

# Infant Feeding in the Early Days

---

Dina Davidson RM IBCLC



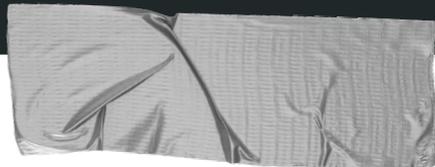
# Introduction

- **Registered midwife**  
Interdisciplinary collaborative care  
practice in Tri-Cities; RCH
- **Lactation consultant**  
Tri-Cities Infant Feeding Clinic
- **FHA Division of Midwifery**  
Division Head/Dept of OB

No conflicts of interest

# Feeding problems in the office

- Weight loss or insufficient gain
- Jaundice
- Sore nipples and/or engorgement
- **Misery**



# My Best Advice

- 1. *Feed that baby!*
- 2. *Empty the breasts.*
- 3. *Teach the baby how to breastfeed.*



## **1. Feed that baby!**

Ideally at the breast, every 2-3 hours, for 15 minutes/side for the first week or two.

If latching is painful or baby isn't gaining, supplementation is likely indicated.

## Supplementation:

Indicated if baby older than 4-5 days isn't gaining 20-50g/day, or if weight loss is excessive ( $\geq 8\%$  at 48 hours,  $\geq 10\%$  at any time)



# What to supplement with?

## What to use?

- *Ideally expressed breast milk (EBM) using a high-quality pump*
- *2nd line: donated milk*
- *3rd line: formula*

## How?

- If only small volumes needed, a dropper, cup or syringe is preferred
- If volumes >20mL/feed, likely a bottle is more practical
  - Narrow-neck bottle, slow-flow nipple



## 2. Empty the breasts

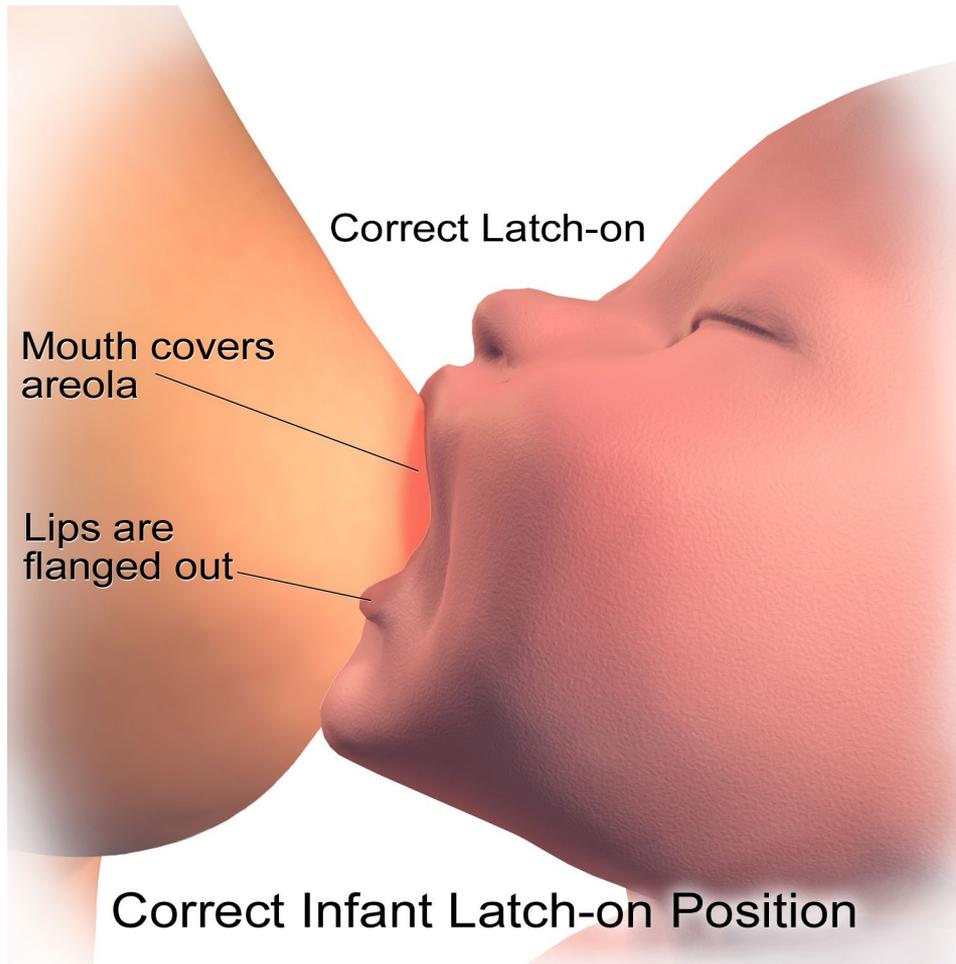
Protect the milk supply:

