

**Randomized controlled trial of oxygen saturation targets in very preterm infants: two year outcomes.** *J Pediatr.* 2014 Jul;165(1):30-35.e2. doi: 10.1016/j.jpeds.2014.01.017. Epub 2014 Feb 20. Darlow BA, Marschner SL, Donoghoe M, Battin MR, Broadbent RS, Elder MJ, Hewson MP, Meyer MP, Ghadge A, Graham P, McNeill NJ, Kuschel CA, Tarnow-Mordi WO; Benefits Of Oxygen Saturation Targeting-New Zealand (BOOST-NZ) Collaborative Group.

### **Objective**

To assess whether an oxygen saturation (Spo<sub>2</sub>) target of 85%-89% compared with 91%-95% reduced the incidence of the composite outcome of death or major disability at 2 years of age in infants born at <28 weeks' gestation.

### **Study Design**

A total 340 infants were randomized to a lower or higher target from <24 hours of age until 36 weeks' gestational age. Blinding was achieved by targeting a displayed Spo<sub>2</sub> of 88%-92% using a saturation monitor offset by  $\pm 3\%$  within the range 85%-95%. True saturations were displayed outside this range. Follow-up at 2 years' corrected age was by pediatric examination and formal neurodevelopmental assessment. Major disability was gross motor disability, cognitive or language delay, severe hearing loss, or blindness.

### **Results**

The primary outcome was known for 335 infants with 33 using surrogate language information. Targeting a lower compared with a higher Spo<sub>2</sub> target range had no significant effect on the rate of death or major disability at 2 years' corrected age (65/167 [38.9%] vs 76/168 [45.2%]; relative risk 1.15, 95% CI 0.90-1.47) or any secondary outcomes. Death occurred in 25 (14.7%) and 27 (15.9%) of those randomized to the lower and higher target, respectively, and blindness in 0% and 0.7%.

### **Conclusions**

Although there was no benefit or harm from targeting a lower compared with a higher saturation in this trial, further information will become available from the prospectively planned meta-analysis of this and 4 other trials comprising a total of nearly 5000 infants.