

IN THE NAME OF GOD

MANAGEMENT OF THE
SECOND STAGE OF
LABOR

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The second stage of labor *begins when the cervix is completely dilated and ends with the birth of baby.*

Perineal care : Application of warm compresses and perineal massage with a lubricant have been proposed as means of softening and stretching the perineum to reduce perineal trauma during birth. In a meta-analysis of randomized trials, applying warm compresses during the second stage of labor reduced third- and fourth-degree tears compared with a hands off or no warm compress technique.

If used, warm compresses can be made from clean wash cloths or perineal pads immersed in warm tap water [43 degrees Celsius] and wrung to release excess water. They are held against the mother's perineum **during and between pushes**, and changed as needed to maintain warmth and cleanliness. Perineal massage is performed during and between pushes with two fingers of the lubricated gloved hand moving from side to side just inside the patient's vagina and exerting mild, downward pressure.



Pushing position and technique : Most women begin pushing when the cervix is fully dilated. However, if the FHR tracing is normal and station is high, we often ask women to delay pushing until the further descent has occurred to reduce the duration of time of maximal maternal exertion. This decision is based on patient-specific factors, such as whether there is a need to expedite delivery, maternal fatigue, and maternal preference. There are no strong data that one approach is better than another.

We have the patient push in the position she finds most comfortable. Upright positions where the pelvis is in a vertical plane (eg, walking, standing, sitting, supported kneeling) have several theoretical benefits, such as an increase in pelvic dimensions and good fetal alignment. The supine position should be avoided because of aortocaval compression, but a left or right lateral position avoids this complication and is acceptable.

In women with **epidural anesthesia**, results of meta-analysis favored a **lateral lying down position** because the odds of spontaneous vaginal delivery were lower in women assuming an upright position.

The optimum pushing technique is also unclear. We favor allowing the woman to bear down when she feels the need (ie, spontaneous pushing or physiologic pushing), **unless epidural anesthesia** has inhibited the bearing down sensation. **We advise against Valsalva pushing** (pushing with a closed glottis), as there is no clinically significant benefit to this technique. Women are typically told to pull back their knees, tuck in their chin, take a deep breath, bear down at the start of a contraction, and **push for 10 seconds with the goal of three pushes per contraction**. However, there is no evidence that coaching women in this way has any benefit over allowing them to bear down and push according to their own reflex needs in response to the pain of contractions and the pressure felt from descent of the fetal head.

A 2017 meta-analysis of pooled data from 21 randomized trials of different approaches to pushing reported the following major findings:

- In women with epidural analgesia, delayed pushing lengthened the second stage by about one hour and decreased pushing duration by a mean of 19 minutes compared with immediate pushing. It also slightly increased the chance of a spontaneous vaginal delivery. Although the frequency of low umbilical cord blood pH increased, no differences were observed in rates of admission to the neonatal intensive care or five-minute Apgar score less than seven.
- Pushing technique (spontaneous, directed, immediate, delayed, posture) did not appear to have a major impact on the occurrence of adverse maternal or neonatal outcomes.

Duration : As long as the FHR pattern is normal and some degree of progress is observed, there is no strict upper limit to the duration of the second stage. There is no threshold at which maternal or neonatal outcomes abruptly worsen, but a second stage lasting longer than **four hours in nulliparas** and **two hours in multiparas** appears to be associated with a small increase in frequency of maternal and potentially serious neonatal complications.

Maternal position for delivery : If no fetal manipulation or complications are anticipated, delivery can be accomplished with the mother in almost any position that she finds comfortable. Common positions include the lateral (Sims) position and the partial sitting position. Stirrups are not mandatory. The lithotomy position is advantageous if fetal manipulation or need for optimal surgical exposure is anticipated.

Episiotomy : Routine use of episiotomy is not beneficial and should be avoided.

Delivery of the newborn: There is no consensus regarding the best method for protecting the perineum at delivery, other than **avoiding routine episiotomy and fundal pressure.** We use the following approach called the "hands-on" technique to prevent precipitous expulsion of the newborn, which can lacerate the perineum and anal sphincter. We ask the woman to pant or make only small expulsive efforts when the head is fully crowning and delivery is imminent; this prevents the head from being propelled through the perineum. We use one hand to maintain the head in a flexed position and control the speed of crowning and use the other hand to ease the perineum away from the path of the emerging head.



