



## Routine Bilirubin Screening

***This process applies to babies  $\geq 35$  weeks gestation who are well with no clinical signs of jaundice. If a baby is jaundiced, a bilirubin measurement should be obtained, the results plotted on the treatment graph, and phototherapy initiated if indicated.***

### **A. Screening and reporting results**

- Obtain a total serum bilirubin (TSB) measurement<sup>1</sup> on every baby by 72 hours of age, prior to hospital discharge.
- Most commonly a total serum bilirubin (TSB) will be obtained with the newborn metabolic screen, between 24-48 hours of age, in order to minimize the number of painful procedures.
- Planning for discharge of healthy babies born at  $\geq 35$  weeks gestation should begin soon after birth and should include an estimated time for discharge. Whenever possible, the TSB should be drawn early enough so that results are available before the mother and baby are discharged.
- Plot the results on the 'predictive nomogram' against the age of the baby at the time the specimen was obtained. Most commonly, the TSB will be plotted by the nurse assigned to care for the baby at the time the results are forwarded from the lab.
- All TSB results must be reported to the ordering physician.

### **B. Determining need for DAT (Direct Antiglobulin Test) as part of the screening process**

A DAT should be performed on the baby's cord blood in the following situations:

- the TSB falls into the high or high-intermediate zone, regardless of gestation
- the TSB plots in the high, high-intermediate or low-intermediate zone and the baby's gestation is  $\leq 37^{6/7}$  weeks gestation

<sup>1</sup> Due to cost, extensive QA requirements, and user variability, the NS Hyperbilirubinemia Guidelines Implementation Working Group has not recommended that facilities purchase transcutaneous bilirubinometers for routine bilirubin screening. The CPS statement supports either serum or transcutaneous bilirubin (TcB) results, with cautions regarding reliable use of the transcutaneous bilirubinometer. If hospitals are currently using these devices, it is important to ensure the measurements are displayed in  $\mu\text{mol/L}$  and to follow product instructions in order to safely interpret results. The CPS recommends plotting the TcB with the value of the 95% CI for the device added to the results obtained by the meter.

**C. Determining need for DAT (Direct Antiglobulin Test) for clinical reasons and for babies for whom the screening process does not apply e.g. babies with jaundice**

A DAT should be performed on the baby's cord blood in the following situations:

- the baby develops early jaundice i.e. in the first 24 hours
- the baby develops jaundice after 24 hours and the mother's blood type is 'O' or unknown.
- there are positive (or unknown) maternal red blood cell (RBC) antibodies

**D. Determining need for follow up or treatment**

- If the baby is  $\leq 37\frac{6}{7}$  weeks gestation and DAT positive, and the TSB plots in the '**high**' zone, phototherapy is indicated.<sup>2</sup>
- If the baby is  $\leq 37\frac{6}{7}$  weeks gestation and DAT positive, and the TSB plots in the **high-intermediate** or **low-intermediate zone**, phototherapy should be carefully considered.
- Plotting results on the treatment graph for intensive (or conventional) phototherapy is recommended for *all* decisions around phototherapy. Conventional phototherapy may be considered for TSB levels 35 to 50  $\mu\text{mol/L}$  below those values indicated on the 'intensive graph', and may prevent development of moderate to severe hyperbilirubinemia.

Further testing within 24 hours is indicated:

- if the TSB plots in the **high zone** and phototherapy is not immediately required, regardless of gestation or DAT
- if the TSB plots in the **high intermediate** or **low intermediate zone** and the baby is  $35\frac{0}{7}$  to  $37\frac{6}{7}$  weeks gestation and DAT positive.

Further testing includes a repeat TSB as well as assessment for visible jaundice, adequacy of feeding and weight.

Follow-up within 24-48 hours is indicated if the TSB plots in the **high-intermediate zone**:

*And*

- the baby is  $\geq 38$  weeks and DAT **positive**

*Or*

- the baby is  $35\frac{0}{7}$  -  $37\frac{6}{7}$  weeks gestation and DAT **negative**

Follow-up includes a repeat TSB test and assessment for jaundice, feeding, and weight.

<sup>2</sup> A positive DAT (titre of  $\leq 1:8$ ) in an Rh negative mother may be related to administration of WinRho.

Refer to the following table to assist with interpretation of results:

Zone \ Gest. Age	≥ 38 weeks and DAT neg (If DAT indicated)	≥ 38 weeks and DAT pos (If DAT indicated)	35-37 <sup>6/7</sup> weeks and DAT neg (If DAT indicated)	35-37 <sup>6/7</sup> weeks and DAT pos (If DAT indicated)
High	Further testing or treatment	Further testing or treatment	Further testing or treatment	Phototherapy
High-Intermediate	Routine Care	Follow-up within 24-48 hours	Follow-up within 24-48 hours	Further testing or treatment
Low-Intermediate	Routine Care	Routine Care	Routine Care	Further testing or treatment
Low	Routine Care	Routine Care	Routine Care	Routine Care

#### E. Communication with parents and care providers

- Information about the rationale for hyperbilirubinemia screening should be provided for the parent(s). If the parent refuses screening, documentation in the infant's record should include this decision and a summary of the discussion that took place.
- A copy of the predictive nomogram should be provided to the parent on hospital discharge, if follow-up after discharge is indicated.
- If repeat testing is indicated following discharge, provide a laboratory requisition and ensure the parent is informed of the reason for, and the importance of this test.
- Ensure the baby's primary care provider, or other designated provider, is informed of all initial and follow-up TSB results, and the course of action that is recommended by CPS.

*Developed by the NS Hyperbilirubinemia Guideline Implementation Working Group, February, 2009. Revised October, 2009. May 2010. Minor updates June, 2015.*