Breastfeeding on demand (minimum q2-3h) and/or high-quality pump

# Pumping basics

- Ideally double pump or hands-on pumping
- Minimum 6x/day, 8 is better is early days/weeks
- 15-20 minutes per side or 5 minutes past when milk stops flowing





### **3. Teach the baby how to breastfeed**

Basics: nose to nipple, tummy to tummy, infant head tipped back

This step may require extra help.



# Recap!

- *1. Feed that baby!*
- *2. Empty the breasts.*
- *3. Teach the baby how to breastfeed.*

Finding help:

## **Pathways**

<http://pathwaysbc.ca>

## **Canadian Lactation Consultants Association**

<https://www.clca-accl.ca>

## **UBC CPD: Latching On: How Family Physicians Can Support Breastfeeding Patients**

<https://ubccpd.ca>

THANK YOU

[dina.davidson@gmail.com](mailto:dina.davidson@gmail.com)

# Partnering with Public Health For a Team Based Approach to Post Natal Care

Dr. Althea Hayden & Alison Eller, Vancouver Coastal Health  
October 3, 2023



# Key Take Away Messages

**Universal reach to all families**

**Level of service & duration proportional to need through health equity lens**

**Overall goal of public health nursing is stabilization after discharge from hospital, then healthy child development & responsive parent, coping with the stressors in their lives**

**Physicians, NPs, midwives can refer prenatally, post partum or in early childhood**

# Universal Public Health Maternity Services

Phone contact/ assessment with all parents within 48 hours of hospital discharge

Face to face visits (home, clinic, community), phone and text follow up as needed for:

- Infant growth

- Feeding support

- Poor coping/ lack of supports

- Assessment of broader social determinant of health risks/protective factors

If your patient is struggling, refer to a public health nurse. *Note that some clients will already have been working with a PHN prenatally.*

# Enhanced services for socially vulnerable

Build long term trusting relationship

Help with systems navigation & linkage to community resources

Direct, regular work with Parent and Child eg.

- Healthy relationships & safety (IPV)
- Mental health and coping
- Parental self sufficiency
- Responsive parenting
- Child's physical, social & emotional development

Follow families up to ages 2-5 depending on needs/region

**Improves long term outcomes for families!**

# Different Programs in Different Places

Health Authority	Program	How to Refer
<b>Fraser Health</b> (registry)	Seamless Streams (NFP, Enhanced Family Visiting, Best Beginnings)	<a href="#">Fraser Health – Best Beginnings Prenatal Registration Form</a>  <a href="mailto:NUXX105256D_SeamlessPerinatalCa@fraserhealth.ca">NUXX105256D_SeamlessPerinatalCa (fraserhealth.ca)</a>
<b>Interior Health</b> (registry)	Healthy From the Start (NFP, Enhanced Family Services)	<a href="https://www.interiorhealth.ca/health-and-wellness/pregnancy-and-childbirth/prenatal-connections/healthy-from-the-start-eform">https://www.interiorhealth.ca/health-and-wellness/pregnancy-and-childbirth/prenatal-connections/healthy-from-the-start-eform</a>  Or call <b>1-855-868-7710</b>
<b>Island Health</b> (registry)	Right From the Start	<a href="https://surveys.viha.ca/surveys/rftsregistration.aspx">https://surveys.viha.ca/surveys/rftsregistration.aspx</a>  Or call your local Public Health Unit
<b>Northern Health</b>	Prenatal/ Post-partum support via Primary and Community Care(PCC)	<a href="#">Pregnancy support questionnaire (northernhealth.ca)</a>
<b>Vancouver Coastal Health</b>	Prenatal & Early Years Program	<a href="#">PRENATAL, POSTPARTUM AND EARLY CHILDHOOD PUBLIC HEALTH NURSING REFERRAL (vch.ca)</a>