If the cord is around the neck (nuchal cord), slipping the cord over the head usually successfully frees the fetus from the tether. If a single nuchal cord is not reducible, we doubly clamp and transect it.

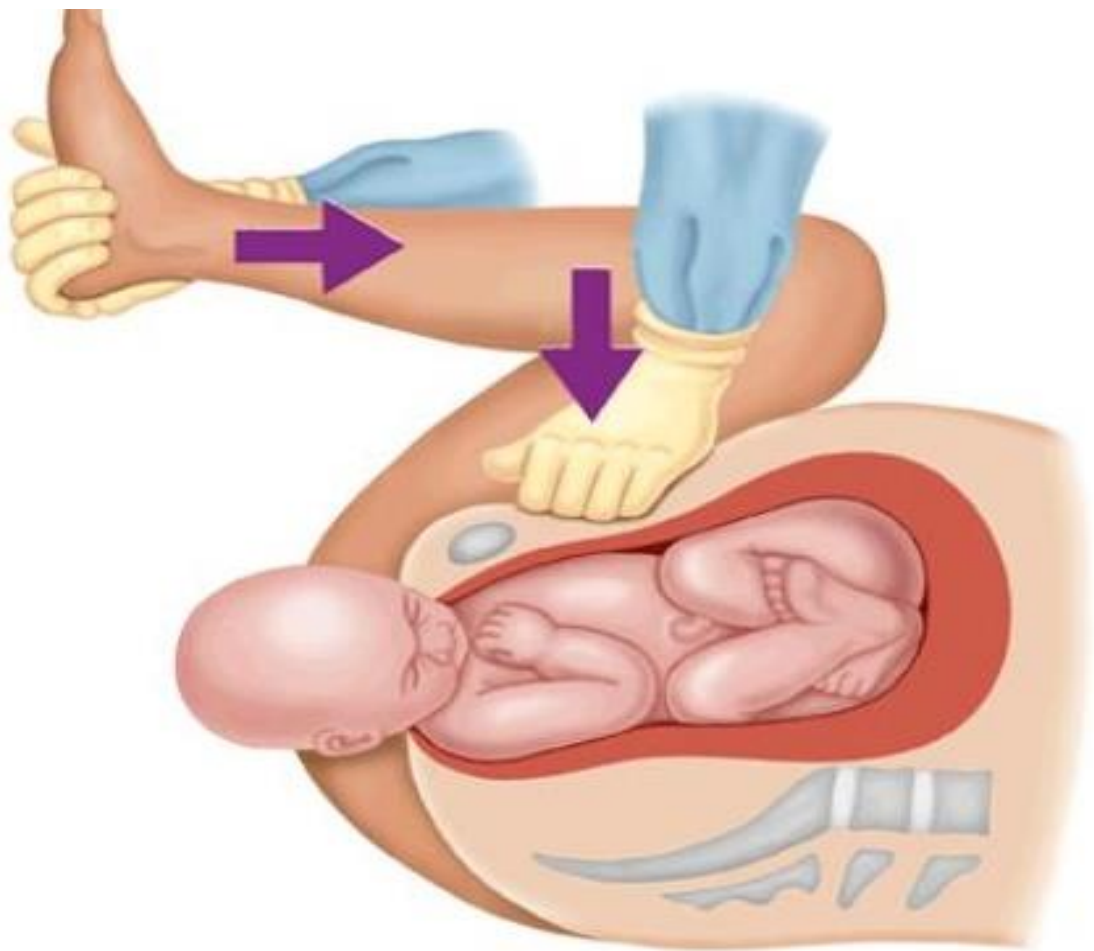
Mucus is gently wiped from the newborn's nose and mouth. Most newborns do not need to be suctioned.

