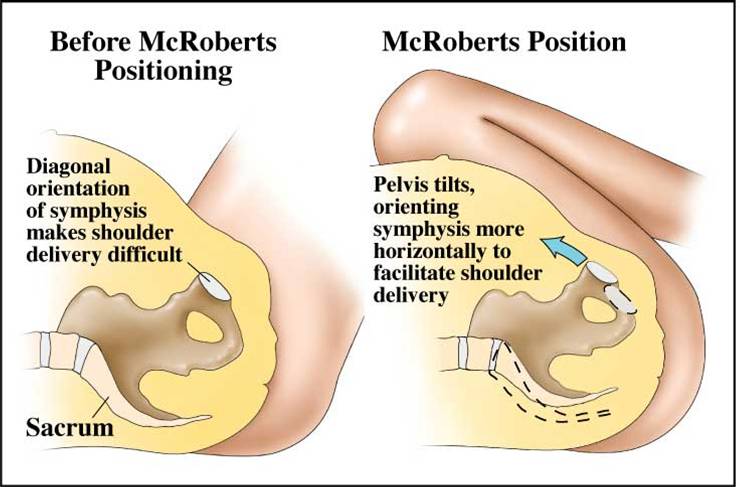
# OB Sim Day Teaching Points

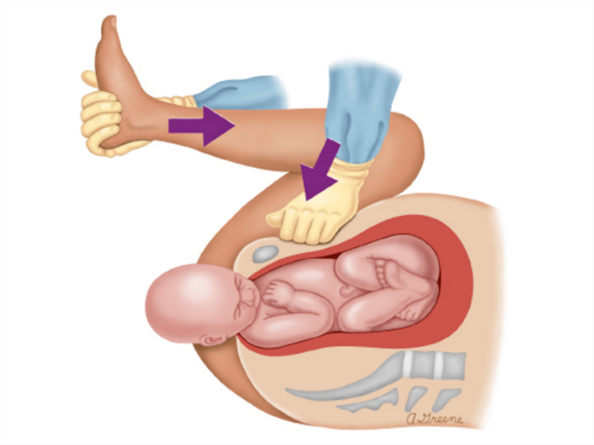
## Shoulder dystocia

# [Image result for shoulder dystocia](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwiYsoLp25vQAhXG24MKHVadA1cQjRwIBw&url=http://www.shoulderdystociainfo.com/whatis.htm&bvm=bv.138169073,d.cGc&psig=AFQjCNFt1hvfgyz8RNkkJkL27IEpz_oUSQ&ust=1478782095079452)

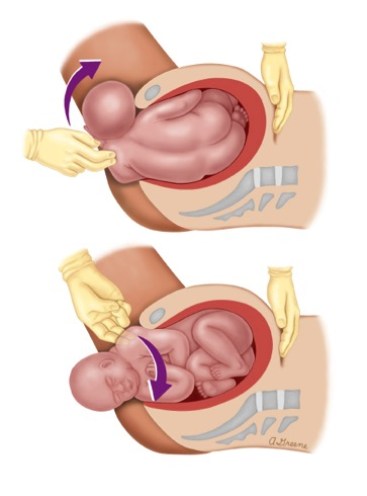
* Failure of the fetal shoulders to clear after the head is delivered
  + Occurs in 0.6 to 2% of all vaginal deliveries
  + Diagnosed in the intrapartum period; may not be predictable based on prenatal data
* Rare obstetric emergency, unpredictable
* Serious potential harm for morbidity for mother and baby, esp brachial plexus injury, may be exacerbated by inappropriate management
* Maternal and fetal factors leading to this condition:
  + *Maternal factors:* DM, obesity, multiparity, precipitous or protracted labor
  + *Fetal factors*: Macrosomia, post-dates
* Complications include
  + *Fetal:* Brachial plexus injuries, humeral/clavicular fractures, aspiration, hypoxic brain injury (from cord compression or compression of the lungs)
  + *Maternal:* Post-partum hemorrhage, vaginal, perineal or sphincter tears, incontinence
* **Diagnosis**: Clinical – when the shoulder cannot be delivered and delivery arrests
  + Fetus may “retract” into the perineum (“turtle sign”).
* **Management:**
  + First things first – call for help! OB, NICU/PICU team, anesthesia
  + Initial steps – increase the AP diameter of the passage
    - Cut an episiotomy and drain the bladder with a Foley
  + 1st maneuver: McRoberts’ maneuver
    - Flexion/hyperflexion of the maternal thighs in the knee to chest position.
    - Successful in up to 40% of cases when used alone

