



The Use of Water in Labour and Birth

Midwifery Practice Guideline

The Use of Water for Labour and Birth Practice Points

Quality assurance measures are important, and include the need for checking the quality of water reaching the pool, protocols for cleaning the pool, and infection control procedures. ([NICE 2007](#); [Kingsley et al. 1999](#); [Hawkins 1995](#)).

The temperature of the woman and the water should be monitored hourly to ensure that the woman is comfortable and not becoming pyrexial. The temperature of the water should not be above 37.5° C. ([NICE 2007](#))

Women's experiences of water for labour and birth are generally positive in terms of feeling relaxed, involvement in decision-making and feeling more in control ([Richmond 2003](#); [Hall and Holloway 1998](#)).

Effects on women's experience of pain and use of pharmacological methods of pain relief reflect less use of epidural/spinal for pain relief during labour and less reported pain ([Cluett et al. 2004a](#)).

Water immersion during labour is associated with no difference in labour duration, type of birth, five minute Apgar Scores, neonatal infection and admission to neonatal units ([Cluett et al. 2004a](#)).

For women experiencing dystocia, immersion in water has been found to reduce subsequent epidural use and augmentation and intravenous infusion ([Cluett et al. 2004b](#)).

One trial of early immersion (before 5cm dilatation) has been associated with prolongation of labour and increased need for epidural and syntocinon ([Eriksson et al. 1997](#)).

Where women have experienced over 24 hours with spontaneous rupture of membranes, Apgar scores of less than 8 at five minutes are found more commonly amongst babies of women who used water during labour ([Waldenstrom and Nilsson 1992](#)).

Two national surveys suggested that there was no evidence of a link between neonatal morbidity and mortality and the use of water during labour ([Gilbert and Tookey 1999](#); [Alderdice et al. 1995](#)).

Midwives should be alert to the possibility of snapping of the umbilical cord when water is used for birth ([Cro and Preston 2002](#)).

The Use of Water for Labour and Birth

The use of water for labour and birth has been available in the United Kingdom since the 1980s. This approach to care can be provided using a variety of pools and in both the home and hospital settings. There is a growing body of information about the use of water immersion during labour and birth from around the world. Interpreting that information in the light of midwifery-led care in UK settings should be undertaken with caution, as there may be differences in practice. These differences include the use of pools with air jets ([Schorn et al. 1993](#)), restricted duration of bathing ([Lenstrup et al. 1987](#)) or whirlpool baths ([Rush et al. 1996](#)).

If women are considering water immersion it is important that information is provided prior to labour to allow time for consideration of this option. ([Richmond 1994](#))

Information on the experiences of nine women who had used water immersion during labour was obtained in a qualitative study ([Hall and Holloway 1998](#)). Women felt that the use of water had supported their feeling in control and involvement in decision-making. A survey of 189 women who experienced water birth reported feelings of relaxation, relief, warmth and relief of pain on entering the pool ([Richmond 2003](#)). Amongst women who had a previous birth, water birth differed, as they felt more in control, more relaxed and found labour less painful.

Several outcomes of interest to both women and midwives have been reported in studies of various designs. These include the duration of the labour, condition of the baby in utero and at birth, the state of the perineum and the risk of infection to the woman or her baby. A Cochrane review of the use of water for labour reflects a reduction in use of epidural/spinal/paracervical blocks for pain relief and reduction in women's reported experiences of pain ([Cluett et al. 2004a](#)). There are eight trials included in this systematic review, but they do not all contribute data for all outcomes. In some of these trials participants were included from 34 weeks pregnancy onwards, whereas in UK practice the use of water is commonly restricted to women from 36-37 weeks onwards. This review found no differences in regard to duration of first and second stages of labour, instrumental vaginal delivery, caesarean section, perineal trauma, Apgars less than seven at five minutes, admissions to neonatal units or neonatal infection rates. The reviewers comment that evidence is not available related to the effects of water on the third stage of labour; other reviewers also call for more research into this aspect of care ([MIDIRS 2005](#)). [NICE 2007](#) conclude that there is insufficient evidence on the use of water in the second stage of labour, to either support or discourage giving birth in water.

A further randomised controlled trial has been published that is not included in the Cochrane review. The use of water immersion has been compared with amniotomy and augmentation with oxytocin for nulliparous women experiencing dystocia in labour ([Cluett et al. 2004b](#)). Whilst recruitment to the trial did not achieve the numbers planned, women allocated to water immersion received fewer epidurals and fewer amniotomies and oxytocin, with no difference in delivery method between the two groups. There were no differences in neonatal outcomes (Apgars, blood gases) except for more admissions to SCBU following water immersion. Scores for pain were lower amongst the water users, who also appeared more satisfied with the freedom of movement experienced. The researchers acknowledge that the trial was not large enough to detect differences in morbidity.

