

# Jaundice - Transcutaneous Bilirubinometry



## Key Points

- Each TcB meter must have an operational check completed prior to use each day
- Screen babies visibly jaundiced if  $\geq 35/40$  and  $>24$  hours of age, or at time of their newborn screen
- Screen babies who are DAT positive without visible jaundice, including if  $<24$  hours of age and discuss result with Neonatal RMO
- SBR should be performed if TcB is above the set cut-off level
- SBR must be urgently performed if TcB is  $>300$  or a warning TcB level is displayed e.g. 000 /-0- /- - -

## 1. Purpose

This procedure outlines the requirement for use of transcutaneous bilirubinometry for babies at the Women's.

This procedure is related to: [Jaundice \(hyperbilirubinaemia\) in newborn babies  \$\geq 35\$  weeks gestation](#)

Where processes differ between campuses, those that refer to the Sandringham campus are differentiated by pink text or have the heading **Sandringham campus (W@S)**.

## 2. Definitions and Abbreviations

TcB Transcutaneous bilirubinometry: non-invasive screening technique used to determine the need for formal serum bilirubin (SBR) testing. TcB measurements have a linear correlation with SBRs, but the values are **not** the same.

SBR serum bilirubin

NICU Neonatal Intensive Care

WEC Women's Emergency Centre

## 3. Responsibilities

All nurses, midwives and medical staff caring for babies at The Women's.

## 4. Procedure

A range of Drager TcB meters are in use at the RWH and Sandringham.

Each device requires a daily operational check prior to use (details are on a laminated sheet attached to each device)

TcB meters are used to screen and determine the need for SBR testing in:

- babies  $\geq 35/40$  and  $>24$  hours of age who are visibly jaundiced, and who are neither receiving, or previously received, phototherapy
- all babies  $\geq 35/40$  who are not visibly jaundiced, at the time of their newborn screening test, either prior to discharge or at home,
- babies who are DAT positive and at risk of significant jaundice, but who are not visibly jaundiced and who may be  $<24$  hours of age – all results to be discussed with Neonatal RMO

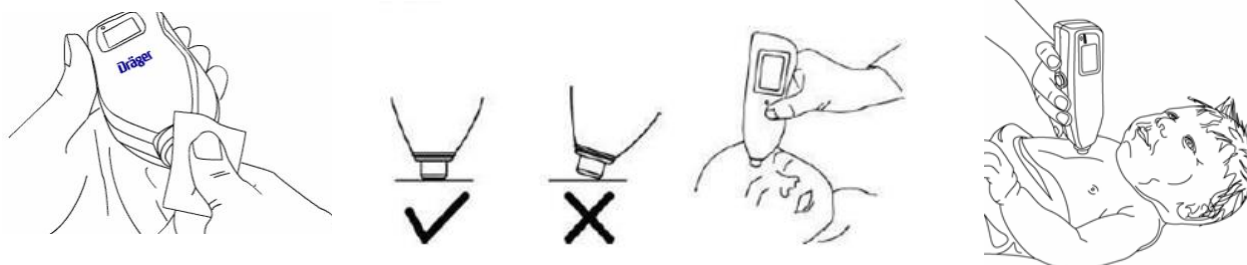
### 4.1 Measuring TcB

- Remove the jaundice meter from the charging unit and switch on
- Perform the daily operational check as per each device
- Note the number of measurements that the device will take as indicated on the display (n-1 indicates one measurement, n-3 indicates three measurements etc.)

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- d. Clean the tip of the probe with an alcohol swab
- e. Select measurement site: mid-sternum is preferred, the forehead can also be used
- f. Place the jaundice meter probe tip flat against the baby's skin, **not at an angle**, and press lightly until a click is heard.



- g. If the meter was set to take more than one measurement lift the meter from the skin between measurements. Average results will be displayed and this value should be documented.

## 4.2 Documentation of TcB results

To avoid any confusion with SBR results, clearly record the result as a TcB level in micromol/L ( $\mu\text{mol/L}$ )

Document the TcB result, including date and time, on:

- the 'Baby Observation and Feed Chart' (MR/379a) in Maternity
- the 'Neonatal Intensive and Special Care Chart' in NICU (MR/96)
- the 'RWH Emergency Department Clinicians Record (MR/43036) in WEC
- the 'Neonatal Graphic Observation and Response Chart MR R61N in section 'other' (Sandringham)

## 4.3 Requirement to perform a formal SBR level

SBR should taken (*without prior TcB*) if:

1. the baby is  $\geq 35$  weeks' gestation and  $< 24$  hours of age with visible jaundice
2. the baby is currently receiving, or has previously received phototherapy
3. the baby is  $< 35$  weeks' gestation

SBR should be taken *following* TcB if

4. the TcB is above the level shown in the table below; this should be done **URGENTLY** if the TcB is  $> 300$ , or if the TcB meter displays a warning reading e.g. -0- , - - - , or 000,
5. agreed, after discussion with the Neonatal RMO in a baby who is  $\geq 35$  weeks' gestation, DAT +ve,  $< 24$  hours old, who is not visibly jaundiced.

Age	Babies $\geq 38$ weeks gestation and $\geq 2500$ g	Babies 35 – 37 <sup>+6</sup> weeks gestation or $< 2500$ g
	TcB ( $\mu\text{mol/L}$ )	TcB ( $\mu\text{mol/L}$ )
<b>&lt; 24 hrs*</b>	Screen DAT +ve babies Perform SBR if visibly jaundiced (if at home, refer urgently to WEC)	
<b>24 - 48 hrs</b>	200	150
<b>49 – 72 hrs</b>	230	190
<b>73 – 96 hrs</b>	260	220
<b>&gt;96 hours</b>	290	250
If <u>first</u> TcB is within 20 $\mu\text{mol/L}$ below this value it should be repeated in 24 hrs		
If <u>any</u> TcB is $\geq 300$ $\mu\text{mol/L}$ (or a warning level is displayed e.g. -0- or 000), send an urgent SBR, blood group and DAT (if not already done) and notify the neonatal medical officer about need to commence phototherapy whilst awaiting SBR result		
*If TcB used to screen DAT +ve baby $< 24$ hrs old - discuss result with Neonatal RMO		

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## 5. Evaluation, monitoring and reporting of compliance to this procedure

Compliance to this procedure will be monitored, evaluated and reported through reduction in invasive blood tests.

## 6. References

1. Drager Jaundice meter JM-103. Sample usage protocol template.
2. RPA newborn care guidelines. (2006) Transcutaneous bilirubinometers. Sydney: Royal Prince Alfred Hospital <http://www.sswahs.nsw.gov.au/rpa/neonatal/html/docs/bilirubinometers.pdf>
3. RWH guideline: [Jaundice \(hyperbilirubinaemia\) in newborn babies ≥ 35 weeks gestation](#)
4. **W@S Procedure:** Jaundice (Hyperbilirubinaemia) in Newborn Babies more than 35 Weeks Gestation

## 7. Legislation/Regulations related to this procedure

Not applicable.

## 8. Appendices

Not applicable.

Please ensure that you adhere to the below disclaimer:

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