

neofast

ESSENTIAL STEPS



Neonatal Resuscitation

From the first minute to epinephrine: the numbers you need at the tip of your tongue — and in the palm of your hand.

SOLE SOURCE OF THIS CONTENT

Textbook of Neonatal Resuscitation, 9th Edition

Neonatal Resuscitation Program® (NRP) · American Academy of Pediatrics, 2025 · Ed. Gary M. Weiner

Technical content for neonatologists

Swipe →

60 seconds that define the resuscitation

A Umbilical cord

Newborns who do not need immediate resuscitation: defer cord clamping for ≥ 60 s. Cord management must never delay ventilation.

B Rapid evaluation

Term? Good tone? Breathing or crying? A single “no” → radiant warmer.

C Initial steps

Warm, dry and position the airway; tactile stimulation if apneic. **No routine suctioning** — including meconium-stained fluid.

TRIGGER FOR PPV

Apnea, gasping or HR < 100 bpm at 1 minute of life → start positive-pressure ventilation.

PPV: the single most important and effective step

INITIAL FiO_2 BY GESTATIONAL AGE

≥ 35 wk

21%

32–34 wk

21–30%

< 32 wk

$\geq 30\%$

Titrate by pre-ductal pulse oximetry (right hand) to the target SpO_2 .

RATE

30–60

breaths/min

INITIAL PIP

25

cmH_2O

PEEP

5

cmH_2O , if used

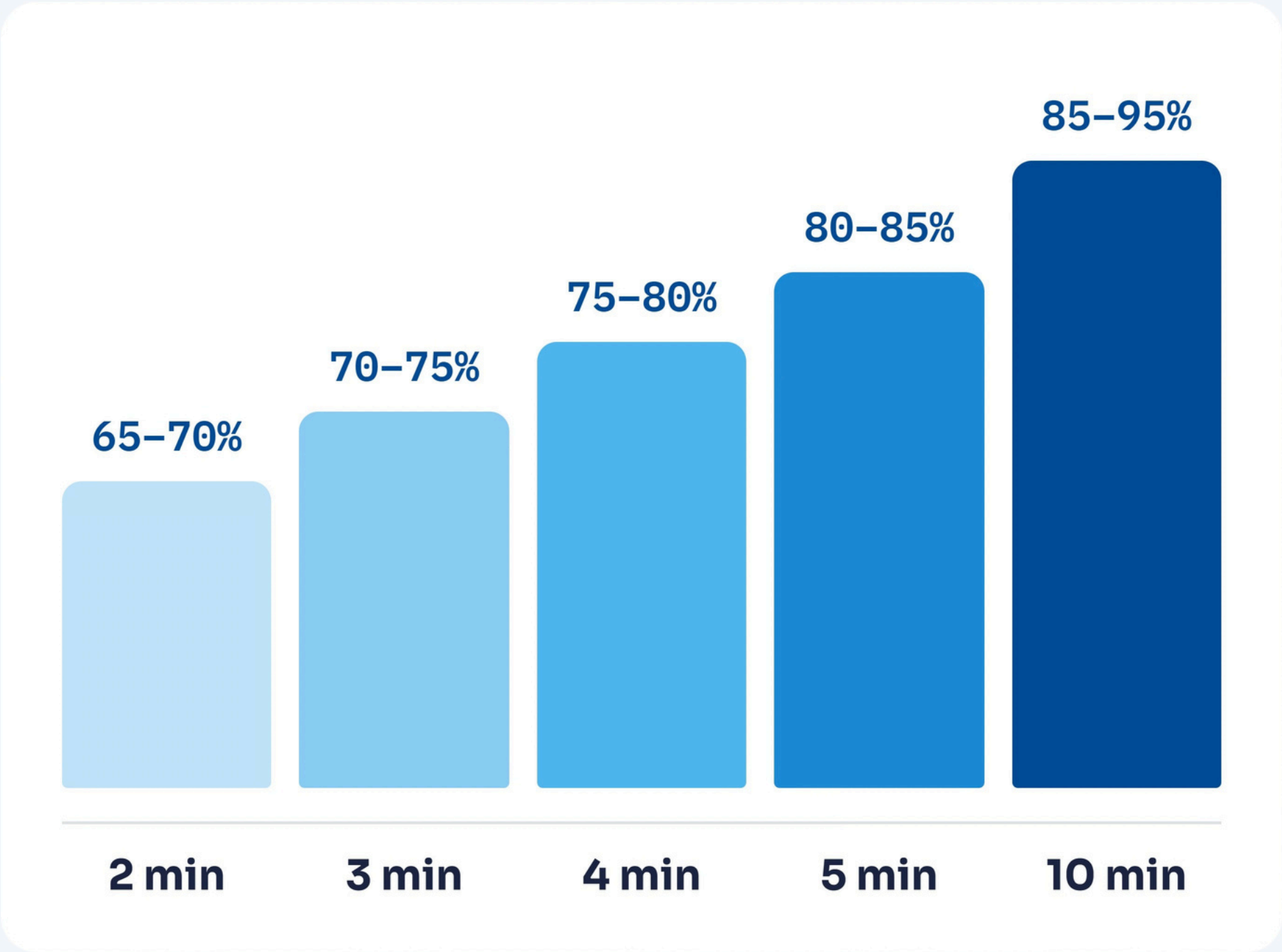
Acceptable PIP: 25–30 cmH_2O for term and $\text{GA} \geq 32$ wk • 20–25 cmH_2O for $\text{GA} < 32$ wk.