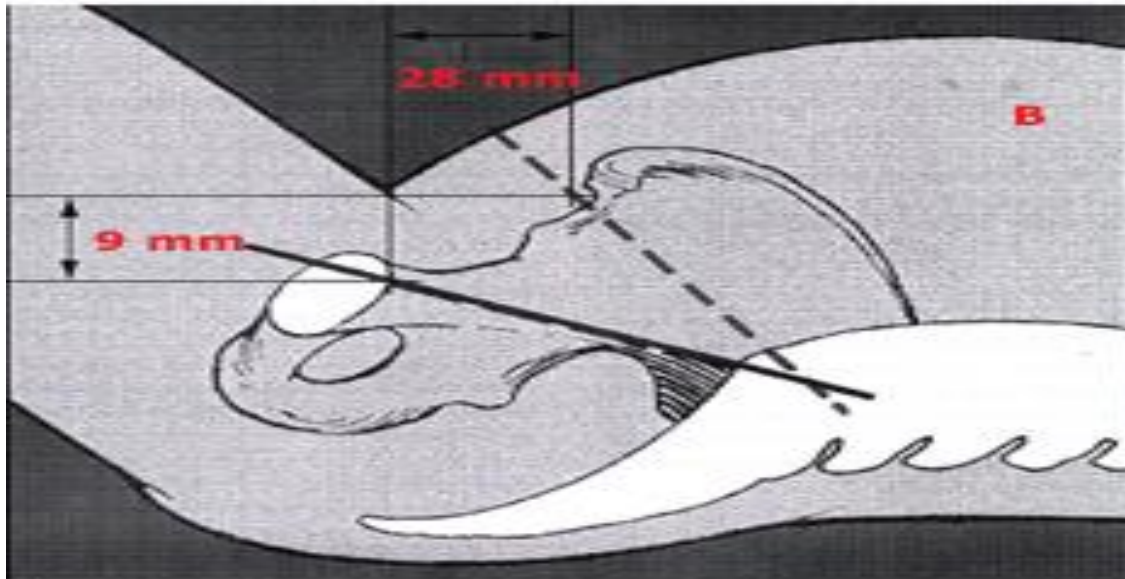
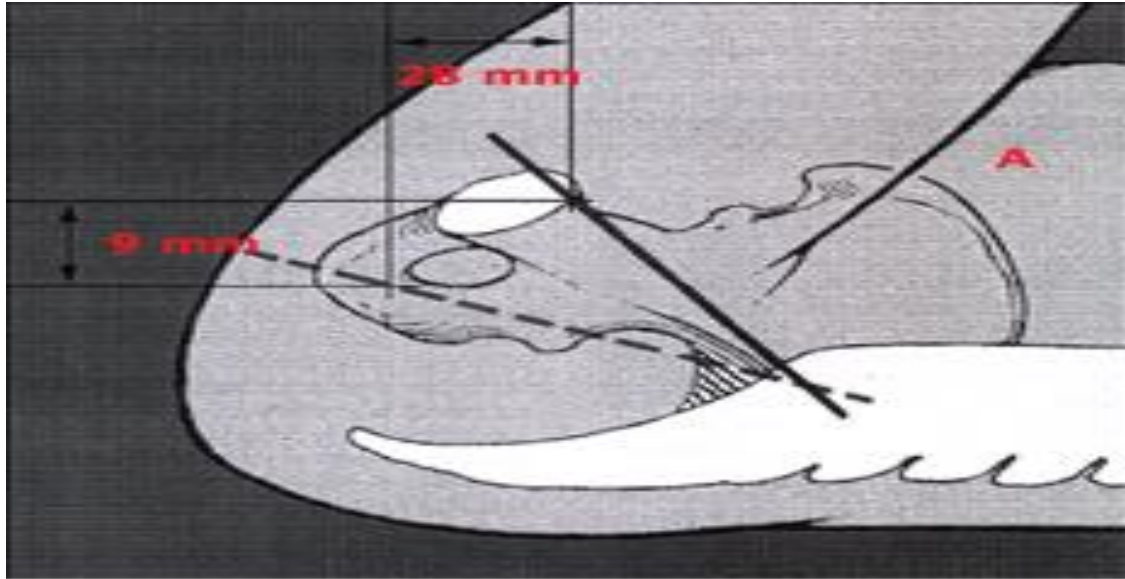
After delivering the head, a hand is placed on each side of the head and the anterior shoulder is delivered with the next contraction, using gentle downward traction toward the mother's sacrum in concert with maternal expulsive efforts. In this way, the anterior shoulder is guided under the symphysis pubis. The posterior shoulder is then delivered by upward traction. These movements should be performed with as little downward or upward force as possible to avoid perineal injury and/or traction injuries to the brachial plexus. The delivery is then completed, either spontaneously or with a gentle maternal push.

