

Oxygen monitoring in the NNU

Background

- There is very limited evidence to tell us what oxygen saturation levels to aim for. Studies so far have only really compared two different ranges.
- Saturation monitors spend a lot of time alarming, especially if the limits are narrow
- **The monitors alarm when the limit is crossed, not when it is reached, so an upper alarm limit of 95% means that it alarms at 96%**
- Recent data suggest that maintaining saturations >94% between about 32 weeks gestation and term increases the severity of chronic lung disease and lengthens the duration of requirement for oxygen
- It is possible that modest excess oxygen contributes to the number of infants who eventually go home in oxygen
- **There is no evidence that brief desaturations are harmful**
- **They occur frequently in healthy term infants as well as in preterm infants**
- **We are not worried about them and do not need to respond to them by adjusting FiO₂**

Guidelines for monitoring oxygenation

- We use saturation monitors to determine oxygen requirements and not TcPO₂
- We occasionally use transcutaneous monitors in ventilated infants as they give useful information about TcPCO₂ - **but turn off the TcPO₂ alarms and use the SaO₂ alarms instead**
- If an infant on monitoring is breathing air they can have the upper alarm limit on the SaO₂ monitor set to 100%

Alarm limits - infants <34weeks gestation at birth

- **Aim to keep them saturating at around 93%**
- Set the upper alarm limit at 95% (all monitors) if they require oxygen
- Set the lower alarm limit at 90%
- We hope that occasional adjustment of FiO₂ will mean that they are mostly maintained at around 93-94%
- These limits apply to these infants **until discharge**, even when they have become more mature

Alarm limits - infants of 34 weeks gestation or more at birth

- **Aim to keep them saturating in the mid to upper 90's**
- Set the upper alarm limit at 98% if they require oxygen
- Set the lower alarm limit at 92%
- In occasional infants with PPHN we will aim for saturations of up to 100%