

# Water for Labour and Birth

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## ***Preamble***

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Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to it's' doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

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The therapeutic properties of warm water immersion have been known for centuries. Baths, showers and whirlpools have been used for comfort during labour for many years. Over the past decade immersion in water for the birth of the baby has aroused interest in many countries and an increase in the number of women requesting this option for both hospital and out-of-hospital births is occurring.

The following guidelines are based on the College of Midwives guidelines with some changes based on further evidence. It is acknowledged that there is more anecdotal and experiential knowledge than trials, but since the last update of these guidelines there have been at least two significant pieces of research (2)(3). It should also be appreciated that in midwifery different levels of evidence for practice may be used, and professional consensus (4) is one such area that both Garland (5) and Harper (6) have commented on.

Maternal and neonatal outcomes have been studied against outcomes in low risk women who did not use water in large populations of women in different settings (7)(8)(3)(11)(2)(12)(9)(10). The advantages and disadvantages of waterbirth are based on these studies, and on the observational work of Garland 2002 (5) and Harper 2002 (6).

The perinatal mortality rate for these births was comparable to other low risk births in the UK. Water aspiration occurred in two babies born into water; however, no deaths were attributed to water birth (11).

A recent exception has been published. A small randomized controlled trial of 274 women compared the use of warm water immersion in the first stage of labour to their standard of care that excluded tub use (13). They reported no differences between groups in maternal or neonatal morbidity or mortality with two exceptions. Babies born in the water immersion in labour group required more resuscitation efforts, and women who were randomized to the control group rated their overall experience of childbirth more positively. Interestingly, there were no differences between groups in APGAR scores, NICU admissions, and neonatal infections. The authors' conclusions that the use of water for labour and birth may contribute to adverse outcomes should be viewed with considerable caution. There are several methodological problems with this study, these results are not congruent with the findings of several other larger trials of similar design and their statistical analysis does not support their recommendations.

## ***Advantages of Water Immersion***

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- The buoyancy of water enables a mother to move more easily;
- Blood pressure is lowered;

- Comfort & relaxation may be enhanced;
- Maternal sense of control may increase, which in turn enhances emotional well-being;
- Pain may be diminished;
- The need for pharmacological pain relief is reduced;
- Length of labour can be reduced.
- Water immersion can be used as a form of labour augmentation, thereby reducing the use of ARM and oxytocics (3)
- Improved perineal stretching reduces trauma;
- Operative births are reduced;
- Reduction in blood loss;
- Higher 1 minute Apgars
- Higher cord pH

### ***Potential Disadvantages***

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- Decrease in uterine contraction strength and frequency, especially if used before active labour is established (theoretical only and not supported by evidence)
- Neonatal water aspiration; 2 cases reported with no long term morbidity (11)
- Maternal hyperthermia may contribute to fetal hypoxemia;
- Neonatal hypothermia is possible if water temperature is too cool;
- Cord immersion in warm water may delay vasoconstriction, increasing red cell transfusion to the newborn and promoting jaundice;
- Blood loss estimation and assessment is difficult in the water;
- Maternal and Neonatal infection may be increased; not supported by the evidence
- Theoretical risk of maternal water embolus;
- Risk of acquiring blood born infection or sustaining back injury for caregivers.

### ***Recommended Criteria for the Use of a Water Pool***

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- An uncomplicated pregnancy of at least 37 weeks gestation;
- Established active labour (i.e. good regular contractions; dilation of the cervix and descent of the presenting part).
- There is very little use of waterbirth in VBAC but in the few centres that allow water VBAC (5) there have been no adverse outcomes. Numbers are too small to make recommendations.
- Breech births have been conducted in water, but it is generally accepted that this is not safe practice, even by midwives experienced with breech presentation (14).

### ***Contraindications for Birth in a Water Pool***

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- Pre-term labour;
- Maternal infection with a bloodborn pathogen such as Hepatitis B or C or HIVi;
- A woman who has meconium-stained amniotic fluid may use a water pool for immersion during labour, so long as close monitoring of the fetal heart takes place and findings are reassuring. She should be asked to get out of the pool for the birth of the baby to facilitate suctioning of the oral and nasal pharynx once the head is born.
- Caution should be used when considering water immersion if sedation has been administered to the woman. Individual responses to sedation vary; the woman must be able to get in and out of the tub without difficulty and be fully conscious and aware of her surroundings while in the water. She should never be left alone.

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<sup>i</sup> While there is currently no evidence of increased rates of infection with specific bacteria or viruses with water birth, if a woman is known to be colonized with an infectious agent, such as Group B Strep bacteria, and wishes to give birth in water, it is important for the midwife to discuss the possibility of transmission of infection to the newborn when she is reviewing options for care.

## ***Recommendations for the Use of Water Immersion for Labour and Birth***

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- Midwives should discuss the potential advantages and disadvantages of water immersion for labour and birth with each woman prior to labour.
- The woman's vital signs and the fetal heart rate must be within normal limits.
- The fetal heart should be monitored according to accepted guidelines. Use of a waterproof Doppler device is recommended.
- The water should be kept at a comfortable temperature for the mother (6). Neonates born into slightly cooler water than 37-38 degrees C tend to be more vigorous than those born into warmer water, who can take up to a minute to become vigorous (6).
- The woman's temperature should be monitored and she should leave the water if her temperature exceeds 37.5 degrees C.
- The woman should be encouraged to maintain adequate hydration.
- The woman should be asked to leave the water if there are any concerns about her or her baby's well being. An alternative birth place should be set up close to the pool.
- The water should be kept as clean as possible. Stool and blood clots must be removed from the tub immediately. The tub should be drained, cleaned and refilled if the pool is being used over a number of hours or if contaminants cannot be easily removed.
- The baby should be born completely underwater with no air contact until the head is brought to the surface, as air and temperature change may stimulate breathing and lead to water aspiration.
- At birth the baby's head must be brought to the surface as soon as possible. Care should be taken to avoid undue traction on the cord. There have been reports of cord tearing. Some authors recommend early clamping of the cord to prevent polycythemia and reduce the risk of fetal blood loss if the cord integrity is compromised.
- Care should be taken to maintain the newborn's temperature to prevent hypothermia, this may be helped by using a wet blue soaker pad covering the baby on mothers chest whilst in the pool.
- The placenta is best delivered outside of the tub to accurately assess maternal bleeding.
- Birth pools that are being used in hospital or that will be used again by another birthing mother should be cleaned between uses with a chlorine-releasing agent to kill any blood born pathogens.

As when caring for any mother or newborn, the midwife is responsible for using her clinical judgment, responding appropriately to problems that may arise, and for documenting her actions.

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#### **FURTHER READING**

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