

## Meconium Stained Liquor - Full Clinical Guideline UHDB

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### 1. Introduction

Meconium stained liquor (MSL) occurs in 8 – 20% of all births after 34 weeks gestation. The incidence increases to over 30% of deliveries occurring after 42 weeks gestation. While the majority of labours with meconium stained liquor is not a cause for concern it is recognised that in some circumstances the passage of meconium in utero is associated with meconium aspiration syndrome. The effects of this include chemical pneumonitis, pneumothorax and persistent pulmonary hypertension.

### 2. Aim and Purpose

The aim of this guideline is to ensure that all midwifery, obstetric and paediatric staff know what actions to take when a baby is born through meconium stained liquor. This guideline should be read in conjunction with the following clinical guidelines:

- Immediate Care & Observation of the Newborn
- Newborn Resuscitation Policy
- Performing Newborn Life Support
- Guidelines for Admission to Neonatal Unit.

### 3. Definitions

Thick/significant meconium is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium.  
 Non-significant meconium is defined as light green, non tenacious with no lumps.

**4. Care in labour in the presence of meconium**

As part of the ongoing assessment the practitioner must document:

- the presence or absence of meconium
- the degree of meconium as being significant (thick) or non-significant (thin).

In the presence of meconium (any degree), care should take place in a unit with immediate access to neonatal services.

Please refer to Fetal monitoring in labour guideline for monitoring of non-significant meconium, change from clear to non-significant meconium in labour

**5. Thick/significant meconium or new meconium during labour**

In the presence of thick/significant meconium or new meconium (meconium stained liquor when clear liquor in earlier stage of labour documented):

- Care during labour to take place in an obstetric led unit with immediate access to neonatal services.
  - If this requires transfer, contact labour ward and arrange transfer by ambulance as soon as possible
- Continuous CTG monitoring is advised
- Ensure healthcare professionals trained in fetal blood sampling are available during labour
- Ensure healthcare professionals trained in advanced neonatal life support are readily available for birth
- In the presence of significant meconium a Neonatal or ANNP 1<sup>st</sup> on call doctor should be present at delivery

**6. Home birth or birth in standalone midwife led unit**

Transfer should be arranged, provided that it is safe to do so and the birth is unlikely to occur before transfer is completed.

If the woman refuses transfer or if birth is imminent:

- Explain risks to woman
- Arrange attendance of paramedic ambulance in preparation of neonatal transfer in the presence of significant meconium
- Call second midwife if not already present
- Contact Delivery Suite to inform them of events
- Maintain auscultation of the fetal heart rate as per fetal monitoring guidelines
- Check equipment in preparation for resuscitation

## 7. Immediate care of the newborn

*Guidance for neonatal team* in the presence of any degree of meconium:

- do not suction the baby's upper airways (nasopharynx and oropharynx) before birth of the shoulders and trunk.
- do not suction the baby's upper airways (nasopharynx and oropharynx) if the baby has normal respiration, heart rate and tone.
- do not intubate if the baby has normal respiration, heart rate and tone.

*Guidance for maternity team:*

An urgent paediatric review should be arranged in the following circumstances: transfer both the woman and baby if they are at home or in a free standing midwifery unit:

- Presence of significant meconium
- If any of the following is observed after **any degree** of meconium:
  - Respiratory rate above 60 per minute
  - The presence of grunting
  - Heart rate below 100 or above 160 beats per minute
  - capillary refill time above 3 seconds
  - body temperature of 38°C or above, or 37.5°C on 2 occasions 30 minutes apart
  - oxygen saturation below 95% (measuring oxygen saturation is optional after non-significant meconium)
    - presence of central cyanosis, confirmed by pulse oximetry if available. Be aware that some pulse oximeters can underestimate or overestimate oxygen saturation levels, especially if the saturation level is borderline. Overestimation has been reported in people with dark skin.

### 7.1. **Baby in good condition – crying**

If meconium stained liquor has been present and the baby is vigorous and breathing then the airway is not obstructed – the baby should be dried and given to their mother.

If non-significant meconium (thin) has been present:

- Complete a full set of observations at 1 and 2 hours of age
- Document observations on the Newborn Observation Trigger and Track chart
- If after 2 hours no concerns identified observations may be discontinued.

If significant meconium (thick) stained liquor has been present:

- Complete a full set of observations at 1 and 2 hours of age and then 2 hourly until 12 hours of age
- Document observations on the Newborn Observations Trigger and Track chart
- If after 12 hours no concerns are identified, observations may be discontinued.

**7.2. Baby in poor condition – poor tone, apnoea**

Neonatal team:

- Use the standard NLS algorithm, if chest rise is not seen after 5 inflation breaths, repositioning and delivering a further 5 inflation breaths, inspect the airway under direct vision.
- Routine suctioning of the airway of non-vigorous infants is likely to delay initiating ventilation and is not recommended.
- Rarely, an infant may require tracheal intubation and tracheal suctioning to relieve airway obstruction.

Maternity staff to carry out observations using Newborn NEWTT chart once baby is stable and remaining on maternity wards as described in 7.1.

**8. If condition deteriorates**

If any of the following are observed after **any** degree of meconium, ask the Paediatric 1<sup>st</sup> on call doctor to urgently assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit):

- respiratory rate above 60 per minute
- the presence of grunting
- heart rate below 100 or above 160 beats per minute
- capillary refill time above 3 seconds
- body temperature of 38°C or above, or 37.5°C on 2 occasions 30 minutes apart
- oxygen saturation below 95% (measuring oxygen saturation is optional after non-significant meconium)
- presence of central cyanosis, confirmed by pulse oximetry if available.

Be aware that some pulse oximeters can underestimate or overestimate oxygen saturation levels, especially if the saturation level is borderline. Overestimation has been reported in people with dark skin. See also the NHS England Patient Safety Alert on the risk of harm from inappropriate placement of pulse oximeter probes.

**9. Monitoring Compliance and Effectiveness**

As per business unit audit forward programme

**10. References**

- RCOG; Each Baby counts, neonatal care, management of babies through meconium stained liquor; October 2017
- <https://www.rcog.org.uk/media/3fopwy41/each-baby-counts-2015-full-report.pdf>
- National Institute for Clinical Effectiveness (NICE) Intrapartum care for healthy women and babies, clinical guideline CG190, Last updated 14 December 2022. [www.nice.org.uk](http://www.nice.org.uk)
- New Born Life Support guidelines, <https://www.resus.org.uk/library/2021-resuscitation-guidelines/newborn-resuscitation-and-support-transition-infants-birth>

**Documentation Control**

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	1	Nov 2011	Dr B Subramaniam	Revised - Previously within (R3 Amendments to standardize neonatal obs
	1.1	Oct 2013	Dr G Joshi	
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	3	Feb 2020	Dr B Subramaniam & Dr Muogbo	Merged with QHB WC/NP/53N
4	April 2023	Dr B Subramaniam	Updated Expired Guideline	
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<b>Job Title:</b> Consultant Paediatrician				
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