Hyperbilirubinemia Management in the Newborn Nursery for Infants 35 Weeks Gestation and Older

Clinician is considering phototherapy based upon transcutaneous bilirubin (TcB) and/or 2022 AAP Guideline[1]

Obtain total serum bilirubin (TSB) and direct bilirubin. Obtain DAT if indicated.[2]
If direct bilirubin > 50% TSB, consult pediatric gastroenterology.

TSB > 1 mg/dL below phototherapy threshold

- Do not start phototherapy*
- If DAT positive, obtain TcB or TSB at birth, q4h x 2, then q12h x 3 or until discharge
- If discharging and follow-up unavailable, discharge may be delayed.
- Follow-up per table below.

**Phototherapy threshold minus TcB or TSB level*It is an option to treat based on individual circumstances to reduce risk of readmission if TSB or rate of rise suggests a high likelihood of exceeding threshold after discharge.*

TSB within 1 mg/dL of OR ≥ phototherapy threshold

Is TSB within 2mg/dL of exchange transfusion?

No

- Start **intensive** phototherapy. (4 lights + blanket).
- Consider H&H if hemolysis present/suspected.
- Obtain DAT if indicated.[2]
- Repeat TSB within 12 h after initiation of phototherapy.
- Assess and consider rebound risk factors before stopping phototherapy.[3]
- Repeat TSB 6 to 12 h after stopping phototherapy AND the day after.

Yes

Escalation of Care

- Notify NICU to discuss transfer.
- Start **intensive** phototherapy (4 lights + blanket).
- **Obtain STAT** CBC, CMP
- Start IV fluids
- Measure TSB at least q2h

Follow-up Recommendations for infants ≥ 12 hours and who have not received phototherapy[1]

Phototherapy threshold minus TcB or TSB level		Follow-up Recommendations
0.1-1.9 mg/dL	Age < 24 h	Delay discharge Consider phototherapy Recheck TSB in 4 to 8 h
	Age ≥ 24 h	Recheck TSB in 4 to 24 h Options: Delay discharge, consider phototherapy Discharge with close follow-up
2.0-3.4 mg/dL	Regardless of age or dc time	TcB or TSB in 4 to 24 h
3.5-5.4 mg/dL	Regardless of age or dc time	TcB or TSB in 1 to 2 days
5.5-6.9 mg/dL	Discharging < 72 h old	Follow-up within 2 days; TcB or TSB per clinical judgment
	Discharging ≥ 72 h old	Clinical judgment
≥ 7.0 mg/dL	Discharging < 72 h old	Follow-up within 3 days; TcB or TSB per clinical judgement
	Discharging ≥ 72 h old	Clinical judgment

If infant is < 12 h of age, obtain TcB or TSB prior to discharge and a follow-up bilirubin measurement the next day. Discharge should be delayed if clinically significant jaundice is present or follow-up can't be arranged.

[1]AAP Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks Gestation, *Pediatrics*, e2022058859.

Hyperbilirubinemia Risk Factors

- Lower gestational age
- Jaundice in the first 24 h
- Predischarge bilirubin close to phototherapy threshold
- Hemolysis, any cause, known or suspected
- Rapid bilirubin rate of rise: ≥0.3 mg/dL/h in first 24h, ≥0.2 mg/dL/h thereafter
- Phototherapy before discharge
- Parent or sibling required phototherapy or exchange transfusion
- Possible inherited RBC disorder
- Exclusive breastfeeding with suboptimal intake
- Scalp hematoma or significant bruising
- Trisomy 21
- Macrosomic infant of a diabetic mother

Neurotoxicity Risk Factors

- Gestational age < 38 wk
- Albumin < 3 g/dL
- Isoimmune hemolytic disease (DAT+), G6PD deficiency, or other/suspected hemolytic condition
- Sepsis
- Clinical instability in last 24 h

[2]Indications for DAT*

- Maternal RBC antibody positive
- Phototherapy and maternal blood type O while newborn blood type A, B, or AB
- Jaundice first 24 h
- Rapid bilirubin rate of rise: ≥0.3 mg/dl/h in first 24 h, ≥0.2 mg/dl/h thereafter

[*]Can add on to cord blood if < 48 h old

[3]Rebound Hyperbilirubinemia Risk Factors

- Phototherapy at < 48 h of age
- Gestational age < 38 wk
- Hemolytic disease
- Higher TSB at time phototherapy stopped in relation to threshold

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