh Duncan</td>
<td>Maori Representative</td>
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<tr>
<td>Prof Caroline De Costa</td>
<td>Co-opted member (ANZJOG member)</td>
</tr>
<tr>
<td>Dr Christine Sammartino</td>
<td>Observer</td>
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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. 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.

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

For the avoidance of doubt, the materials were not developed for use by patients, and patients must seek medical advice in relation to any treatment. The material includes the views or recommendations of third parties and does not necessarily reflect the views of RANZCOG or indicate a commitment to a particular course of action.

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