# BC Pregnancy Outreach Programs

BCAPOP

HOME ► MEMBERSHIP PROGRAM DIRECTORY TRAINING & EVENT SCHEDULE RESOURCES ► STORE DONATE CONTACT US

## WHAT IS BCAPOP?

BCAPOP is a registered charity that is widely recognized for its support, advocacy, and leadership to improve outcomes for pregnant, postpartum, and newly parenting people and their infants.

LEARN MORE



BCAPOP-<https://www.bcapop.ca/POP-Programs>

# Rural Remote First Nations



## Call MaBAL



**The Real-Time Virtual Support Maternity and Babies Advice Line (MaBAL) is free and friendly and available to physicians, residents, nurses, midwives, nurse practitioners and other providers.**



### Ask a question

Have a question about pregnancy, labour, or early postpartum care? Reach out anytime. We're available 24/7.

### Get a prescription

Is your sick patient also pregnant? Consult with a MaBAL doctor for advice on prescription and over the counter medications.



Maternity and Babies Advice Line: <https://rccbc.ca/initiatives/rtvs/mabal/>

# New Resource - Financial Help for Pregnancy & Post Partum

- Can be found at the following [link](#)
- Designed to support pregnant individuals and parents across BC with interventions for poverty reduction and food security as recommended in the [BC Poverty Intervention Tool for Primary Care Providers](#).
- Printed poster has QR code for electronic sharing



one  
VCH



## FINANCIAL HELP FOR PREGNANCY

Pregnancy and parenting can mean extra costs. Below are some programs in BC that might help. If you need help accessing any of these programs, connect with your local pregnancy outreach program, women's centre, health centre, youth centre, settlement centre, or Indigenous health centre.

### » In Pregnancy

#### Pregnancy outreach programs

Supports pregnant people in need. May have: drop-in groups, meals or snacks, grocery store gift cards, vitamins, and access to health professionals.

To find out who can join, find your local program at [The Pregnancy Hub online directory](#).



#### Income assistance

Available to people not working/unable to work, or not earning enough to meet basic needs. Must complete an [eligibility assessment](#). Use [My Self Serve](#) to apply. For help with application call 1-866-866-0800.

Natal Supplement: \$80/month during pregnancy until baby is 1 year old.

Prenatal Shelter Supplement: Maximum of \$195/month. Can combine with Natal Supplement. For pregnant people who are single, are on income or disability assistance, and who do not already have children. You will need a note from doctor or midwife with expected due date. Apply early as benefits are not retroactive.

#### Disability assistance

Helps people in financial need with a physical or mental impairment expected to last at least 2 years.

Must be at least 18 years old, designated as a Person with Disabilities by a doctor or nurse practitioner and meet financial eligibility. Can also apply for Natal and Prenatal Shelter Supplement (see above). Use [My Self Serve](#) to apply. For help with application call 1-866-866-0800.

#### Doulas for Aboriginal families grant program

Provides up to \$1200 for doula support in pregnancy or after birth.

For pregnant Indigenous people in BC. For more information see [BC Aboriginal Friendship Centre](#) website or call 250-388-5522 ext 267 or e-mail [doula@program@bcaafc.com](mailto:doula@program@bcaafc.com).

#### First Nations Health Authority Benefits Coverage

Pays for medical items and services including prenatal vitamins, mental health, vision and oral health.

People with "Indian status" who live in BC can enroll. For more information see [FNHA Health Benefits](#) website and [Coverage for Pregnancy and Infant care](#) or call Health Benefits at 1-855-550-5454.

