NEONATAL AIRWAY

Intubating the newborn: when is it indicated?



Absolute indications, blood-gas thresholds by gestational age, and the other reasons to secure the airway.

REFERENCES

Mammel MC, van Kaam AHLC, Donn SM, editors. *Manual of Neonatal Respiratory Care*. 2022.

Ch. 67, Indications for Mechanical Ventilation (Greenough A, Milner AD), pp. 643–644.
Ch. 68, Respiratory Distress Syndrome (Donn SM), p. 647.

neofast

ABSOLUTE INDICATIONS

Four situations where intubation is not up for debate

No spontaneous breathing

after adequate mask ventilation

Sudden collapse

with apnea and bradycardia

Massive pulmonary hemorrhage

Large congenital diaphragmatic hernia

Source: Mammel, ch. 67, p. 643.

neofast

PROGRESSIVE RESPIRATORY FAILURE

The threshold changes with gestational age

< 28 wk	**PaCO2 > 45–55 mmHg** (lower limit if pH < 7.25) and/or **PaO2 < 50–60 mmHg** in FiO2 > 0.50. If only oxygenation is poor, nasal CPAP may be tried first.
28–32 wk	**PaCO2 > 45–55 mmHg** (lower limit if pH < 7.25) and/or **PaO2 < 50–60 mmHg** in FiO2 > 0.60, if CPAP has failed to improve blood gases.
≥ 33 wk	**PaCO2 > 60 mmHg** with pH < 7.25 and/or **PaO2 < 45 mmHg** in FiO2 > 0.80. Lower threshold if distress is evident; CPAP is usually less well tolerated.

Criteria vary according to each unit's policy. Source: Mammel, ch. 67, p. 644.

neofast

BEYOND BLOOD GASES

Other reasons to secure the airway

- Recurrent apnea (> 1–2 per hour needing stimulation) despite CPAP/NIPPV and methylxanthines
- Severe sepsis
- Maintaining airway patency
- CO_2 control in pulmonary hypertension

In RDS, intubate if

- $PaCO_2$ > 60 mmHg
- PaO_2 < 50 mmHg
- Apnea or decreased drive
- Airway patency
- Planned invasive surfactant

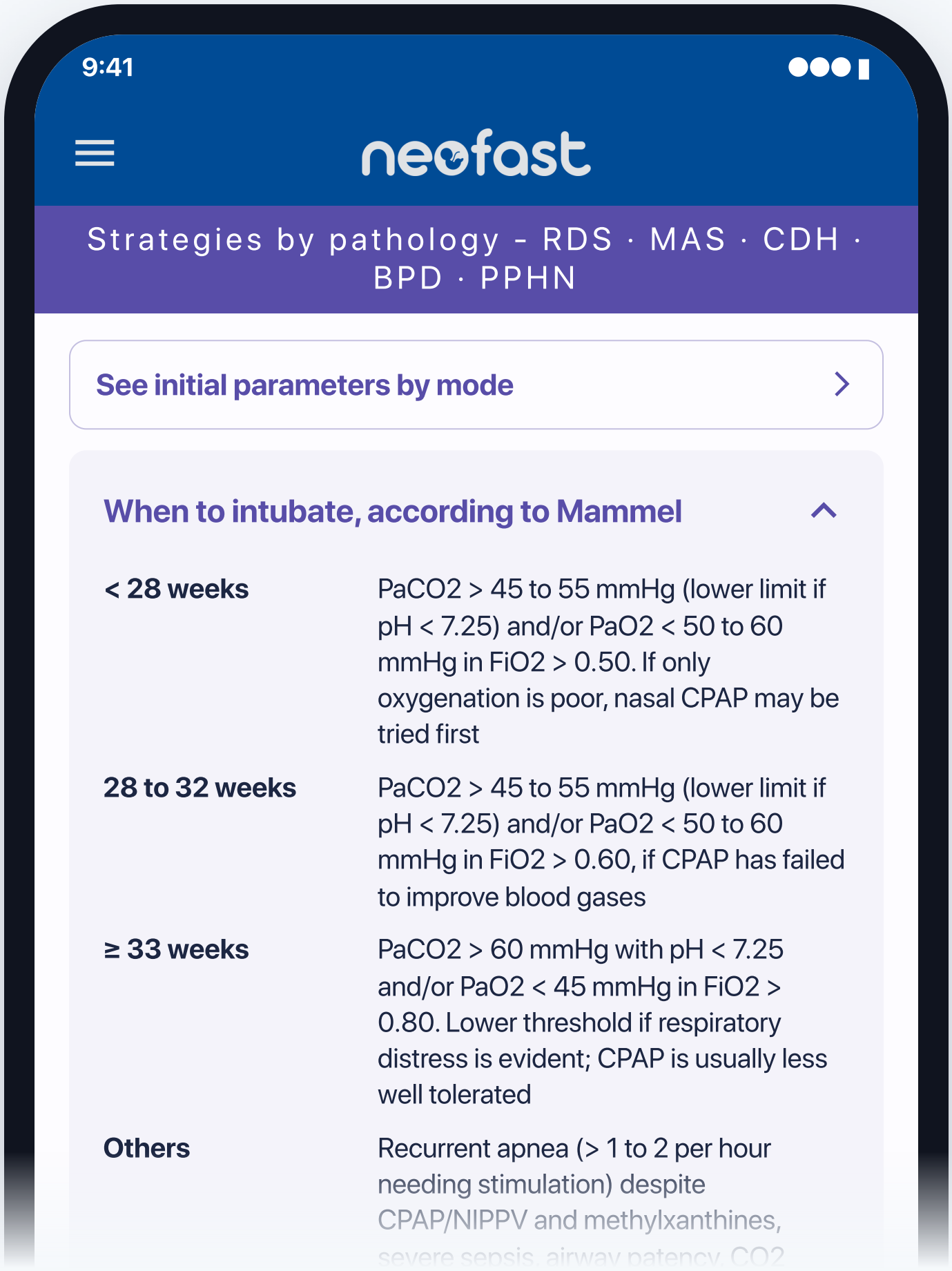
Sources: Mammel, ch. 67, p. 644; ch. 68, p. 647.

