



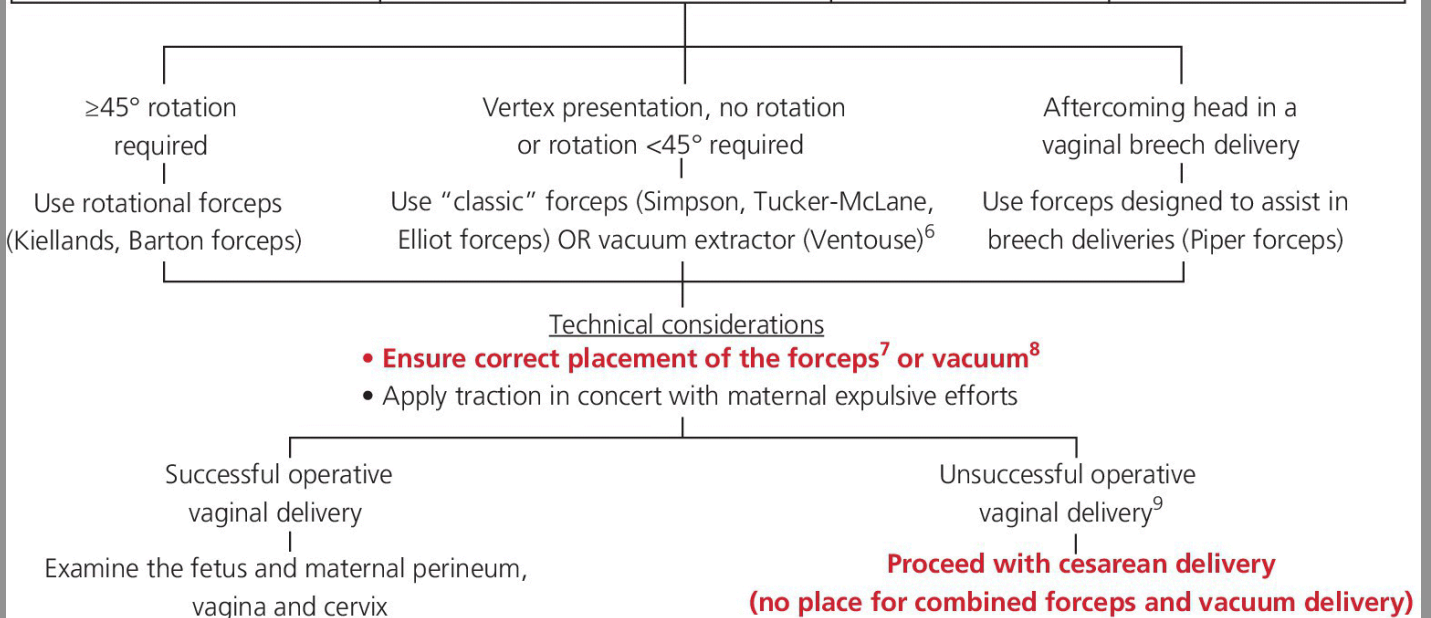
Learn simply

Operative Vaginal Delivery

- **Confirm an indication for operative vaginal delivery²**
- **Exclude contraindications to operative vaginal delivery³**
- Be aware of the type of operative vaginal delivery you will be performing⁴
- Review the risks, benefits, and alternatives to operative vaginal delivery
- Discuss potential complications to the mother and fetus⁵

Ensure that all prerequisites for operative vaginal delivery have been fulfilled

Maternal criteria	Fetal criteria	Uteroplacental criteria	Other criteria
<ul style="list-style-type: none"> • Adequate analgesia • Lithotomy position • Bladder empty • Clinical pelvimetry must be adequate in dimension and size to facilitate an atraumatic delivery • Verbal or written consent 	<ul style="list-style-type: none"> • Vertex presentation • Fetal head must be engaged in pelvis • Position of fetal head must be known • Station of fetal head must be $\geq +2$ • Attitude of fetal head and presence of caput succedaneum and/or molding should be noted 	<ul style="list-style-type: none"> • Cervix fully dilated • Membranes ruptured • No placenta previa 	<ul style="list-style-type: none"> • Experienced operator who is fully acquainted with the use of the instrument • The capability to perform an emergency cesarean delivery if required



1. Operative vaginal delivery refers to any operative procedure designed to expedite vaginal delivery, including forceps delivery and vacuum extraction.

