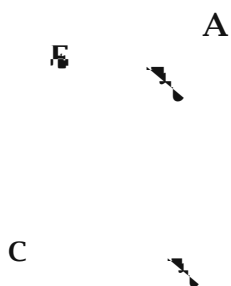


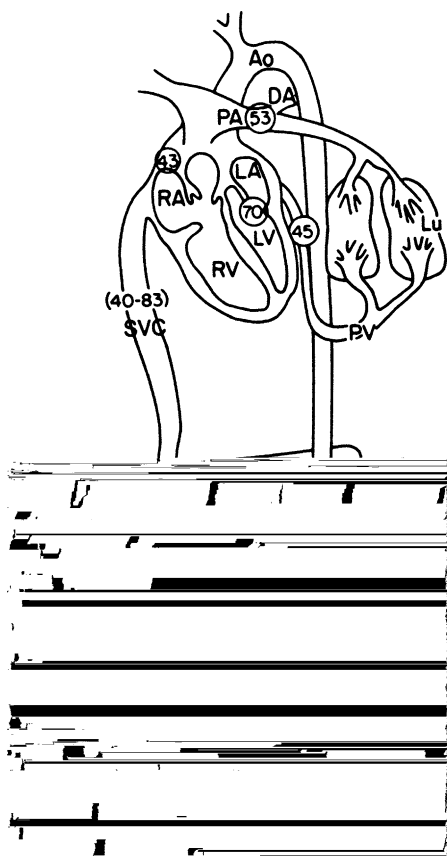
**B** *Indications for Volume Expanders*

**B** *Other Drugs*

*Indications for Volume Expanders  
Other Drugs*

**B** *Other Drugs*





13-1. Fetal circulation with oxygen saturation in different parts of the fetus ( , , , , indicate percent saturation). = placenta; C = inferior vena cava; = umbilical vein; = right hepatic vein; = left hepatic vein; C = superior vena cava; = right ventricle; A = right atrium; = left ventricle; A = left atrium; A = pulmonary artery; A = ductus arteriosus; A = aorta; = pulmonary vein; A = aorta; A = umbilical artery. (From Martin.<sup>11</sup>)

## 13-1. Fetal Blood Gas and Acid-Base Values

		C <sub>2</sub>	2	C <sub>3</sub> <sup>-</sup>
Umbilical artery	7.28 ± 0.05	49.2 ± 8.4 (50)	18.0 ± 6.2 (20)	22.3 ± 2.5
Umbilical vein	7.35 ± 0.05	38.2 ± 5.6 (40)	29.2 ± 5.9 (30)	20.4 ± 2.1

Data from Yeomans et al.<sup>12</sup> from 146 uncomplicated vaginal deliveries. Values are shown as mean ± SD. In parentheses are approximations of the mean values which form a convenient mnemonic: 20-30-40-50.



13-2. Adult and fetal oxyhemoglobin dissociation curves. The dotted line shows the  $P_{50}$ , the  $PO_2$  associated with 50% saturation of hemoglobin. Fetal hemoglobin is more avid for oxygen and thus has a lower  $P_{50}$ .





13-2. Factors Associated with Need  
for Neonatal Resuscitation

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Uteroplacental insufficiency	Traumatic
Diabetes mellitus	Intrauterine manipulation
Preeclampsia	Breech extraction
Postmaturity	Forceps delivery
Intrauterine growth retardation	Uterine hyperstimulation
Cocaine addiction	Precipitous labor or delivery
Autoimmune disease	Prolonged labor
Fever and infection	Prolonged second stage
Hemorrhage	Prolonged rupture of membranes
Placenta previa	Nonreassuring fetal heart rate tracing
Abruptio placentae	Shoulder dystocia
Ruptured uterus	
Vasa previa	
Endocrine problems	Prematurity
Hypothyroidism or hyperthyroidism	Small for dates
Hypoadrenalism or hyperadrenalism	Macrosomia
Pheochromocytoma	Polyhydramnios or oligohydramnios
Maternally administered drugs (high dose or overdose)	Abnormal presentation, e.g., breech
Opioids (particularly within 4 h of delivery)	Multiple gestation
Sedatives and tranquilizers	Congenital anomalies
Magnesium sulfate	Intrapartum fetal distress
Local anesthetics	Presence of meconium
Calcium channel blockers	Prolapsed umbilical cord
$\beta$ -Blockers	