Shoulder dystocia:

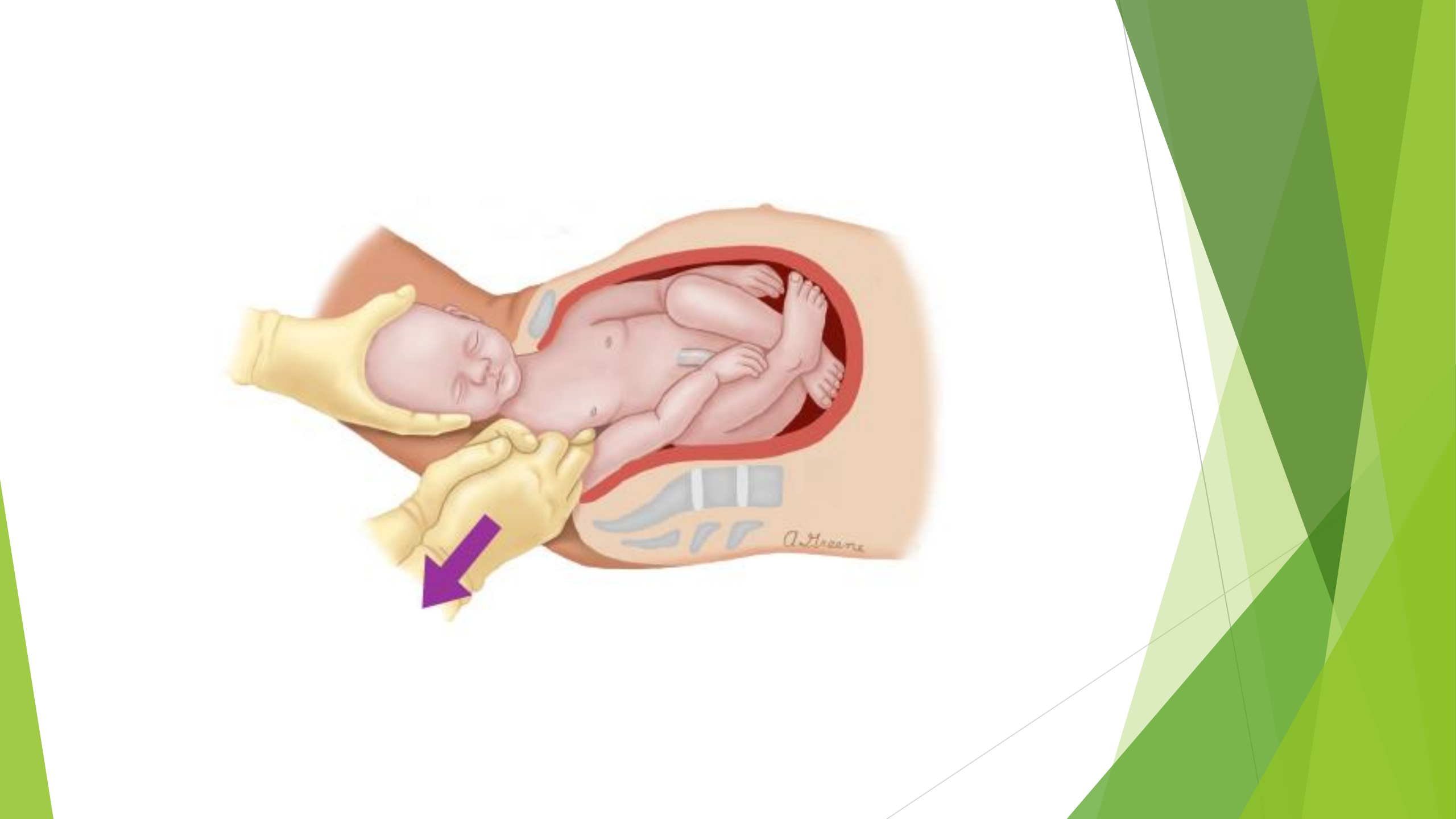
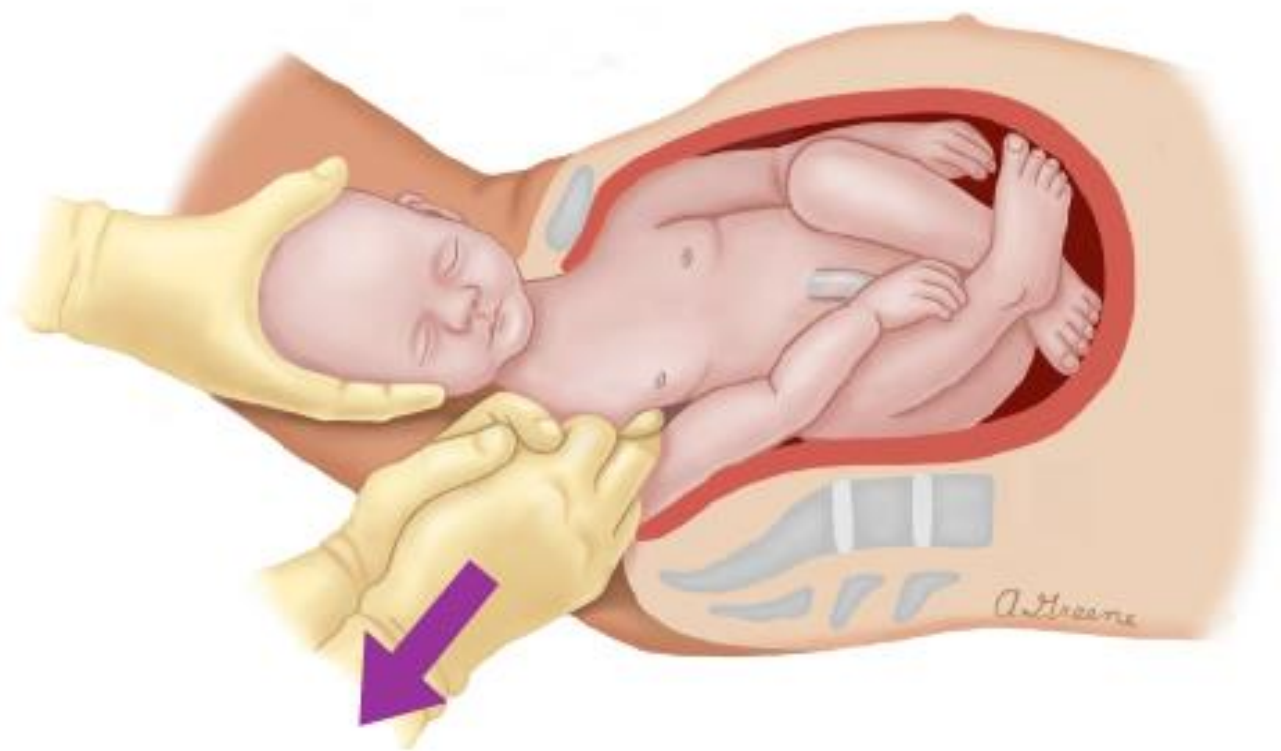
Initial steps – When shoulder dystocia is suspected, the gravida and labor room personnel should be given instructions in a clear and calm manner.

