



## Questions & Answers

### Common Questions about Vacuum Assisted Delivery

We are commonly asked several questions about vacuum assisted delivery. Vacuum delivery has been the subject of much attention recently and in the midst of this attention we referenced the literature and enlisted the help of leading experts to design the best cup and address the problems. We feel the best way to answer questions is to quote the literature.

How many pop-off's should be allowed?

"Cup detachment...

... should not be accepted without trying to identify an explanation -

... consider

- incorrect traction technique
- deflexing or paramedian application
- large caput succedaneum
- inadequate vacuum or faulty equipment"

Vacca A: Handbook of Vacuum Extraction in Obstetric Practice.  
Brisbane, Australia. Vacca Research Pty. Ltd. 1999, 19-21.

"... should not be regarded as a safety feature.

... is a warning sign of incorrect technique or CP disproportion.

... complete detachment may be prevented by exerting counter-pressure on cup with finger and thumb of non-pulling hand."

Ref: Vacca A, Operative Techniques. Current Obstet. & Gynecol. 1999; vol 9, page 44.

"... should not continue after 3 pop-off's..."

Ref: Panel of Experts, Brumfield, Gilstrap III, O'Grady, Ross, Shcifrin. Cutting your legal risks VE, OBG Management, March 1999, page 32.

"... with experience, "pop-offs" are quite rare..." Bofill & Morrison

"... cease and desist after two reapplications..." Chez, Bofill, Morrison

Ref: Chez, Bofill, Morrison. Performing vacuum-assisted vaginal delivery, Clinical Dialogue. Contemporary Ob/Gyn, Nov. 1998: 67.

What are the time limits with vacuum?

"...We do not keep the cup on the fetal scalp for longer than 20 minutes"

Ref: Chez, Bofill, Morrison. Performing vacuum-assisted vaginal delivery, clinical dialogue. Contemporary Ob/Gyn, Nov. 1998: 64.

Ref: Bofill. A randomized...extractor. Am J of Obstet & Gynecol. Nov. 1996; 1326.

“...delivery of the fetal head should be completed within 15 minutes of applying the cup. If the duration ... exceeds this time limit, or if descent does not occur easily, traction should be discontinued.”

Ref: Vacca A, Operative Techniques. Current Obstet. & Gynecol. 1999; 44.

“...in hard cups adequate chignon is formed after two minutes...  
...progress of descent should be made on each traction...”

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Brisbane, Australia. Vacca Research Pty. Ltd. 1999, 19-21.

### Should the vacuum level be reduced between contractions?

“... Initially induce vacuum of 150 mmHg ...while cup position of flexing median is checked...then increase to 600 mmHg...during rest of procedure.”

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Brisbane, Australia. Vacca Research Pty. Ltd. 1999, 19-21.

“...we always use 600 mmHg regardless of station or type of cup.”

Ref: Chez, Bofill, Morrison. Performing vacuum-assisted vaginal delivery, clinical dialogue.  
Contemporary Ob/Gyn, Nov. 1998: 63.

“... we studied...and could find no difference in any maternal or fetal outcomes between those patients in whom we applied intermittent vacuum versus those in whom we used a continuous vacuum technique., we consider this issue a physician preference.”

Ref: Chez, Bofill, Morrison. Performing vacuum-assisted vaginal delivery, Clinical Dialogue.  
Contemporary Ob/Gyn, Nov. 1998: 64.  
Ref: Bofill, et al. A randomized trial of two vacuum extraction techniques. Ob/Gyn 1997: 89, 758-762.

### Are rotational vacuum deliveries clinically prudent?

“...Anterior rotation from occiput posterior and lateral positions will usually occur spontaneously during vacuum extraction provided the application of the cup causes flexion. This auto-rotation should occur without any assistance from the obstetrician, and any attempt to assist rotation by manipulation of the cup may lead to the cup slipping on the scalp.”

Vacca A: Handbook of Vacuum Extraction in Obstetric Practice.  
Brisbane, Australia. Vacca Research Pty. Ltd. 1999, 19-21.

“... we never apply torsion to the cup in an attempt to effect rotation...”

Ref. Bofill, Morrison. V.A. Delivery Clinical dialogue. Cont. Ob/Gyn, Nov. 1998, pg. 64.

“... rotational V.E. like rotational forceps deliveries, are more complex and should be attempted only by operators adequately trained on the Posterior Cup.”

Ref. Vacca A. Operative Techniques, The Trouble with Vacuum Extraction. Current Ob/Gyn. 1999; 9, pg 44..

### How much force should be used during traction?

“...compression forces...increase rapidly with traction forces greater than 20 kg (44 lb.)”

Issel & Moolgaoker.

“...The least...force to effect delivery...will result from flexing median application ...followed by traction in the line of the birth canal.”

Vacca A: Handbook of Vacuum Extraction in Obstetric Practice. Brisbane, Australia. Vacca Research Pty. Ltd. 1999, 19-21.

### Does oblique traction cause dangerous shearing force?

“...Traction that does not cause descent of the head (negative traction) may cause the aponeurosis to separate from the cranium and injure the underlying veins...Subgaleal hemorrhage is frequently preceded by difficult extraction associated with deflexing and paramedian applications of the cup.”

“...Correct application of the vacuum cup by promoting flexion and synclitism, should reduce the size of the presenting diameters and help to make the delivery easier. In addition, traction directed in the line of the axis of the birth canal should assist the head to descend with the least resistance. For mid-pelvic procedures, traction should generally be directed in a more posterior direction (i.e. towards the sacrum).”

“...The relative shift in the position of the cup allows the operator to know that flexion (and/or synclitism) has occurred by the cup becoming visible within the vagina and by the lengthening of the traction cord or chain outside the introitus.”

“...Deflexing applications of the cup result in larger-than-optimal fetal presenting diameters of the head and are associated with high failure rates and injury to the fetus...only a flexing median application will encourage the fetal head to adopt the most favourable presenting position. For this reason, operators should strive to achieve this type of application for all vacuum extractions and to eliminate deflexing and paramedian cup applications. To do this, operators will be required to know how to locate the position of the flexion point.”

“...Oblique traction, however, predisposes to cup detachment which may cause injury to the scalp. To counteract this tendency, traction should be a two-handed exercise with the right hand (for right-handed persons) holding the traction handle and pulling in the direction of descent. The thumb of the non-pulling hand presses against the dome of the cup and helps to prevent complete detachment from the scalp while the index finger of the same hand rests on the scalp in front of the cup and monitors descent of the head.”

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### When is the time for patient education & consent?

“...Delivery options should be discussed at a prenatal visit - Gilstrap III.

...O’Grady recommends...discussing what might or might not happen, including the possibility of proceeding to CS.

...Schifrin recommends preparing a detailed chart entry that documents details of vacuum procedure.”

Ref: Panel of Experts, Brumfield, Gilstrapp III, O’Grady, Ross, Shcifrin. Cutting your legal risks VE, OBG Management, March 1999, page 35.

“...Operators should begin (before procedure needed) with an explanation of the nature of V.E. to the mother and outline her role in the procedure.”

Ref. Vacca A. Operative Techniques, The Trouble with Vacuum Extraction. Current Ob/Gyn. 1999; 9, pg 43.

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