

<b>GutCheck<sup>NEC</sup> (&lt; 1500 grams)</b>				<b>Points</b>
<b>Gestational age (weeks)</b> (9 max.) Calculate GA in weeks at birth based preferably on due date determined by 1 <sup>st</sup> trimester ultrasound. If that is unavailable, use the gestational age assessment at delivery (Ballard or Dubowitz)	<28 9 points	28-31 6/7 8 points	≥ 32 0 points	
<b>Race</b> (2 max) If the infant is either Black or Hispanic race assign 2 points. If both, assign only 2 points. If not Black or Hispanic, assign 0 points.	Black 2 points	Hispanic 2 points	Other races 0 points	
<b>Outborn</b> (3 max) If the infant is transferred into this center from another hospital at any time after birth, assign 3 points.		Yes 3 points	No 0 points	
<b>NICU NEC rate</b> (23 max.) This is the annual calculated NEC rate for infants weighing less than 1500 grams at delivery. If < 2%, assign 0 points. If you do not know your rate, assume 16 points.	2-4.99% 9 points	5-7.99% 16 points	8-11.99% 19 points	> 12 % 23 points
<b>Exclusive human milk feeding</b> (0 max) Defined as human milk fed at both day 7 and day 14 of life. Volume of human milk fed is not defined. If <i>any</i> milk is fed at <i>both</i> day 7 and day 14, <u>subtract 3 points</u> from the total score. Points cannot be subtracted until day of life 14.		Yes -3 points	No 0 points	
<b>Probiotics</b> (0 max) If any probiotic preparation has been given at any dose or any volume, <u>subtract 5 points</u> from the total score.		Yes -5 points	No 0 points	
<b>How many culture-proven infections has the infant had since day 3 of life?</b> (6 points max)	One 4 points	Two 6 points	None 0 points	
<b>Packed Red Blood Cell transfusion history</b> (8 max) If any PRBC transfusion has been given, regardless of feeding status or volume given. Once the infant receives a transfusion, from that time on it is scored "yes." Highest risk for NEC is associated within 48 hours of the transfusion. Be especially aware if HgB < 8.		Yes 8 points	No 0 points	
<b>Hypotension treated with Inotropic Medication</b> (4 max) If hypotension is severe and medications such as dopamine, dobutamine or milrinone are given to treat it, regardless of dose, frequency or duration of treatment. Once this is "yes" it stays "yes".		Yes 4 points	No 0 points	
<b>Metabolic Acidosis</b> (3 max) After the 1 <sup>st</sup> 12 hours of life, if the infant experiences metabolic acidosis score "yes." This is defined as low pH associated with low serum bicarbonate ( $\text{HCO}_3^- < 17$ ) but normal or near normal pCO <sub>2</sub> (pH < 7.30) or lactate > 6.1 mmol/L. If ordering clinician (physician, NNP, PA-C) documents "metabolic acidosis" code as "yes." Consider new metabolic acidosis (especially if platelets are low) in an infant with non-specific abdominal signs as concerning. It has been associated with most severe NEC forms.		Yes 3 points	No 0 points	
<b>Score by 72 hours of life then q12-24 hrs. Rescore if new risk factor added and at 7, 14, 21, and 28 days of age. Low risk= &lt;20 points, Moderate risk= 20-32 points, High risk= 33-36 points, Very high risk &gt; 36 points</b> (especially at 72 hours of age). Scores typically range from 8-58 points.				

Gephart, S. M., Spitzer, A. R., Effken, J. A., Dodd, E., Halpern, M., & McGrath, J. M. (2014). Discrimination of GutCheck(NEC): a clinical risk index for necrotizing enterocolitis. *J Perinatol*, 34(6), 468-475.  
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<http://neczero.nursing.arizona.edu/>

**GutCheck**  
Neonatal NEC Risk Index

## Structured communication form for clinical concern when NEC is suspected

S	<p><b>Situation:</b> Purpose of call</p> <p>Hello, this is _____, I am calling about _____ in room _____ because I have some concerns about his/her assessment.</p>
B	<p><b>Background:</b> All pertinent risk factors and recent history</p> <p>Gestational Age _____ Corrected GA _____ Day of Life _____</p> <p>Risk Score (GutCheck<sup>NEC</sup>) _____</p> <p>Feeding type (EBM, fortified?) and tolerance _____</p> <p>Transfusion within the last 48 hours? _____</p> <p>Relevant history _____</p>
A	<p><b>Assessment:</b> Give your conclusion about the present situation based on assessment</p> <p>Is the parent concerned? Y N</p> <p>Increase in apnea/bradycardia spells? Y N</p> <p>Blood present in stool or emesis? Y N</p> <p>Change in color, fullness, or feel of abdomen? (Dusky or red especially concerning) Y N</p> <p>Change in abdominal girth &gt; 1cm? Y N</p> <p>Bowel sounds present? Y N</p> <p>Feeding tolerance: Residual color, amount, dark bilious? Y N</p> <p>Emesis in last 24 hours? Y N</p> <p>Stooling? Y N Change in general skin color or perfusion? Y N</p> <p>Behavior: Irritability (early) or lethargy (late)? Y N</p> <p>Tachycardia at rest? Y N Hypotension? Y/N</p> <p>Temp<sub>max</sub> &amp;/or Temp<sub>min</sub> x 24 hours outside normal limits? Y N</p> <p>Significant increase in isolette temperature? Y N</p>
R	<p><b>Recommendation:</b> Clarify expectations – may differ with severity of situation or institutional policy- ASK for something specific</p> <ul style="list-style-type: none"> <li>○ Hold feeding?</li> <li>○ Abdominal x-ray?</li> <li>○ Come in to see baby?</li> <li>○ Order sepsis workup?</li> </ul>
<p>Content based on evidence about NEC risk and clinical presentation (Christensen et al., 2010; Gephart, Wetzel, &amp; Krisman, 2014; Gregory, Deforge, Natale, Phillips, &amp; Van Marter, 2011)</p>	

- Christensen, R. D., Wiedmeier, S. E., Baer, V. L., Henry, E., Gerday, E., Lambert, D. K., . . . Besner, G. E. (2010). Antecedents of Bell stage III necrotizing enterocolitis. *J Perinatol*, *30*(1), 54-57. doi:10.1038/jp.2009.93
- Gephart, S. M., Wetzel, C., & Krisman, B. (2014). Prevention and early recognition of necrotizing enterocolitis: a tale of 2 tools--eNEC and GutCheckNEC. *Adv Neonatal Care*, *14*(3), 201-210; quiz 211-202. doi:10.1097/anc.0000000000000063
- Gregory, K. E., Deforge, C. E., Natale, K. M., Phillips, M., & Van Marter, L. J. (2011). Necrotizing enterocolitis in the premature infant: neonatal nursing assessment, disease pathogenesis, and clinical presentation. *Adv Neonatal Care*, *11*(3), 155-164; quiz 165-156. doi:10.1097/ANC.0b013e31821baaf4