

OXYGEN SATURATION TARGETS

PRINCIPLES

- Target range SpO₂ 91–95% for preterm babies <36 weeks corrected gestational age, who are breathing on supplemental oxygen
- Prescribe oxygen on baby's drug chart specifying target range
- Alternative saturation targets or strategy may be specified for babies with congenital heart disease or those at risk of persistent pulmonary hypertension

Setting alarm limits

If currently <36 weeks corrected age – target range SpO ₂ 91–95%	If currently ≥36 weeks corrected age OR born ≥34 weeks – target SpO ₂ 93–97%
Babies breathing supplemental oxygen • Low alarm at 89% and high alarm at 96%	Babies breathing supplemental oxygen • Low alarm at 92% and high alarm at 98%
Babies breathing air • Low alarm at 90% and high alarm at 100%	Babies breathing air • Low alarm at 92% and high alarm at 100%

RESPONDING TO OXYGEN SATURATION ALARMS

General principles

Monitor

- Assess monitor trace and baby before increasing inspired oxygen
- If intubated and need for increasing oxygen, check for DOPE:
 - displaced endotracheal tube (**D**)
 - presence of secretions or blood that may be causing obstruction or kinked ET Tube (**O**)
 - pneumothorax (**P**)
 - equipment failure or need for change in ventilator support (**E**)

Adjust inspired oxygen

- Change inspired oxygen in increments of 1–3% at a time except before procedures or with significant desaturations below 70%. In these circumstances, see **Low alarm**
- Avoid titrating target saturation with large and frequent increases and decreases in inspired oxygen
- wide fluctuations increase risk of retinopathy of prematurity in preterm babies
- small frequent tweaking of inspired oxygen by 1–3% between 40–50% oxygen is much better than intermittently swinging between 30–80% oxygen to achieve same target range
- use of OxyGenie™ technology for oxygen saturation targeting, if using SLE 6000 ventilators

If it is necessary to increase inspired oxygen by >5–10%, or to introduce (or change) CPAP or ventilation, discuss with doctor or ANNP immediately

Specific circumstances

High alarm

- Silence alarm and observe for an alarm cycle (3 min)
- If alarm still sounding after a cycle, decrease inspired oxygen by 1–3%
- Continue reducing inspired oxygen by 1–3% every alarm cycle until saturation stable in desired range

Low alarm

- Never silence alarms without reviewing baby
- Assess waveform and heart rate
- Baby: check for DOPE and manage appropriately
- If desaturation persists after above checks, increase inspired oxygen by 1–3% for moderate desaturation (>70%)
- significant desaturations (<70%), double baseline inspired oxygen (increase by ≥20%) until SpO₂ increases to 90%, then wean rapidly to within 3% of baseline inspired oxygen

Oxygen saturation targets 2025–28

Handling or procedures

- If history of significant desaturation with handling or procedures, increase inspired oxygen by 5–10% before handling or procedure
- may require ventilator changes to increase mean airway pressure (discuss with tier 2 staff)
- After procedure, once SpO₂ stabilises, wean inspired oxygen rapidly to baseline

Labile cases

- Some sick babies will be particularly labile and it is challenging to maintain SpO₂ in target range. In rare cases, individualised adjustments to alarm settings may be necessary after discussion with medical team