#### Jordan's Principle

Responds to unmet health, social and educational needs of First Nations children who are under 19 years old in

# Take Home Messages

***Public health has a mandate to provide***

- 1. Universal post-partum follow up***
- 2. Enhanced programs to support vulnerable families***

***If your patient is struggling or you need help caring for them you can make a referral or call public health.***



# Care of the Newborn

Understanding Jaundice in the neonate

# Important Physical Findings

- The newborn should have a physical exam and weight check within the first week of discharge.
- Ascultate heart and lungs first, hopefully while the newborn is quiet, then do a head to toe exam. Get the baby naked. Open the diaper. Note tone and primitive reflexes. Any dysmorphic features.
- If there is a murmur, check right brachial pulse and compare to femoral pulse, check pre- and post-ductal SpO<sub>2</sub>.
- A port wine stain on the eyelid, forehead, temple needs an ophthalmology exam for possible Sturge Weber Syndrome.
- Check the red reflex for leukocoria which can be seen with cataracts, ROP, tumour. A large cornea can indicate glaucoma.
- Cephalhematoma can indicate increased risk of hyperbilirubinemia.
- Confirm that hearing screen was done and passed. Check the Newborn Screen results.

- Sturge-Weber Syndrome





Congenital cataract



Leukocoria



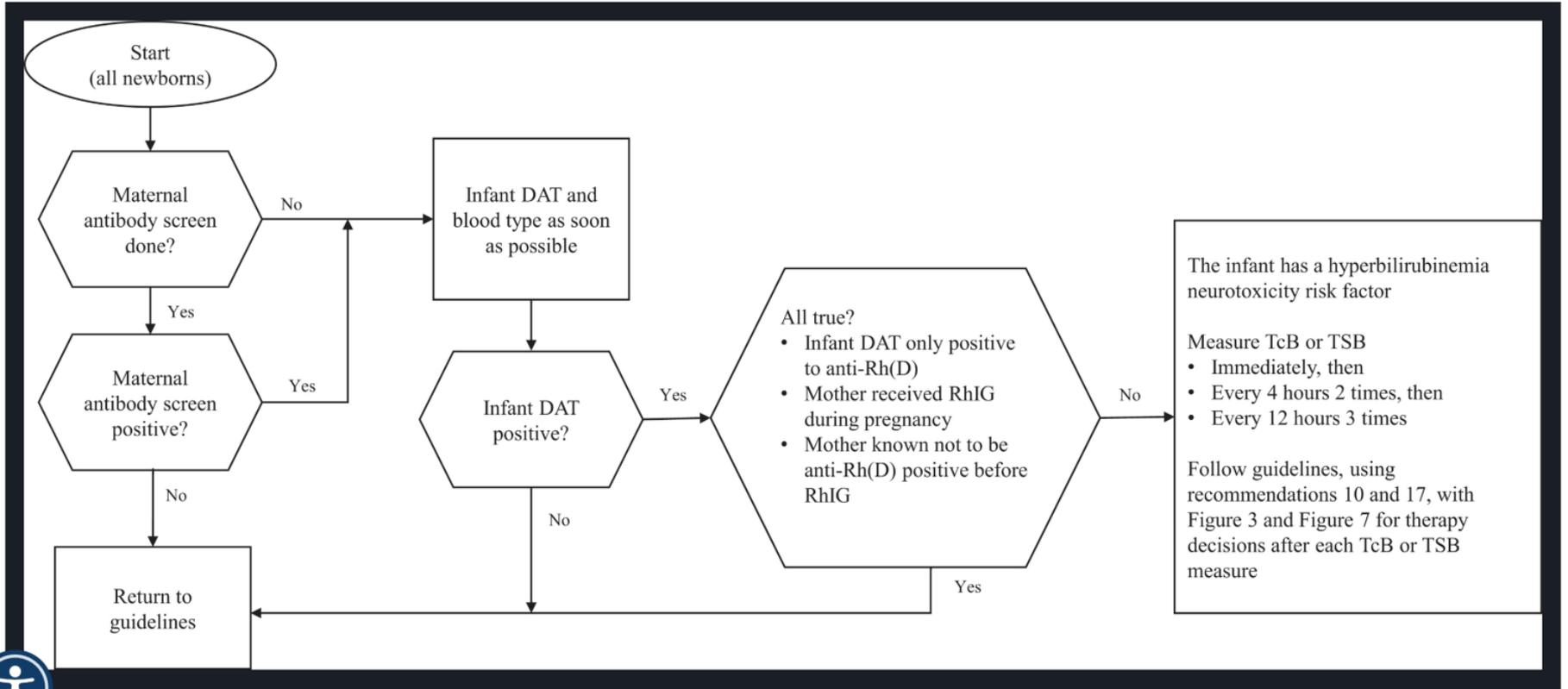
Congenital glaucoma