2. Indications for operative vaginal delivery include:
 - (i) **maternal indications** such as maternal exhaustion, inadequate maternal expulsive efforts (women with spinal cord injuries or neuromuscular diseases), need to avoid maternal expulsive efforts (women with certain cardiac or cerebrovascular disease);

 - (ii) **fetal indications** such as non-reassuring fetal testing (“fetal distress”); and (iii) other indications such as prolonged second stage of labor (nullipara: ≥ 3 hours without regional analgesia, ≥ 4 hours with regional analgesia; multipara: ≥ 2 hours without regional analgesia, ≥ 3 hours with regional analgesia), elective shortening of the second stage of labor using outlet forceps.

Contraindications to operative vaginal delivery include

placenta previa, absolute cephalopelvic disproportion or any other contraindication to vaginal delivery; prematurity (gestational age < 34 weeks is an absolute contraindication for vacuum but not forceps delivery); suspected fetal skeletal dysplasia; suspected fetal coagulation disorder; fetal macrosomia (a relative contraindication); or failure to fulfill the prerequisites listed in the table below (such as station $> 2+$, intact membranes, cervix not fully dilated or failure to obtain consent).



1. The 1988 ACOG classification of forceps deliveries is outlined in the table below. The old category of “high forceps” (in which forceps were placed with the fetal head floating and ballotable above the brim of the true pelvis) has been abandoned due to excessive fetal risk.
2. Mid-forceps deliveries should be performed only by competent operators, and after careful consideration of alternative approaches (oxytocin administration, cesarean or continued expectant management) and of the potential fetal risks.
3. Indications for vacuum extraction-assisted delivery are similar to those for forceps delivery.
4. Potential complications of operative vaginal delivery include maternal perineal injury (especially with rotational forceps delivery) and fetal complications such as facial bruising, laceration, and cephalhematoma (more common with vacuum extraction). Facial nerve palsy, skull fractures, cervical spine injuries, and intracranial hemorrhage are rare. Failed operative vaginal delivery is more common with vacuum than with forceps, and more common with the soft cup vacuum extractor than with the rigid “M” cup.
5. The choice of which instrument to use depends largely on clinician preference and experience. In some circumstances, one instrument may be preferred over another. For example, vacuum extraction can be accomplished with minimal maternal analgesia. A vaginal birth is more likely to be achieved with forceps than with vacuum extractors, though.



Operative Vaginal Delivery

1. Exact knowledge of fetal position, station, and degree of asynclitism (lateral flexion) is essential to proper forceps application. After performing a "phantom application," the posterior blade is placed first in order to prevent loss of station of the fetal head. When the sagittal suture is the anterior-posterior diameter or the head position is left occiput anterior, the left blade is inserted first. This facilitates locking the handles after application.
2. Proper application is determined by assessing the position of the forceps relative to three landmarks on the fetal skull: the posterior fontanelle, sagittal suture, and parietal bones.
3. Three checks for proper application include ensuring that:
 - (i) the sagittal suture is perpendicular to the plane of the shanks throughout its length;
 - (ii) the posterior fontanelle is one fingerbreadth away from the plane of the shanks and equidistant from the sides of the blades directly in front of the locked point of the articulated forceps; and
 - (iii) if fenestrated blades are used, the amount of fenestration in front of the fetal head should not admit more than the tip of one finger.
4. The purpose of these checks is to prevent asymmetric compression of the fetal head. If rotation is required, it should be performed at this time. Delivery is then accomplished by traction applied along the pelvic curve in concert with uterine contractions.



1. To promote flexion of the fetal head with descent, the suction cup of the vacuum should be placed over the “median flexing point” (i.e. symmetrically astride the sagittal suture with the posterior margin of the cup anterior to the posterior fontanelle and the opposite edge situated about 3 cm from the anterior fontanelle). Low suction (100 mmHg) should be applied. After ensuring that no maternal soft tissue is trapped between the cup and fetal head, suction should be increased to 500–600 mmHg and sustained downward traction applied along the pelvic curve in concert with uterine contractions. Suction is released between contractions. Ideally, episiotomy should be avoided as pressure of the perineum on the vacuum cup will help to keep it applied to the fetal head and assist in flexion and rotation.
2. For vacuum-assisted vaginal delivery, the procedure should be abandoned if the vacuum cup detaches three times, if there is any evidence of fetal scalp trauma, if delivery is not effected within 20 minutes, or if there is no descent of the fetal head.

3. ACOG classification of forceps deliveries

Type of procedure

Criteria

Outlet forceps

Scalp is visible at the introitus without separating the labia
 Fetal skull has reached the level of the pelvic floor
 Sagittal suture is in the direction anteroposterior diameter or in the right or left occiput anterior or posterior position
Fetal head is at or on the perineum

Low forceps

Leading point of the fetal skull (station) is station +2 or **more but has not yet reached the pelvic floor**

Mid-forceps

The head is engaged in the pelvis but the presenting part is above +2 station

High forceps

(Not included in this classification)