neofast

IN THE APP

The criteria, one tap away

Respiratory and hemodynamic monitoring › Strategies by pathology

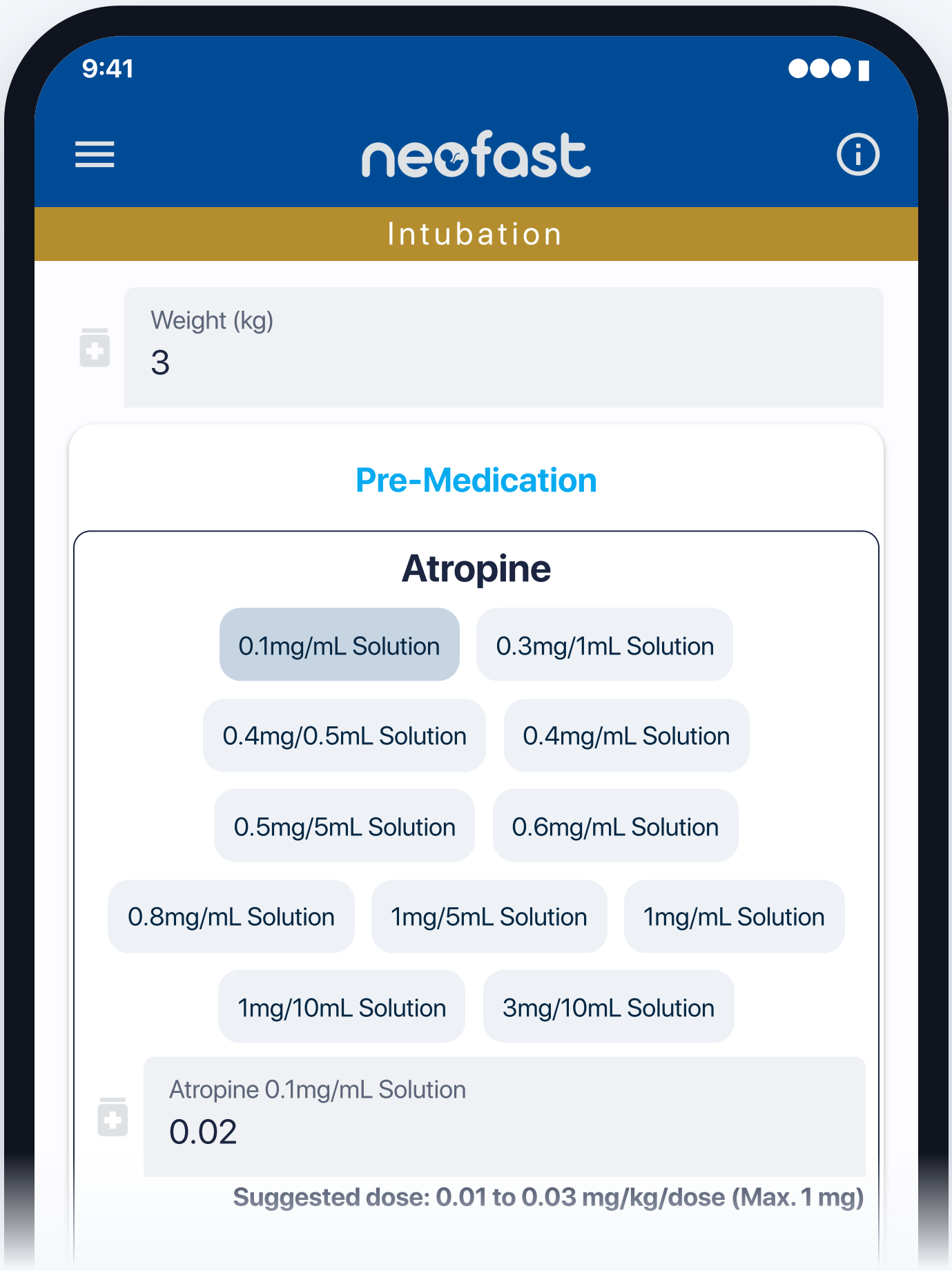


IN THE APP

Rapid sequence by weight

Pre-medication, sedation and analgesia, and