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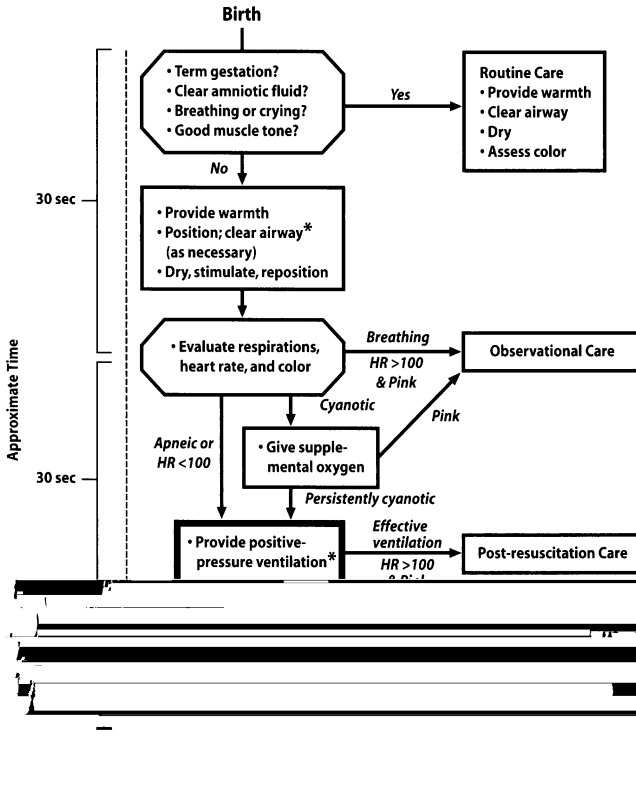
**13-3. Equipment and Medications Necessary  
for Neonatal Resuscitation**

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- I. Radiant warmer
  - II. Equipment for suction
    - A. Bulb syringe
    - B. De Lee mucus trap with a 10-F catheter or mechanical
- II.13nge



## NEONATAL RESUSCITATION

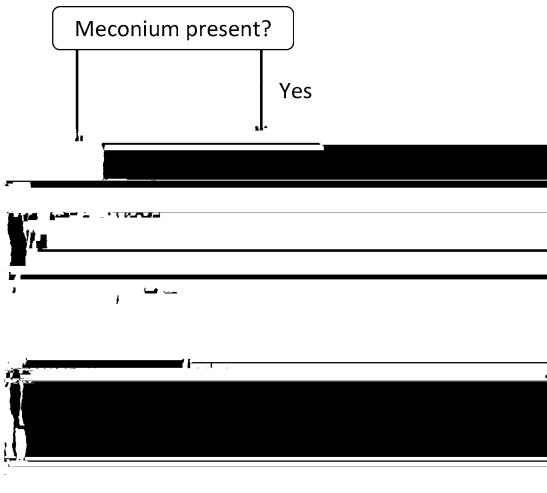


13-3. Basic algorithm for neonatal resuscitation. (From Tegtmeier.<sup>1</sup> Used with permission.)

A

caution should be

*used to prevent stimulation of the posterior portion of the pharynx during the first few minutes after delivery to prevent vagally mediated bradycardia.*



13-4. Treatment for meconium-stained amniotic fluid. (Redrawn and adapted from Tegtmeier.<sup>1</sup>)

**B**

**C**





“ ‘<sub>l</sub>

*Naloxone should not be administered to a newborn infant whose mother is a chronic opioid user because of the possibility of precipitating acute withdrawal.*



13-5. Medications for Neonatal Resuscitation

	C	D	/
Epinephrine	1:10,000	0.1-0.3 mL/kg IV or ET	Give rapidly May dilute with normal saline to 1-2 mL (ET)
Volume expanders	Whole blood 5% Albumin- saline Normal saline Ringer's lactate	10 mL/kg  IV	Give over 5-10 min
Sodium bicarbonate	0.5 mEq/mL (4.2% solution)	2 mEq/kg IV	Give slowly, over at least 2 min Give only if infant is being effectively ventilated
Naloxone hydrochloride	0.4 mg or 1 mg/mL	0.1 mg/kg IV, ET, IM, SQ	Give rapidly IV (preferred), IM, ET not recommended
Dopamine	Varies by institution	5 mcg/kg/min may increase to 20 mcg/ kg/min if necessary	Give as a continuous infusion using an infusion pump, monitor heart rate and blood pressure closely, seek consultation

I = intravenous, ET = endotracheal, IM = intramuscular, SQ = subcutaneous.

C A

A

A

A





*Resuscitation*

*Textbook of Neonatal*

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