BEST INDICATOR OF SUCCESS

A rising HR. No improvement in 15–30 s and no chest movement → corrective steps.

Target pre-ductal SpO₂, minute by minute

Sensor on the right hand. Visual cyanosis is not a reliable indicator of saturation.



Use pulse oximetry when resuscitation is anticipated, for persistent cyanosis, when giving supplemental O₂ or when ventilation is required.

Chest not moving? MR SOPA

M

Mask adjustment

R

Reposition head and neck

S

Suction mouth and nose

O

Open the mouth

P

Pressure increase

AAlternative airway:
ET tube or laryngeal mask

ESCALATION

30 sHR < 60 bpm after ≥ 30 s of PPV that moves the chest → **alternative airway** and 30 more seconds of ventilation.**30 s**HR still < 60 bpm → **FiO₂ 100%** and start **chest compressions**.

Face-mask PPV or CPAP for more than several minutes: insert an orogastric tube.

The right tube, in about 30 seconds

WEIGHT	GA	TUBE (mm ID)
< 800 g	22–25 wk	2.5*
800–1,200 g	26–28 wk	2.5
1,201–2,200 g	29–34 wk	3.0
> 2,200 g	> 34 wk	3.5

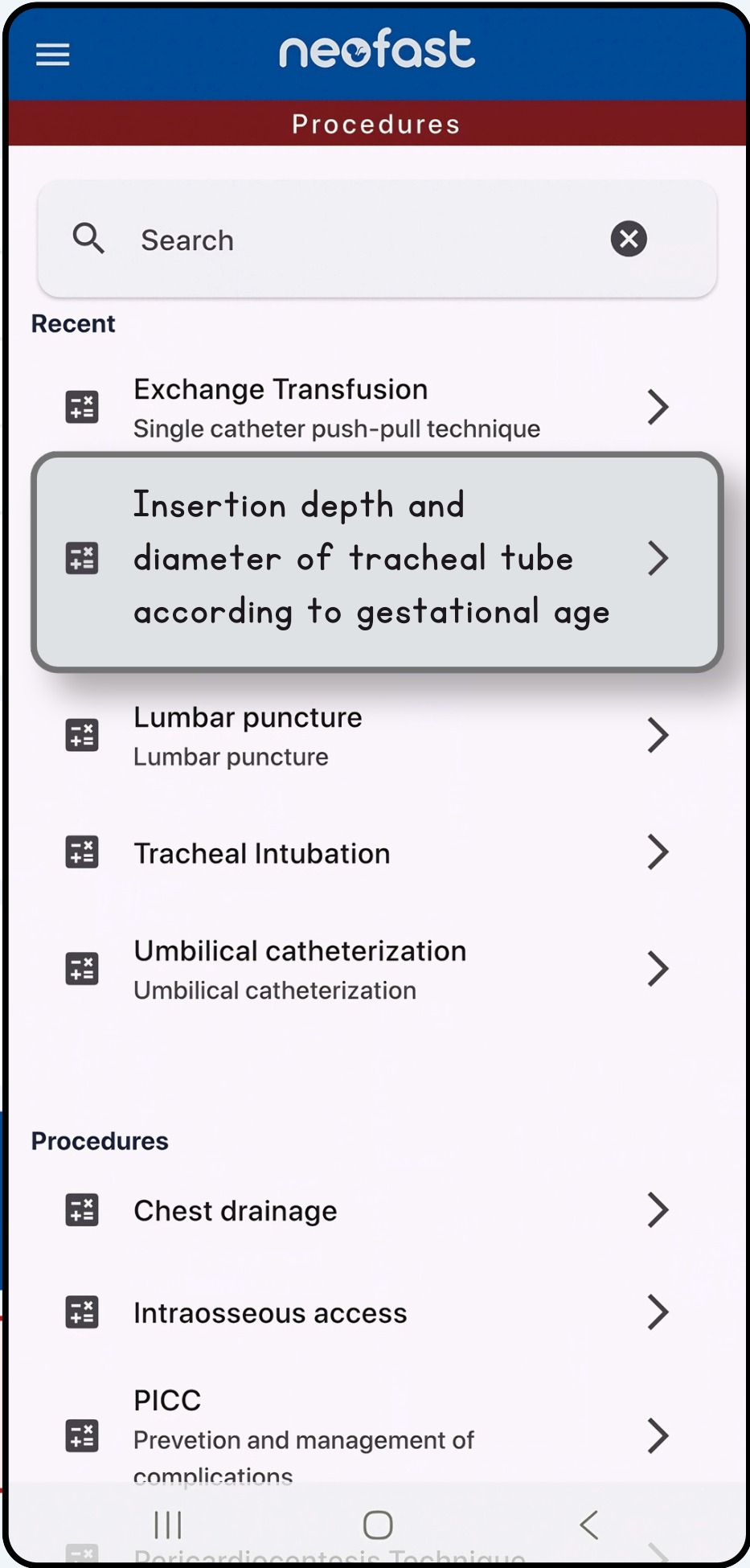
*An optional 2.0 mm tube may be considered.

