



**Waterbirth International – presented by Barbara Harper**



***Waterbirth Educational Workshop***  
**10th December 2021**

**Session Description:** This course will cover how and why to integrate water immersion into maternity care including benefits of waterbirth as part of a gentle birth approach to maternity care; the neurology of water immersion; managing and preventing complications; the latest research on waterbirth; the common contraindications to birth in water; the rationales for delayed cord clamping; the necessity of protecting and seeding the microbiome of the infant; accomplishing skin to skin contact and kangaroo mother care; physiological third stage and newborn transitional physiology. There is a special emphasis supporting women using water immersion with demonstrations, film and hundreds of photographs.

**This workshop is intended to support practice by:**

- Promoting critical thinking on issues relating to undisturbed birth;
- Broadening knowledge around key issues of planning, implementing, providing and documenting maternity care that includes an awareness of the benefits of water immersion;
- Identifying evidence-informed practices to facilitate the woman's informed choice;
- Offering opportunity for care providers to reflect and review maternity care practices in an individual and group environment.

**Learning Objectives: At the end of this session participant will be able to:**

1. Explain the physiology of newborn transition and the significance of delayed cord clamping on newborn breathing.
2. Discuss the ACOG/AAP 2014 and 2016 position statements about waterbirth
3. Outline the recommended steps to prevent and/or resolve a potential shoulder dystocia after the head is delivered into the water.

4. List three instances where water immersion could be used as an intervention in labor.
5. Explain the four physiological mechanisms that prevent the baby from taking a breath in water.

## **Agenda –**

**10:00am** – Start of workshop

**11:30am** – Coffee break

**13:30pm** - Lunch break

**15:30pm** – Coffee break

**5:00pm** – End of workshop & certificates

**Venue: Mediclinic Parkview Hospital, Seminar room, 8th Floor**

- I. Introduction to Waterbirth
  - A. Benefits of water immersion
  - B. Waterbirth around the world
    - 1.) Quiet observations
    - 2.) Support primal instinctive behaviors
    - 3.) Be attentive
    - 4.) Practice masterly inactivity
    - 5.) Assist mother to 'catch' her own baby
  - C. Pediatric objections
    1. Current position from Committee on Fetus & Newborn
    2. 2014 and 2016 ACOG opinion published papers
  
- II. Implementing protocols
  - A. Inclusion criteria
  - B. Patient informed consent
    1. Parent education
    2. Provider comfort level
    3. Provider experience and education
  - C. Other considerations
    1. Status of membranes
    2. Induction of labor (IOL)
    3. Patient education about waterbirth
  
- II. What keeps the baby safe in the water?
  - A. Four physiologic breathing inhibitors
    1. Decrease in the Fetal Breathing Movement (FBM) rate

- a. Normal from 10 weeks gestation
  - b. 40% during active waking state of the fetus
  - c. 60% no movement during sleep
  - d. Movements slow down 24-48 hours prior to labor
  - e. FBM stops after 4 cm dilation
2. High pulmonary vascular resistance
    - a. Fetal lung fluid inhibits respiration
    - b. High pulmonary resistance caused by low pulmonary arterial pressure
    - c. Lung fluids must leave avicular spaces before oxygen exchange can take place.
    - d. Fetal pulmonary circulation receives 8% of cardiac output
      - 1) Neonatal requirement for cardiac output increases to 40-55%
      - 2) Establishment of respiration begins with adequate perfusion of the lung bed
  3. Mild hypoxia (low levels of oxygen)
    - a. Normal newborn state
    - b. Causes apnea, bradycardia and swallowing
    - c. Swallowing is the first reflex
  4. Mammalian dive reflex
    - a. Present in all mammals
    - b. Causes swallowing, apnea, bradycardia
    - c. Protects breastfeeding infants
- B. Initiation of newborn breathing
1. Trigeminal nerve stimulation (5<sup>th</sup> cranial nerve) around nose and mouth
    - a. Gravity
    - b. Atmospheric oxygen and carbon dioxide
    - c. pH change of cerebral spinal fluid
  2. Closer of the shunts in the heart
  3. Pulmonary circulation
    - a. Recruiting of lung cells
    - b. Capillary erection
    - c. Pulmonary fluid resorption
  4. Lymphatic draining – 72 hours
- C. Newborn transition
1. Most critical period in human life
    - a. Six adaptations of the newborn
  2. Vigorous babies do not need stimulation, suctioning or hats