There are two other large studies from UK practice. ([Burns' 2001](#)). review included a consecutive sample of 2357 low-risk women who used a birthing pool between 1990-1998 compared with a group of women, matched for key factors, who gave birth between 1991-1998 in the same centre. From two one-year sub-samples, women who used the pool were significantly more likely to give birth normally. Use of water during labour was associated with less epidural usage and more intact perineae. The second UK study involved 301 women who gave birth in water in one centre between 1989-1994 and matched controls ([Otigbah et](#)

[al. 2000](#)). The study reported statistically significantly shorter first and second stages of labour and less perineal trauma for women having their first baby and less analgesia use for all water births. Otigbah and colleagues acknowledge the difficulties of researching new and less commonly used approaches to birth. Information on perineal outcome has to be interpreted with caution, as early reports failed to differentiate between births out of water following immersion in labour and the use of water throughout ([Garland and Jones 1997](#)). Interpretation of the data should also consider the variation in techniques and the extent to which a "hands-on" approach is used. A study comparing midwives' visual estimation of blood loss in "water" and on "land" found no significant difference in the accuracy of estimation in these two contexts ([Lim 1994](#)).

[Eriksson et al.'s 1997](#)) study of early versus late bathing (before and after 5cm cervical dilatation) found early bathing was associated with an increase in the average length of first stage and an increased need for oxytocin and epidural anaesthesia, although this study may have included women in both the latent and active phases of labour. There appears little to recommend the use of arbitrary points during labour to dictate when birth pools should or should not be used and no evidence to suggest that the use of water should be limited to a specific duration.

[Andersen et al 1996](#)) reported more minor infectious morbidity for women but not for babies, and other studies report no significant differences for either the woman or her baby ([Forde et al. 1999](#); [Eriksson et al. 1997](#); [Schorn et al. 1993](#)).

The suggestion that fetal hyperthermia may lead to hypoxia ([Rosevear et al. 1993](#)) has resulted in recommendations to monitor maternal temperatures closely. Increases of one degree Celsius above the baseline should result in advice to discontinue use ([Charles 1998](#)). Water temperature should be comfortable for the woman but not exceed 37.5 degrees Celsius ([NICE 2007](#)).

[Johnson's 1996](#)) review of respiratory physiology suggests that, in a non-stressed fetus, it is unlikely that breathing will commence in the short time that the baby's head is underwater. Johnson sees no reason to prevent this option being offered to women. This is supported by the national UK survey ([Alderdice et al. 1995](#)), where the twelve cases of neonatal mortality were not considered to be due to the use of water, although, as the authors point out, the retrospective nature of the data collection must be noted. A surveillance study (British Isles) and postal survey (England and Wales) reported that perinatal mortality is not substantially increased when birth occurs in water compared to that for babies born by normal vaginal delivery out of water to women at low obstetric risk ([Gilbert and Tookey 1999](#)). Data collected for this survey was compared with that for traditional deliveries from other series of low risk births in the United Kingdom. Similarly, perinatal mortality and risk of admission to special care for babies delivered in water were similar to those of low risk births out of water. Water aspiration was reported in two babies and snapped umbilical cord in five, although there is no data available about the incidence of the latter for non-water births. There have, subsequently, been further reports from midwives of the potentially dangerous occurrence of snapped umbilical cords and the steps taken to detect and deal with this situation ([Cro and Preston 2002](#)). There has been continued discussion of possible risks to babies in the paediatric literature, and calls for continued vigilance, audit and further research ([Gilbert 2002](#)). One study included women who had over 24 hours with ruptured membranes: infants born to women in the bathing group had more Apgar scores of less than 8 at 5 minutes ([Waldenstrom and Nilsson 1992](#)).

Several maternity units in the United Kingdom have previously reported quality assurance measures related to monitoring water quality, protocols for the cleaning of equipment and infection control procedures ([Hawkins 1995](#)); these remain important ([Kingsley et al. 1999](#)). Specialist advice should be obtained on these issues, if required ([Royal College of Midwives 2000](#)). Training should be available for midwives to prepare them to provide this form of care, and units should develop protocols for this approach (RCOG/RCM 2006)

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The development and ratification of this guideline has been under the auspices of the Professional Policy Committee of the RCM Council and the final version remains their responsibility.

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Appendix A Sources

Four bibliographic sources (Medline, CINAHL, MIDIRS and the Cochrane Library) were searched in order to identify the published literature. As this document is an update of research previously carried out, the publication time period was restricted to 2004 to January 2008

Search Terms

Separate search strategies were developed for each section of the review. Initial search terms for each discrete area were identified by the authors. For each search, a combination of MeSH and keyword (free text) terms was used

Journals hand-searched by the authors (2004) were as follows:

- Birth
- British Journal of Midwifery
- Midwifery
- Practising Midwife
- Evidence-based Midwifery