Miller blade: No. 1 for term · No. 0 for preterm (00 optional for extremely preterm).

Insertion depth: nasal-tragus length + 1 cm, or by GA; confirm with equal breath sounds.

Primary confirmation: exhaled CO₂ + rapidly rising HR.

Worse after intubation? DOPE: displaced, obstructed, pneumothorax, equipment failure.



Only after ventilation that moves the chest

Indication: HR < 60 bpm despite ≥ 30 s of effective ventilation — ideally through an ET tube (or a laryngeal mask if intubation fails).

3:1

90 compressions + 30 breaths per minute

“One-and-Two-and-Three-and-Breathe”

Technique: two thumbs on the sternum, just below the nipple line, hands encircling the chest.

Depth: $\sim 1/3$ of the anterior-posterior diameter.

Position: compressor at the head of the bed — leaves room for the umbilical catheter.

100%

FiO₂ during compressions

60 s

reassess HR, preferably with a cardiac monitor

≥ 60

bpm: stop and continue PPV at 30–60/min

HR < 60 bpm after 60 s of coordinated compressions → **vascular access and epinephrine**. Next slide.

Epinephrine: the math you can't get wrong

HR < 60 bpm after 30 s of effective ventilation + 60 s of compressions with 100% O₂.

Concentration **0.1 mg/mL**

IV / IO • PREFERRED ROUTE

0.02 mg/kg

= 0.2 mL/kg · range 0.01–0.03 mg/kg
1-mL syringe · give rapidly
3-mL saline flush · repeat every 3–5 min

ENDOTRACHEAL • WHILE ACCESS IS OBTAINED

0.1 mg/kg

= 1 mL/kg · range 0.05–0.1 mg/kg · 3- to 5-mL syringe

Access immediately after birth: umbilical vein. No response to the ET dose: give subsequent doses IV/IO.

neofast

Medicines

+

Epinephrine (Adrenaline)

▼

IM or subcutaneous

IV bolus

1mg/mL

+

Weight (kg)

2

+

Desired dose (mg/kg/dose)

0.02

Suggested dose: 0.001 to 0.1 mg/kg/dose

Epinephrine (Adrenaline)

IV bolus - 1mg/mL

Dose	0.04mg
Interval	5/5min AMD
Dilution	
Remove from vial	1mL
Dilute with NS	9mL
Final concentration after dilution	0.1mg/mL
Dose after dilution	0.4mL
Dose after dilution	40 UI

HR still < 60 bpm after epinephrine?

Think **hypovolemia** and **pneumothorax**.

VOLUME EXPANSION

Indication: not responding to the steps of resuscitation, with signs of shock or a history of acute blood loss.

DOSE

10 mL/kg

RATE

5–10 min

Solution: normal saline or type O Rh-negative blood

Route: IV or IO • labeled 30- to 60-mL syringe

WHEN TO DISCUSS STOPPING

Confirmed absent HR after all appropriate steps: ~20 min after birth is a reasonable time frame — an individualized decision, with the team and family.

Intubated. Now, how do you ventilate?

The resuscitated newborn moves on to post-resuscitation care. In NeoFast, the Mechanical Ventilation module picks up where the delivery room left off.