- a. Babies born in water transition similarly to babies born in breech positions
- D. Apgar scoring after waterbirth
  - 1. Watch for swimming motions and movement
  - 2. Eyes open and blinking
  - 3. Swallowing reflex
  - 4. Spitting (fluid ejection) reflex
  - 5. Heterogeneity
  - 6. Severely hypoxic babies are severely depressed
- E. Resuscitation of newborns after waterbirth
  - 1. Leave the cord intact
  - 2. Use tray or mother holding newborn
  - 3. Keep baby warm
  - 4. Can bag on mother's chest
  - 5. Maintain open airway
  - 6. BASICS trolley – Beside Assessment, Stabilization & Initial Cardiorespiratory Support
- F. Placental transfusion – optimal cord clamping
  - 1. 40% increase in blood volume
  - 2. Increase in red blood cells raises O<sub>2</sub> level in the blood.
  - 3. Stimulation of respiratory centers in the brain
  - 4. Nutrient rich 35 mg Iron
  - 5. Compromised by early cord clamping and cutting

### III. Third stage management in the water

- A. Physiologic management
- B. Active management
- C. Assessing blood loss
  - 1. Color, density, timing of occurrence
  - 2. Maternal physical assessment
  - 3. Don't wait – when in doubt, get out
- D. Nuchal cord
  - 1. Tears
  - 2. Rupture/avulsion
  - 3. Slow emergence – don't rush
  - 4. Reduce or unravel in the water
  - 5. Somersault maneuver

### IV. Why does a bath work so well? A physiology review

- A. When to enter the bath – response to immersion

1. Relief
  2. 90 minutes to 2 hours
- B. Archimedes Principle
1. Oxytocin/Vasopressin balance
  2. Decrease in catecholamine/increase in dopamine
  3. Specialized heart cells release of ANP
  4. Blood pressure reduction
  5. How long does effect last?
- C. Cluett Study – 99 women
- V. Birth in water – Integrating into maternity care
- A. Complexities of care – does water enhance normality?
- B. Routine Clinical practices
1. Auscultation
  2. Water temperature guidelines
  3. Fluids and eating
  4. Provider concerns
- B. Considering contraindications
1. Infection issues
  2. GBS
  3. Partners in the pool
  4. BMI issues
  5. VBAC (WBAC)
  6. Augmentation/Induction
  7. Complex needs – breech/twin
- D. Facilitating second stage in the water
- F. Baths increase the distribution of ecstatic hormones
1. Prostaglandins
  2. Oxytocin
  3. Beta Endorphins
  4. Prolactin
- VI. Primitive reflexes and normal delay of the shoulders in second stage
- A. Expression of four fetal reflexes
1. Asymmetric Tonic Neck Reflex
  2. Gallant Reflex
  3. Perez Reflex
  4. Placing Reflex

- B. Shoulder Dystocia prevention
  - 1. Upright posture
  - 2. Positions to open the pelvic outlet
  - 3. Letting sound out – no forced pushing
  - 3. 30 – 30 – 30 rule
    - a. 30 seconds of observation
    - b. 30 seconds of positional therapy
    - c. 30 seconds of different positional therapy
    - d. When to leave the tub
    - e. Should dystocia maneuvers
  - 4. Demonstration and practice
- C. Hands off versus delivering baby
  - 1. Signs of descent
    - a. Hump on the back
    - b. Station more important than dilation
    - c. Sounds
    - d. Sudden movement
    - e. Dilated pupils
    - f. Maternal cues
    - g. Be the quiet observer
  - 2. Vaginal exam through the water
    - a. Advantages/disadvantages
    - b. Alternative positions
    - c. Demonstration and practice
- D. Preventing Perineal Trauma
  - 1. Mother guided pushing
  - 2. Upright postures
  - 3. Letting the sound out
  - 4. As above so below
  - 5. Patience
- E. Emergency evacuation procedure
  - 1. Bed beside the tub
  - 2. Use the Silvalea Rescue Net

## VII. Prevention of Infection

- A. Microbiology of mother/baby/provider
  - 1. Testing the water quality
  - 2. Treating or filtering water
  - 3. Common sense guidelines
  - 4. Universal prevention practices
- B. What might contaminate the water?
- C. Types of infection
  - 1. Cleaning protocols

- 2. Reports in the literature
- D. Establishing an infection free environment

VII. Literature review

- A. Infection
  - 1. GBS
  - 2. PROM
- B. Cochrane database
- C. AABC
- D. UK Policy
- E. Perinatal outcomes
  - 1. Length of labour
  - 2. Other analgesia
  - 3. Perineal trauma
  - 4. PPH rates
  - 5. Apgar scores

VIII. Tubs and equipment

- A. Setting up your facility
- B. Pool choices
- C. Safety concerns
- D. Comfort measure
- E. Tour of hospital and birth center rooms

IX. Summary, Final questions, presentation of certificates