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjEiMjs3ZvQAhUq34MKHc5NDoIQjRwIBw&url=http://www.shoulderdystociainfo.com/resolvedwithoutfetal.htm&bvm=bv.138169073,d.cGc&psig=AFQjCNEQQzzK9Jb1LII04agWmPsvSPxNIg&ust=1478782926277220)

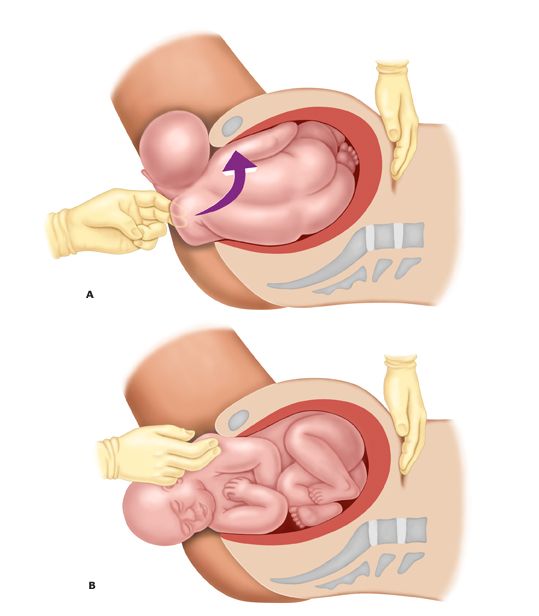
* + Next step: Suprapubic pressure to push the anterior shoulder under the pubis
    - ***Not*** fundal pressure

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjAyviP3pvQAhVF2IMKHUtyC_YQjRwIBw&url=http://www.motherbabyuniversity.com/outreach/outreach/peapods/1893%20OB%20Emergencies/Pages/ShoulderDystocia.htm&bvm=bv.138169073,d.cGc&psig=AFQjCNEQQzzK9Jb1LII04agWmPsvSPxNIg&ust=1478782926277220)

* + If that fails:
    - Rubin’s maneuver: push the most accessible shoulder to the fetal chest (transabdominal, via the introitus or through the episiotomy)

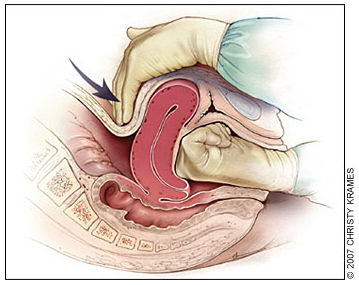
[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjS9sHN3pvQAhVB94MKHc89BJ8QjRwIBw&url=http://www.emdocs.net/the-complicated-delivery-what-do-you-do/&bvm=bv.138169073,d.cGc&psig=AFQjCNEgw0J7nhZI14KXPzZ1HrrMFp7IpA&ust=1478783125875797)

* + - Wood’s corkscrew maneuver: rotate the fetus 180 degrees to release the impacted shoulder

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwiT_rqI35vQAhUD7IMKHbUUAJwQjRwIBw&url=http://cursoenarm.net/UPTODATE/contents/mobipreview.htm?31/62/32739&bvm=bv.138169073,d.cGc&psig=AFQjCNG3JNaFlAuYakSrYMO1lL1NOUoKTQ&ust=1478783183982721)