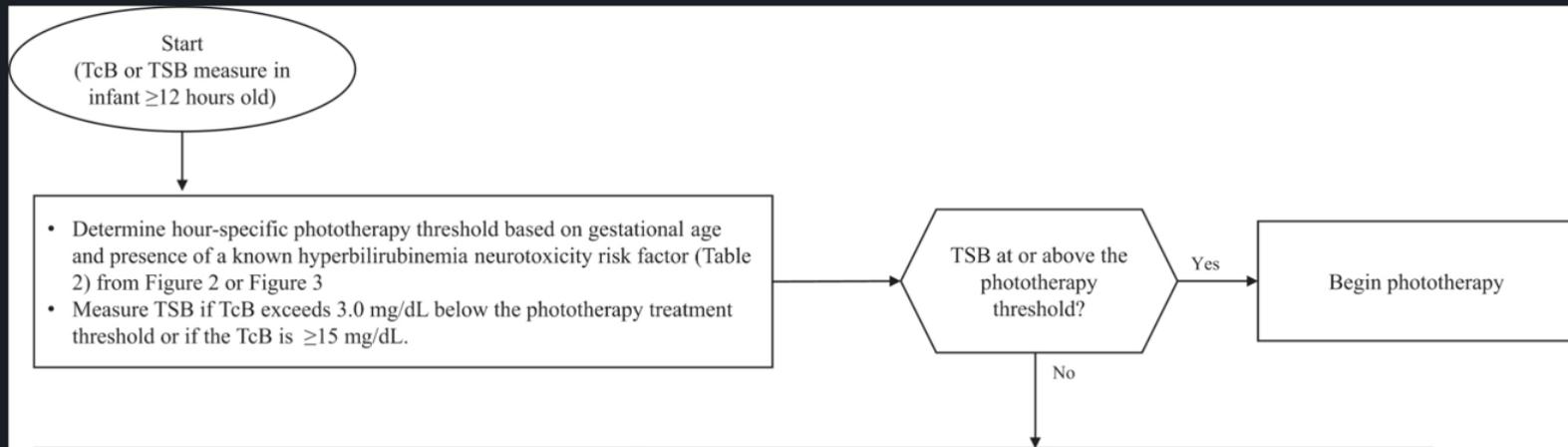
# Neonatal Jaundice



- Breastfeeding jaundice-better defined as breastfeeding failure jaundice
- Breast milk jaundice-prolonged jaundice thought to be from an enzyme in mother's milk
- Hemolytic jaundice-ABO incompatibility, fetomaternal hemorrhage
- BIND
  - ABE-Acute Bilirubin Encephalopathy
  - CBE (formerly known as kernicterus)-Chronic Bilirubin Encephalopathy
- AAP Clinical Practice Guideline Revision 2022

**FIGURE 1**





Phototherapy threshold minus TcB or TSB		Discharge Recommendations
0.1-1.9 mg/dL	Age <24 hours	Delay discharge, consider phototherapy, measure TSB in 4 to 8 hours
	Age $\geq 24$ hours	Measure TSB in 4 to 24 hours <sup>a</sup> Options: <ul style="list-style-type: none"> <li>Delay discharge and consider phototherapy</li> <li>Discharge with home phototherapy if all considerations in the guideline are met</li> <li>Discharge without phototherapy but with close follow-up</li> </ul>
2.0-3.4 mg/dL	Regardless of age or discharge time	TSB or TcB in 4 to 24 hours <sup>a</sup>
3.5-5.4 mg/dL	Regardless of age or discharge time	TSB or TcB in 1-2 days
5.5-6.9 mg/dL	Discharging <72 hours	Follow-up within 2 days; TcB or TSB according to clinical judgment <sup>b</sup>
	Discharging $\geq 72$ hours	Clinical judgment <sup>b</sup>
$\geq 7.0$ mg/dL	Discharging <72 hours	Follow-up within 3 days; TcB or TSB according to clinical judgment <sup>b</sup>
	Discharging $\geq 72$ hours	Clinical judgment <sup>b</sup>

