Oxygen Reduction Challenge

For preterm infants (≤ 32 weeks at birth) receiving nasal cannula O₂ of ≤ 1 LPM. Infants must not be on mechanical ventilation, NCPAP or Vapotherm. The purpose of this test is to provide an objective physiologic definition of BPD based on a need for supplemental oxygen. The test will be ordered by the MD/NNP to occur at 36 weeks corrected gestational age.

(This challenge may also be performed with any infant regardless of gestational age in order to determine their need for supplemental oxygen.)

Test should be performed:
- 30 minutes after a feeding
  (If on continuous feeds may be tested at any time)
- on continuous cardio-respiratory monitoring
- in usual baseline O₂, with pulse oximeter probe on any extremity
- with infant in supine position
- during sleep or awake state

_Discontinue test if O₂ sats <80% for 30 seconds, apnea > 20 seconds, or bradycardia with HR < 80 for > 10 seconds._

Five Phases:

I. **Baseline**: On page two, record values for HR, RR, and O₂ sats within 15 minutes prior to challenge. (RN documents hourly vital signs as normally would in HED; RN documents initiation of Challenge in HED under Respiratory Interventions.)

II. **Reduction of Flow/O₂**:

   **For infants on blended oxygen by nasal cannula:**
   1. Slowly wean oxygen blender to 21% FIO₂ over 30 minutes.

   2. If weaned successfully to 21% FIO₂, wean flow by 20% q 5 minutes
      Example: Starting flow 1 lpm (1 X 20% = 0.2)
      Reduce flow Q 5 minutes as follows:
      1. 0.8 lpm
      2. 0.6 lpm
      3. 0.4 lpm
      4. 0.2 lpm
      5. Off

   3. Once flow is off, remove cannula from nose but do not remove tubing from face, so as not to disturb infant.

   4. Go to third phase.
For infants on non-blended oxygen by nasal cannula

1. Slowly wean patient to room air by decreasing flow in small increments over 30 minutes.
2. Once flow is off, remove cannula from nose but do not remove tubing from face, so as not to disturb infant.
3. Go to third phase.

III. Room Air Observation: if saturations have been \( \geq 90\% \) while weaning to room air, continue to observe in room air for 30 minutes.

IV. Return to Baseline: place infant back on baseline \( O_2 \).

V. Record and Report:

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Time</th>
<th>Flow</th>
<th>FIO(_2)</th>
<th>HR</th>
<th>RR</th>
<th>SPO(_2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start (Baseline)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>End of Test</td>
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<tr>
<td>End of 30 Min Observation</td>
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</tbody>
</table>

Oxygen Reduction Test Report

(RT will document results in Starpanel and will notify team of results.)

Weaned to RA for 30 minutes : Yes [ ] No [ ]

Oxygen wean limited by:

- \( O_2 \) Saturations 80-89\% for > 5min
- \( O_2 \) Saturations < 80\% for 30 seconds
- Increased apnea (no breaths > 20 seconds)
- Bradycardia; < 80 bpm for > 10 seconds
- Failed to wean to 21\% FIO\(_2\)
- Failed to wean NC flow to off


*Updated December 10, 2008*