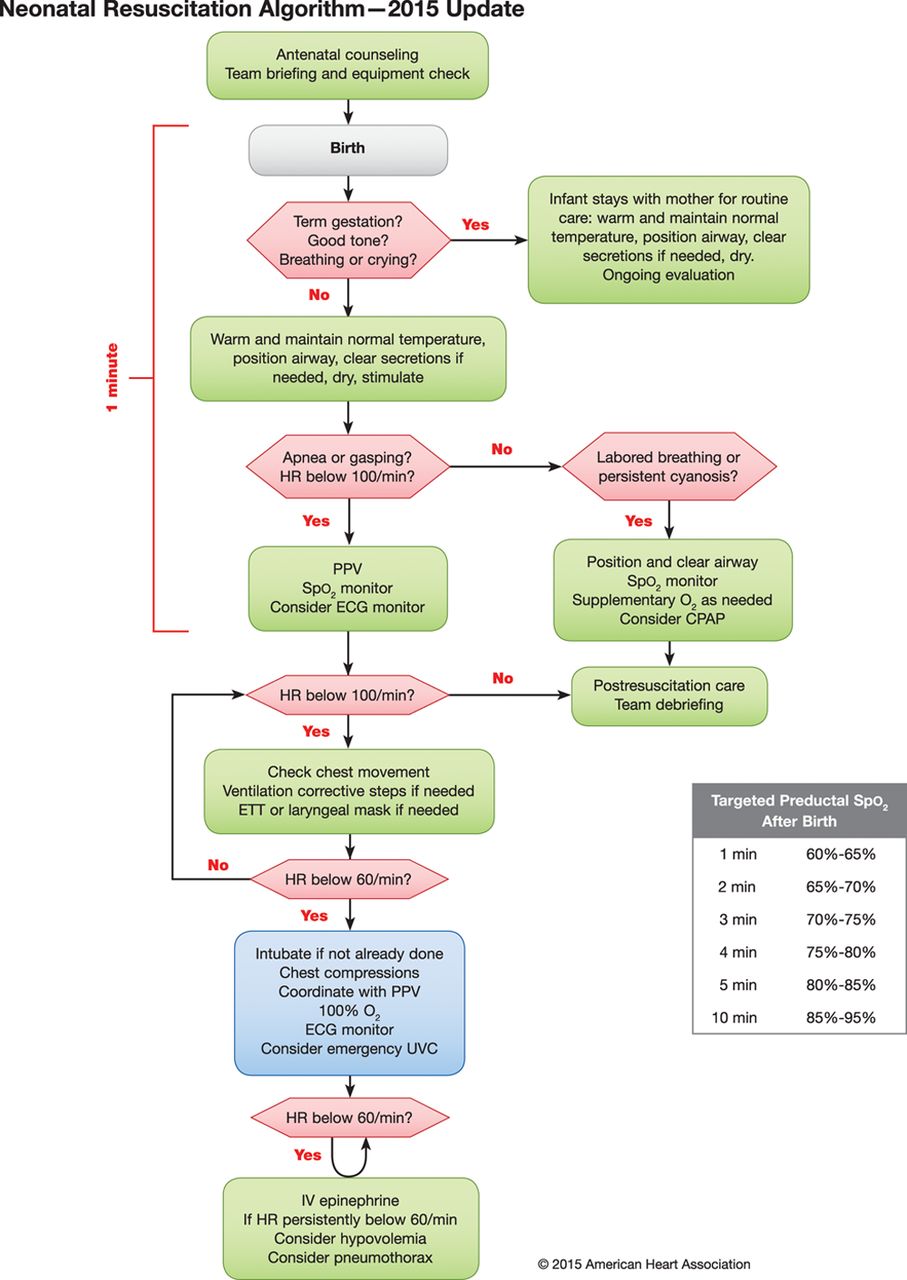
* + - Pull on the posterior arm
  + Next??
    - Break the clavicle, symphisotomy, Zavanelli maneuver (push the baby back in), Gaskin all-fours maneuver