Initial setup

CPAP, high-flow nasal cannula, NIPPV, PCV, VCV, volume guarantee, NAVA, jet and oscillatory HFV

Clinical targets

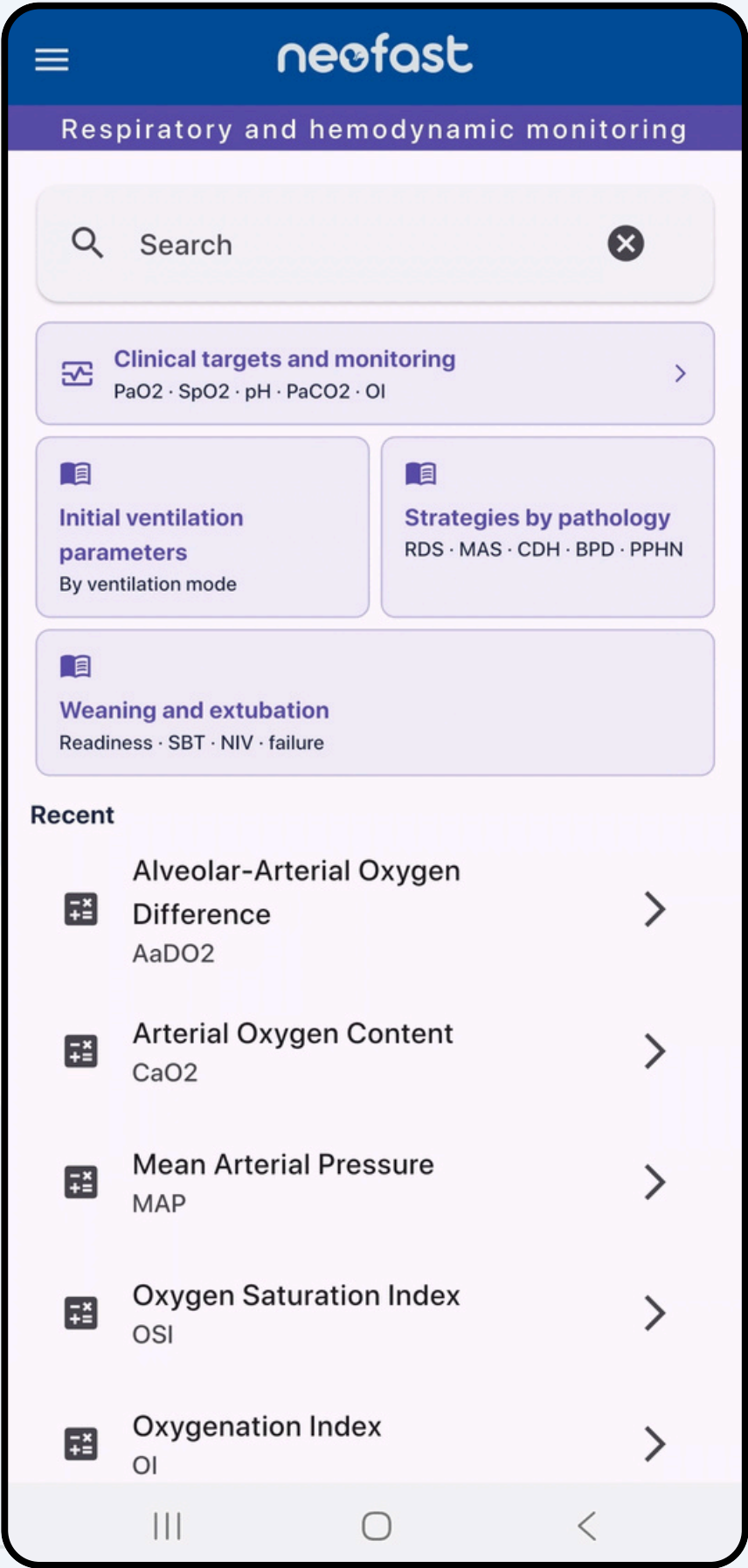
Oxygenation and ventilation goals at hand

Disease-specific strategies and weaning

From fine-tuning to extubation

Respiratory calculators

OI, OSI, SpO₂/FiO₂, PaO₂/FiO₂, mean airway pressure, compliance and more



neofast



At every moment. Especially the critical ones.

When every second counts, the math is already done:
weight-based doses, intubation and mechanical ventilation
in your pocket.

- ✓ Medications with calculated dose and volume
- ✓ Intubation: tube, blade and rapid sequence
- ✓ Mechanical ventilation from setup to weaning

SAVE AND SHARE

Take it to your next shift

SUBSCRIBE TO NEOFAST

Link in bio



Download on the
App Store



GET IT ON
Google Play

Content based exclusively on the Textbook of Neonatal Resuscitation, 9th ed. (AAP/NRP, 2025). Does not replace clinical judgment or NRP training.