- Neurotoxicity develops at much higher levels than previously thought
- Timely post-discharge follow up is very important
- If there was phototherapy, check for a rebound 24 hours after discontinuation
- Supplemental formula, expressed mother's milk, or donor milk can be considered

# G6PD

- X-linked recessive
- Most affected infants will not have a positive family history
- Severe hyperbilirubinemia, atypical development of hyperbilirubinemia, elevated TsBili in a formula fed infant, late onset jaundice
- Can develop sudden, extreme elevation in TsBili
- Screening for G6PD during or shortly after a hemolytic event can give false normal results
- If suspicion is high, repeat testing in three months

# Gilbert Syndrome

- Autosomal recessive
- Unconjugated hyperbilirubinemia
- No treatment required
- Many triggers
- Diagnosis of exclusion
- CBC with diff, liver enzymes, T and D bill

# Cholestasis

- Conjugated hyperbilirubinemia
  - Any D. Bili  $\geq$  to 1.0 mg/dl is abnormal, the cutoff used is  $\geq$  0.3 mg/dl
  - Repeat in a few days to two weeks, a rise suggests cholestatic disease
- In term infants the most common cause is biliary atresia
  - Do an urgent ultrasound of the liver
  - CBC with diff, CMP, T and D bill, ALT, AST, Alk Phos, GGT, total protein, albumin, PT/PTT/INR
  - Consider sepsis, hypothyroidism, panhypopituitarism, and IEM
  - Alpha-1-antitrypsin deficiency, testing for cystic fibrosis
- In preterm infants it is more frequently from TPN or sepsis

# Pathways Resources

- Clinician Tools: Calculators— [BiliTool](#)
- Clinician Tools: Guidelines— [Hyperbilirubinemia-Detection, Management and Prevention \(CPS guidelines\)](#)
- Patient Info: Handouts— [Newborn Care-Jaundice \(CPS guidelines\)](#)
- Pearls: [Choosing Wisely](#)

# Screening Tools Available to You

- BiliTool
- PediTool
- Bhutani Nomogram
- In development at University of Washington is the BiliCam, an app using the smart phone camera.

# BiliTool

[bilitool.org](http://bilitool.org)

The screenshot shows the BiliTool website interface. At the top, the browser address bar displays "bilitool.org". The page header includes the BiliTool logo and the CoSense ETCOCeST logo with the tagline "The Gold Standard For Identifying and Quantifying Hemolysis".

The main content area is titled "Newborn values:" and features a "Reset" button. It is divided into two options:

- option one:** Includes fields for "Birth date:" (calendar icon, "Birth..."), "Birth time:" (clock icon, "Choose time..."), "Sampling date:" (calendar icon, "Sampling..."), and "Sampling time:" (clock icon, "Choose time...").
- option two:** Includes a field for "Age (hours) at sampling:" (info icon) with a value of "1-336 hours" and radio buttons for "or" and "L".

Below these options, there is a "Total Bilirubin:" field (info icon) with a "Units:" dropdown menu set to "mg/dL (US)". A "Gestational age:" field is also present.

The left sidebar contains navigation links: "Based on 2022 Guidelines", "Latest Features **New!**", "RISK FACTORS" (Neurotoxicity, Hyperbilirubinemia), "RESOURCES" (2022 AAP Guidelines, AAP Flowcharts), and "ABOUT BILITOOL" (About, BiliTool EMR, Contact Us, Disclaimer).

On the right side, there is a section titled "2022 AAP Hyperbilirubinemia Guidelines" with a "What's new?" sub-section containing a bulleted list of updates:

- Highlights the challenge of identifying G6PD deficiency in infants.
- Bases follow-up testing on the difference between bilirubin level and the phototherapy threshold. No more risk zones!
- Raises thresholds for phototherapy and exchange transfusion.
- Includes gestational age and risk factors for neurotoxicity in the thresholds.
- Adds when to check for rebound after stopping phototherapy.
- Offers how to provide intensive phototherapy and when home phototherapy is an option.
- Introduces "escalation of care" for serum bilirubin close to exchange transfusion level.

At the bottom of the page, there is a footer with copyright information: "© 2004-2023 - BiliTool, Inc. | Tried. True." and a version indicator: "Version 2.2.3 | System Status".