muscle blockers, with the presentation you have on the unit.

Example: 3 kg · atropine 0.02 mg/kg

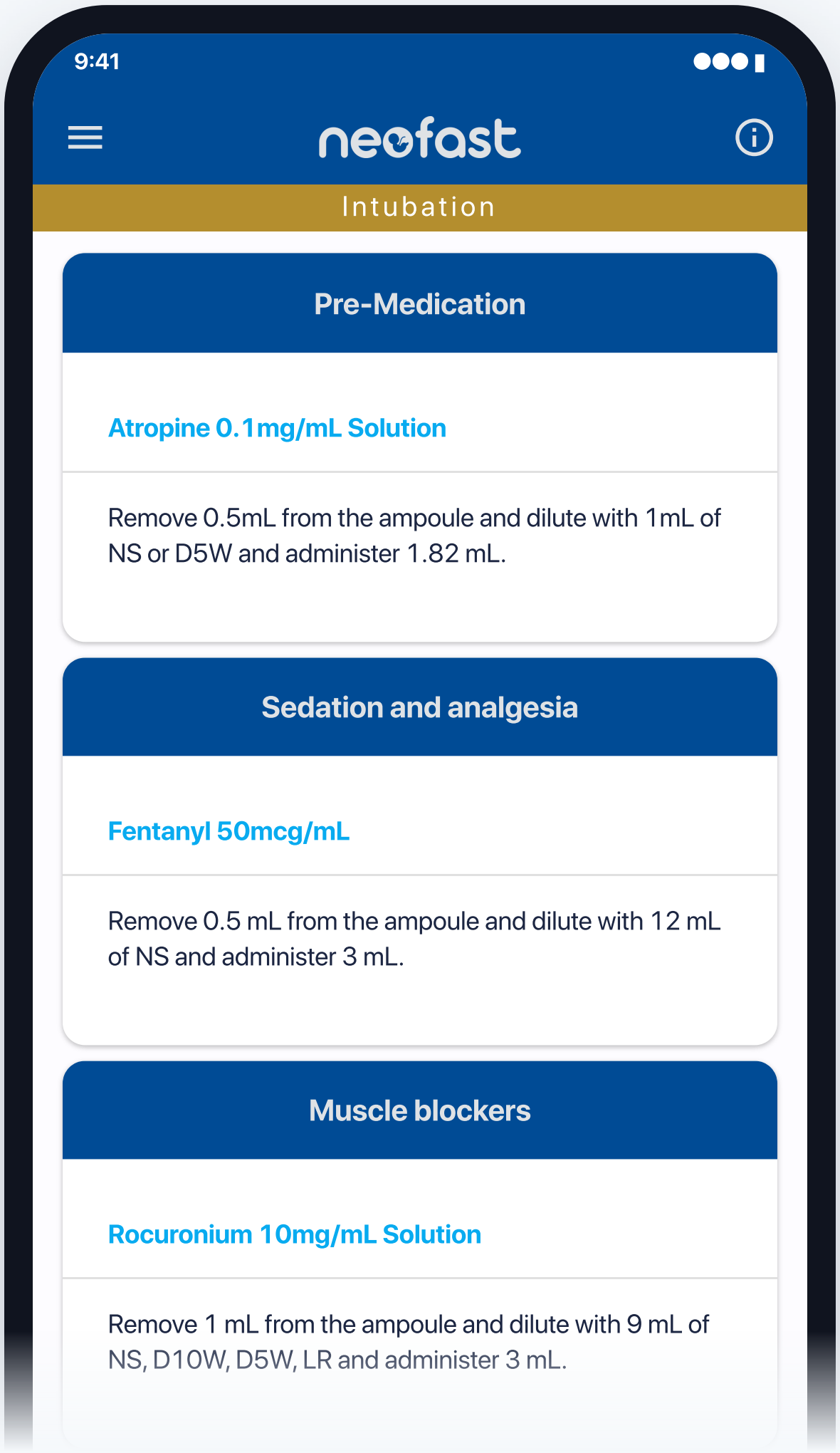


IN THE APP

Dilution and volume, ready to draw

One card per phase, in the order of the sequence.

