# Ventilated babies

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<th>NURSING INSTRUCTION</th>
<th>NURSING ACTION</th>
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| **1. MAINTAIN A PATENT AIRWAY** | ▪ Place a rolled sheet under the shoulders to extend the neck  
▪ Keep the head just off-centre (not to one side), to prevent kinking of the tube.  
▪ Ensure the ET tube and circuit are adequately supported and secured to prevent kinking or dislodging  
▪ Suction PRN but at least 6hrly. Be guided by ↓ O₂ saturation, restlessness, ↓ air entry and ↑ resistance (RPK)  
▪ Insert a nasogastric tube on free drainage to prevent accumulation of air and fluids which may splint the diaphragm and lead to vomiting and aspiration. Aspirate NGT 4hrly and note amount, colour and consistency |
| **2. CHECK AIR ENTRY** | ▪ Monitor at least hourly  
▪ Ensure air entry is equal bilaterally  
▪ Observe chest movement  
▪ Listen for ↓ air entry, crackles, wheezes, air leaks |
| **3. ENSURE E.T TUBE IS SECURELY STRAPPED** | ▪ Strap according to unit policy. If there is any movement, re-strap  
▪ Ensure size of tube and level of insertion are clearly recorded in nursing process and on card on incubator  
▪ Record re-strapping on intubation chart |
| **4. ENSURE BABY FEELS SECURE AND COMFORTABLE** | ▪ All babies should be swaddled/nestled (with a blanket curled around them to define their limits)  
▪ Give developmentally supportive care including:  
  − minimal handling (especially if < 1500g) i.e. 6hrly care unless otherwise indicated  
  − minimise environmental stimuli e.g. light and sound  
  − group interventions / procedures  
  − early and appropriate management of pain e.g. sucrose dummy, containment and/or morphine  
  − monitor baby’s cues  
  − limited number of caregivers and involve mother in care |
| **5. ENSURE BABY IS WELL SEDATED** (breathing must synchronise with the ventilator) | ▪ A continuous morphine infusion is the sedation of choice. Observe regularly for signs of pain and distress (e.g. crying, restlessness, ↓ oxygen saturation, tachycardia, hypertension). Administer bolus prior to any invasive procedure as ordered  
▪ Administer Dormicum sedation as ordered (may even be given hourly if necessary to achieve adequate sedation)  
▪ Ensure administered and wasted Dormicum / Morphine is written up in schedule book  
▪ Administer paralysing agent (e.g. vecuronium/pancuronium) as ordered especially if baby is on high pressures or is very restless - however this is uncommon practice. Ensure sedation is administered with any paralysing agent as this will prevent anxiety  
▪ Only sedate once air entry and ventilator settings have been checked. Restlessness may be due to ↓ O₂. Check for a wet nappy. |
| **6. OBSERVE FOR SIGNS OF SHOCK** (possibly due to IVH, pneumothorax, acute blood loss) | ▪ Observe: ↓ BP, ↓ peripheral perfusion, ↓ oxygen saturation, restlessness and pallor  
▪ Record and report any abnormalities immediately |
### 7. MAINTAIN ACCURATE OBSERVATIONS  
(See newborn care plan)

- Monitor: temp, pulse, respiration, oxygen saturation, colour, air entry, BP and ventilator settings at least hourly
- Ensure baby is monitored on a comprehensive patient monitor e.g. Dash
- Consider end tidal CO₂ monitoring for close monitoring of CO₂ to ↓ need for frequent blood gasses
- Invasive BP monitoring is recommended if BP is unstable e.g. persistent foetal circulation on inotropic support or post surgery

### 8. OBSERVE FOR SIGNS OF PNEUMOTHORAX

- Observe for:
  - sudden/gradual deterioration with little response to ↑ O₂ and suctioning
  - ↓ air entry on one side (usually right side) and/or asymmetrical chest movement
  - restlessness. pallor
  - ↓ BP, ↓ oxygen saturation
  - abdominal distension
- Record and report any abnormality immediately. This is an emergency. A chest drain must be inserted by an MO
- If no MO available - a butterfly needle (under water) can be inserted in the 2nd intercostal space to drain the air until a chest drain can be inserted

### 9. ADMINISTER SURFACTANT AS ORDERED

- Administer as per unit policy
- Monitor BP closely. May drop rapidly as intra thoracic press ↓
- ↓ inspiratory pressure as compliance improves

### 10. MONITOR BLOOD GASES

- Monitor depending on baby’s condition. Minimum :12 hrly
- Observe for respiratory/metabolic acidosis
- Observe for hyocapnoea due to over ventilation

### 11. MONITOR ALARMS

- If ventilator is alaming, check if it is cycling and check alarm settings
- If ventilator is not cycling: DO NOT PANIC!!
- Ask someone to ambubag the baby. Begin at the beginning:
  - is the vent plugged in and on?
  - are the air and oxygen hoses plugged in?
  - check all connections, temperature and pressure lines
  - check the block - diaphragm securely screwed with no cracks
  - if you cannot locate the fault, change the ventilator

### 12. CHANGE VENTILATOR CIRCUIT

- This is done every 72 hours on a Monday and Thursday
- Record on intubation chart

### 13. COMMENCE WEANING  
(if baby’s condition stable with a satisfactory blood gas)

- Monitor CO₂ levels and pH for signs of respiratory acidosis. If baby retaining CO₂ do not continue weaning
- Baby can be weaned in any mode. Alternate weaning O₂, rate and pressure. Decrease O₂ first, then pressure
- When weaning O₂, decrease by 5 an hour (unless oxygen saturation remain above 95%)
- When weaning rate, maintain inspiratory time between 0.4 and 0.6 sec. In all modes except SIMV, the rate is a back up rate and every breath will be supported, therefore weaning pressure is more effective. Judge regularity of respiration with low back up rate e.g. 15 to ensure readiness for extubation
- Do not adjust pressure without MO’s orders