



How to Use BiliTool.org

1. Enter infant's age and total bilirubin level.
2. You will be brought to a Risk Stratification page with two recommendation tables.
3. The first table is recommended follow-up. It refers to the risk factors for development of severe hyperbilirubinemia.
4. The second table is recommendations for phototherapy. It refers to the risk factors for neurotoxicity.
5. Pay close attention to both tables. For example, infants with intermediate levels sometimes require phototherapy due to GA<38 weeks and/or neurotoxicity risk factors.

Phototherapy

1. Order using one of the following:
 - PED Pediatric Admission Power Plan → PED Phototherapy sub-phase
 - OB/Newborn orders folder → OB Newborn Phototherapy Power Plan
2. Check serum total bilirubin level Q12h (or more frequently if needed). If level is trending up, consult pediatrician and consider broadening differential and work-up. Note: Transcutaneous bilirubin is not reliable after phototherapy has been started. Check serum levels only.
3. Encourage frequent feeding, but try to limit time out of phototherapy to no more than 20 minutes Q3h.
4. IV fluids are unnecessary unless infant has signs of dehydration.
5. Keep infant supine with eye protection while under phototherapy.
6. May stop phototherapy when serum total bilirubin level is at least 3 mg/dL below the phototherapy initiation level, using the current hour of life.
7. **Obtain rebound bilirubin level 12 hours after stopping phototherapy if patient <72 hours old or if concern for hemolysis.**

Risk Factors for Development of Severe Hyperbilirubinemia

Use this list when determining follow-up.

- Jaundice < 24 hours of life
- ABO or Rh incompatibility, especially with positive antibodies
- GA less than 38 weeks
- Previous sibling received phototherapy
- Cephalohematoma or significant bruising

Neurotoxicity Risk Factors

Use this list when determining need for phototherapy.

- Isoimmune hemolytic disease
- G6PD deficiency
- Asphyxia
- Significant lethargy
- Temperature instability
- Sepsis
- Acidosis

Note: GA <38 weeks lowers the threshold at which BiliTool will recommend starting phototherapy.

Differential Diagnosis

- Benign neonatal hyperbilirubinemia
- Breastfeeding jaundice (<7 days of life)
- Breastmilk jaundice (>7 days of life)
- Ongoing hemolysis
- Sepsis or TORCH infections
- Biliary atresia
- Intestinal obstruction
- Idiopathic neonatal hepatitis
- Genetic causes (G6PD, etc.)

Breastmilk Jaundice

- Resolves by 3 weeks of age in 65% of infants.
- Another 20% may continue to have jaundice until 4 weeks of age.
- Consider this diagnosis of exclusion in a well-appearing breastfeeding infant with no risk factors for hemolysis with persistent hyperbilirubinemia without an upward trend.
- Confirm with serial measurements over two days. Admission not required.

Labs for Expanded Work-up

Consider obtaining for infants who develop jaundice at <24 hours of life, have rising levels despite phototherapy, or have recurrent jaundice.

- Blood type, DAT (Direct Antibody Test, or Coombs)
- CBC with manual differential, and reticulocyte count
- Electrolytes (to assess hydration and acidosis)
- Thyroid studies (if prolonged or recurrent)
- LFTs and GGT
- G6PD

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner. Approved by MSEC 4/6/21. Click [here](#) to see the supplemental resources for this guideline. If comments about this guideline, please contact Amy_Carson-Strnad@ykhc.org.