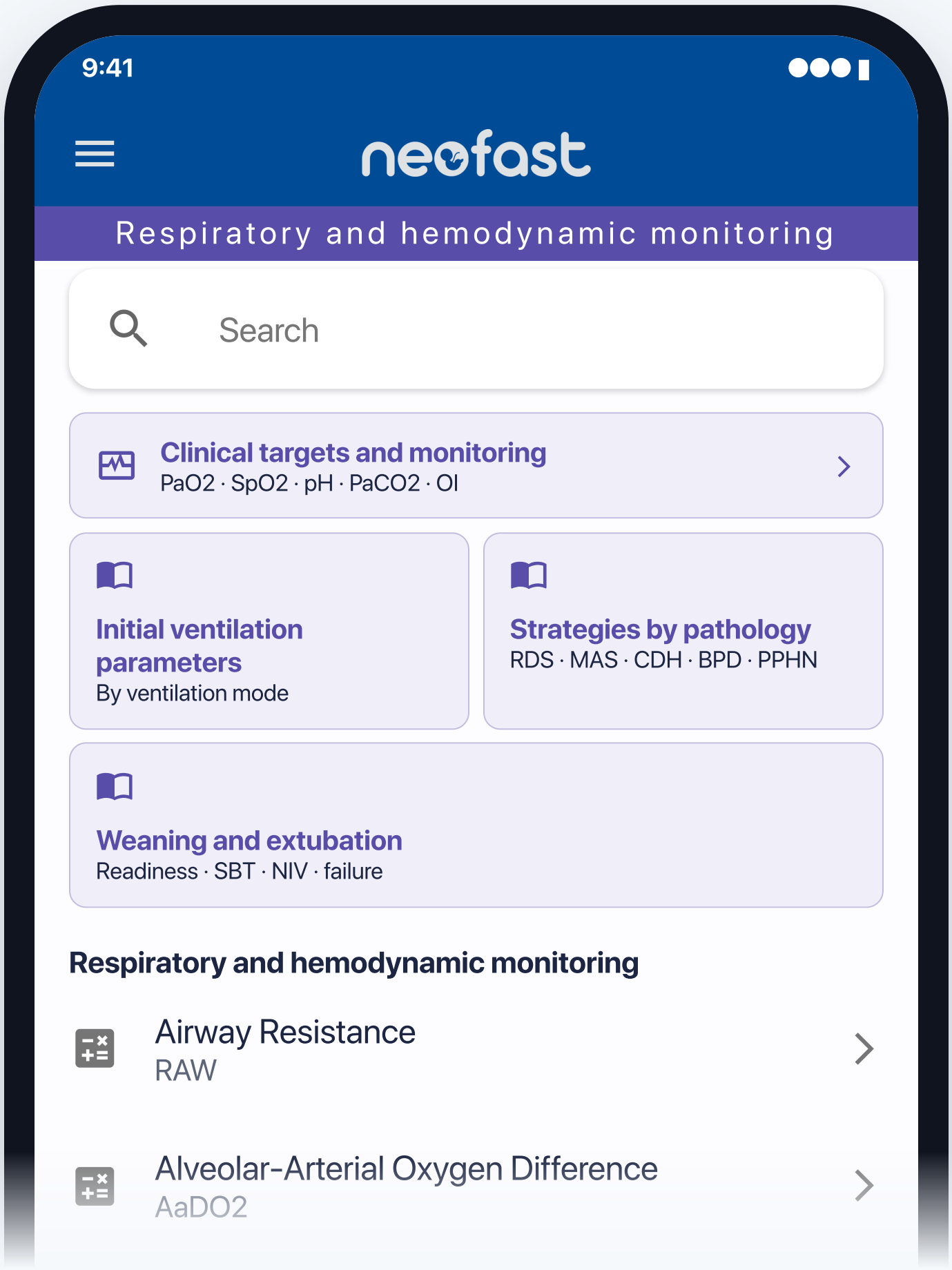
Example: 3 kg · atropine 0.02 mg/kg · fentanyl 2 mcg/kg · rocuronium 1 mg/kg



AFTER THE TUBE

Monitor what the ventilator is doing

Oxygenation, mechanics and hemodynamics in one section: OI, OSI, MAP, %Leak, RAW and more.



neofast

Neonatal calculations that cite their sources

Intubation sequence, respiratory and hemodynamic monitoring, and much more for the NICU.

App Store · Google Play

The app calculates and cites the source.
The clinical decision belongs to the physician.