## Postpartum hemorrhage

* Occurs in 1-5% of births in US
* EBL > 1000ml
* Causes: 4Ts
  + Tone: Usually result of uterine atony, 80%
  + Trauma: Lacerations, surgical incisions, uterine rupture
  + Thrombin: Coagulopathy leading to consumption of clotting factors and hemodilution of remaining clotting factors
  + Tissue: Retained placenta
* Risk factors: retained or adherent placenta, abnl placentation, prolonged/failure to progress labor, instrumental delivery, large gestational age newborn, hypertensive disorders (pre/eclampsia, HELLP), induction of labor, fetal demise
* Maneuvers to manage
  + Bimanual uterine massage 
  + 1st line: Oxytocin 10-40 units diluted in IVF, (typically 40 units in 1L NS or LR) given IV adjust rate to control uterine atony, or 10 units IM if no IV access yet
  + 2nd line: Misoprostol (Cytotec, PGE1) 400 mcg SL or 1000 mcg rectal
  + 3rd line: Carboprost (Hemabate) 0.25 mg IM q15min max 8 doses (if no asthma hx)
  + 3rd line: Methylergonovine (Methergine) 0.2 mg IM repeat Q2-4 hrs (if no HTN, CAD, Raynaud’s) 🡪 Trick to remember “Meth” is bad for your heart
  + Fluid resuscitate & transfuse:
    - Blood products, MTP
    - +/- Cryoprecipitate (rich w/ fibrinogen), or fibrinogen concentrate (RiaSTAP) to correct coagulopathy
  + Uterine balloon tamponade (commercially available, or improvised with #24 Foley w/ 30ml balloon, Blakemore), packing
* Consider amniotic fluid embolism, sending DIC panel

## Ill-appearing neonate

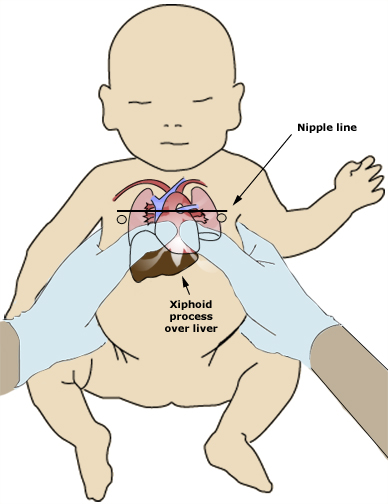
* Key things to do during first 5 minutes of neonatal resuscitation
* Updated NRP guidelines 2015 <http://circ.ahajournals.org/content/132/18_suppl_2/S543.long>



* **For babies born precipitously in ED, always ask: 1) Term? 2) Good tone? 3) Breathing or crying?** 
  + If yes to all 3Qs, consider delaying cord clamping and hand baby to mother for skin-to-skin contact while keeping baby warm and dry.
    - Clamping of cord should be delayed 30-60 sec unless child requires immediate resuscitation
    - Associated with less IVH, NEC, better BPs and blood volume, but a/w more phototherapy requirement
  + If no to any of Qs, cut cord and begin resuscitation by:
    - Taking baby to **warmer** (make sure it’s on!, plastic bag from neck down) goal temp 36.5-37.5
    - Bulb syringe **suction** to clear secretions,
    - Dry, **stimulate**. Ventilate/oxygenate as needed.
    - Note time, document APGAR.
* Cutaneous temp monitor on liver – largest organ provides most consistent measurement. Hypothermia increases risk of intraventricular hemorrhage, respiratory issues, hypoglycemia, and late onset sepsis.
* Meconium aspiration no longer empirically intubated, treat similar to other babies with stimulation, suctioning, PPV as needed. Immediate intubation thought to delay resuscitation