# Pedi Tool

[peditool.org/bili2022](http://peditool.org/bili2022)

The screenshot shows a web browser at the URL `peditools.org/bili2022/`. The page header includes the Peditools logo with the tagline "Clinical tools for pediatric providers" and a navigation menu with links for "PediTools", "What's new", "About PediTools", "Contact us", "Sitemap", and "iOS Fenton 2013".

### Age and Bilirubin

Gestation at birth (35 to 40+ weeks)

Age (hours) (1 to 336 hours)

Bilirubin (mg/dL) (optional)

Neurotoxicity risks (required)  No risk factors  
 ANY risk factors  
 Show both

Plot scale  Automatic  
 Full-sized

Plot choice  PediTools custom  
 Original publication

[Reset form](#)

---

#### Optional age calculator

Date of birth

Date of measurement

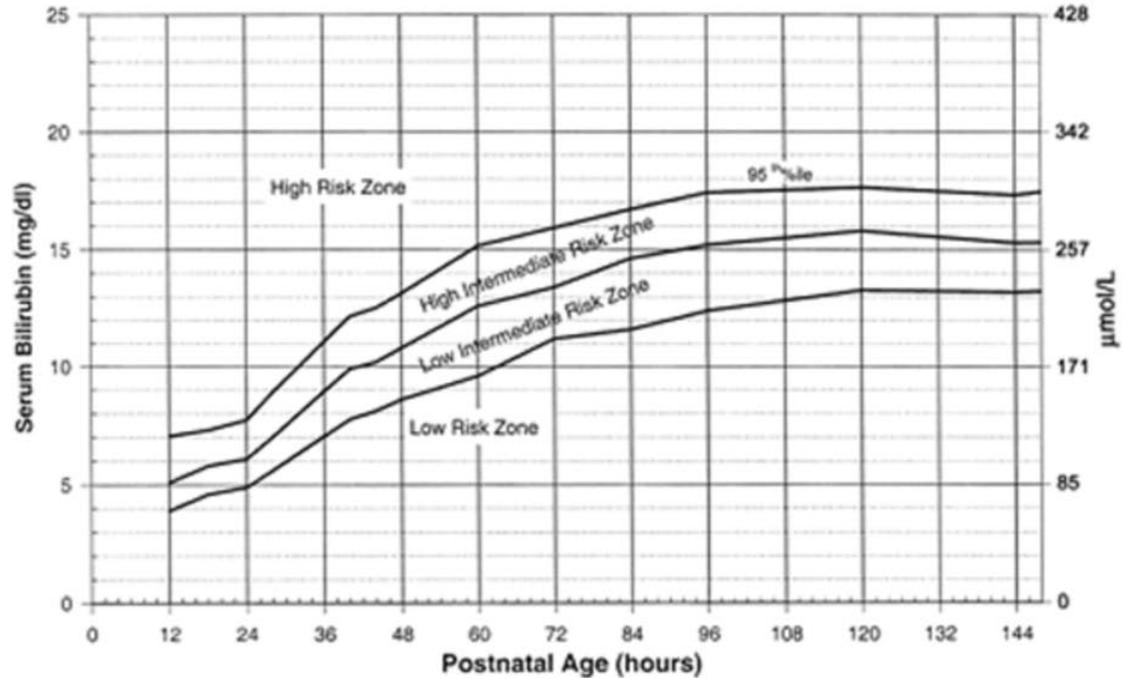
### AAP 2022 Hyperbilirubinemia management guidelines

Calculator and clinical decision support for the AAP 2022 guidelines for the management of hyperbilirubinemia in newborns 35 or more weeks of gestation.

#### Features

- Neurotoxicity risk factors absent, present, or both
- Plot multiple time points to assess trends
- Original and **easier to interpret custom plots**
- Zoomed in and full 0-336 hour plots
- Phototherapy discontinuation decision support
- Post-discharge follow-up decision support
- Rate of increase between last two measurements
- Flags when TcB should be confirmed with TSB

# Bhutani Nomogram



When using this nomogram, remember that "risk" refers to the risk of a subsequent bilirubin level in that infant >95th percentile for age.