- Nursing, anesthesia, obstetric, and pediatric staff should be called to the labor room, if not already available, to provide assistance as needed.
- The patient should be positioned with her buttocks flush with the edge of the bed to provide optimal access for executing maneuvers to affect delivery.
- The mother should be told **not** to push while preparations are made and maneuvers are undertaken to reposition the fetus.
- Excessive downward traction, greater than usual head and neck traction, and **fundal pressure should be avoided**.
- A tight nuchal cord, if present, should be released over the fetal head and left intact as umbilical blood flow helps in neonatal resuscitation and transition.
- Performing a mediolateral or a third- or fourth-degree median episiotomy may be useful to facilitate delivery of the posterior shoulder and other internal procedures, but does not by itself help to release the anterior shoulder and increases perineal trauma.
- **A distended bladder**, if present, should be drained, which will facilitate suprapubic pressure and may reduce any space-occupying effects of a full bladder in the vagina.





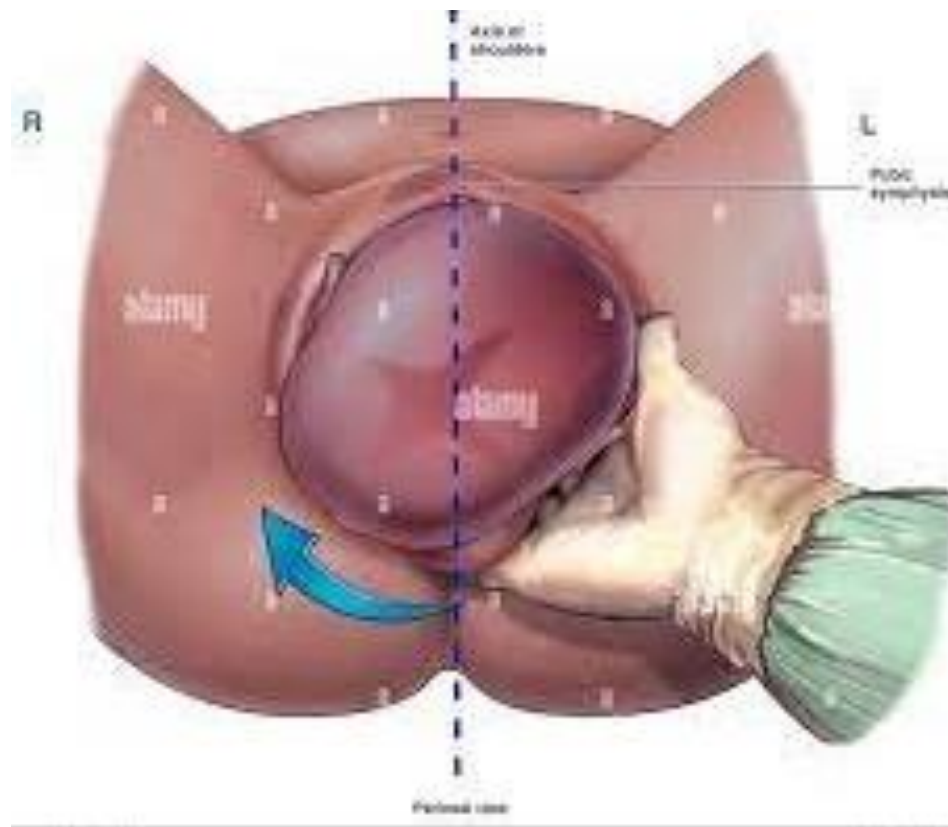




RUBINS MANEUVER



Woods screw maneuver



Oropharyngeal care : There is no evidence that oro-nasopharyngeal suctioning by a bulb or catheter is beneficial in healthy term newborns.

ACOG recommend against routine nasopharyngeal suctioning of meconium-stained newborns.

Cord clamping: We agree with an ACOG committee opinion that recommends delaying umbilical cord clamping after birth in vigorous term infants.

ACOG suggests a delay of at least 30 to 60 seconds.

Cord milking : We do not milk or strip the umbilical cord; however, this practice is an alternative to delayed clamping for enhancing blood transfusion. Depending on technique, cord milking may be more efficient than delayed cord clamping for improving neonatal blood volume. In a 2015 meta-analysis of seven randomized trials (n = 501 infants) of umbilical cord milking versus usual care, umbilical cord milking significantly increased hemoglobin levels without increasing the need for phototherapy for hyperbilirubinemia.

Maternal-newborn interaction: In the absence of maternal or neonatal complications, a healthy term infant can be dried to minimize heat loss and given to the mother. Skin-to-skin contact may benefit early mother-infant attachment and breastfeeding outcomes. The location of the newborn (above or below the level of the placenta) before cord clamping did not appear to significantly affect the volume of placenta-to-newborn transfusion in a randomized trial. Therefore, concerns about transfusion volume should not influence the decision to place the newborn on the mother's abdomen.