**Resuscitating a neonate: HR, RR, Pox**

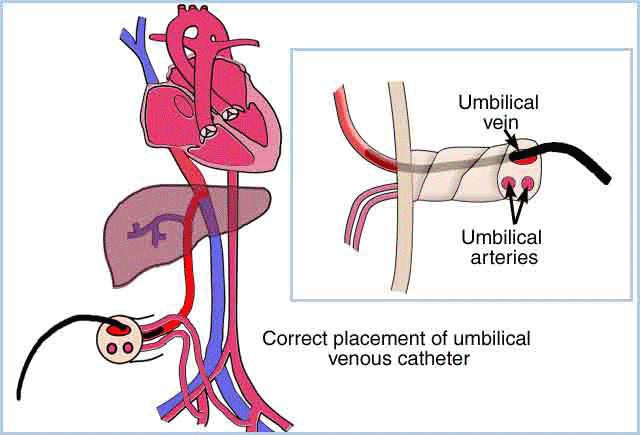
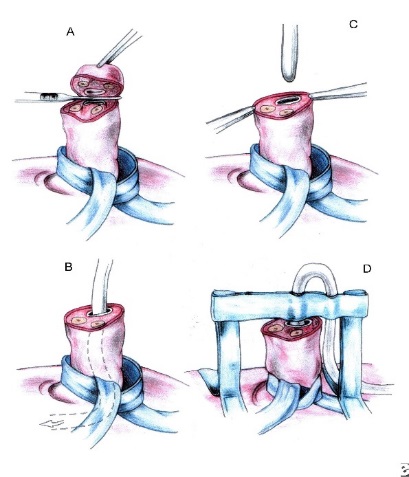
* **HR**: Detecting HR difficult, 3 lead ECG best, umbilical cord stethoscope alternate but not as accurate
  + If bradycardic HR <60, start chest compressions, thumb encircling chest wall, 3:1.



* + If not already done, intubate baby
  + Epi 1:10,000 concentration, dose 0.01 mg to 0.03 mg/kg IV, or 0.05 to 0.1 mg/kg via ETT
* **RR/Pulse ox** – low oxygen sat is normal in first few minutes of life. Increases by 5% every minute of life. Place monitor on R palm/wrist for pre-ductal measurement, reflects blood that is going to the brain.
  + **Normal preductal (right hand) O2 Sat**
  + Resuscitation with room air (FiO2 21%) initially
  + Give supplemental O2 - increase FiO2 if not achieving normal saturation or has a HR<100.
  + PPV using BVM to RR 40-60 for 30 sec, CPAP
  + If need for CPR, then intubated baby
* **Intubation:**

|  |  |
| --- | --- |
| **ETT = [age/4+4]** | **Laryngoscope blade** |
| <28 wks 2.5 | Pre-term 0 |
| 28-34 wks 3.0 | Term 1 |
| 34-38 wks 3.5 |  |
| >38 wks 3.5 to 4 | PEEP 5 |
| Depth 3xETT size to lip |  |

* **Umbilical vein catheter:** (PED Rm 4 has BOA cart w/ UVC kit)
  + <http://emedicine.medscape.com/article/940865-overview>
  + <http://www.fprmed.com/Pages/Procedures/UmbilicalVein_Cath.html>
  + Smiley face: 2 eyes = umbilical arteries, flat mouth = vein. Insert catheter into vein 2-4cm until blood flow achieved
  + DIY UVC kit – 5 Fr feeding tube, 11 blade scalpel, hemostats, forceps, 3 way stop cock, 10ml flush, umbilical tie



* Why does baby need resuscitation?
  + Shock? Blood or volume? Give transfusion or IVF bolus as indicated, 10ml/kg, repeat prn
  + Uterine rupture or abruption?
  + Accident with umbilical cord?
  + Hypoglycemic? 2ml/kg of D10 as initial bolus, then D10W maintenance IVF at 80ml/kg per day.