

**Pilot Study of a New Electronic Vacuum Monitoring Device
For Use During Vacuum Assisted Delivery**

Objective: Vacuum is now used more frequently than forceps for operative vaginal delivery. Recent laboratory data suggests that pistol-type mechanical vacuum gauges are frequently inaccurate over the range of 0 to 60 cm Hg. We report a pilot study of a new electronic device that measures the vacuum during vacuum assisted delivery and records the vacuum values in real time on the uterine activity channel of standard maternal/fetal monitors.

Methods: The Vacuum Birth Safeguard (Medevco Inc, Dallas, Texas) is an electronic gauge that can be incorporated into standard vacuum delivery devices. In this study it was used with the Kiwi OmniCup hard plastic vacuum device in 20 cases of vacuum assisted vaginal delivery.

Results: The mean duration of cup application was 4.5 min (range 1-12); mean cup vacuum 55 cm Hg (range 20-70); mean number of pulls 2 (range 1-5); number with 'pop-offs' 7 (35%); position of cup application: flexing median 14 (70%) and flexing paramedian 6 (30%).

Conclusion: The device creates a tracing on standard maternal/fetal monitors that provides an accurate and permanent record of the maximum vacuum, time at maximum, total time of vacuum, the number of pulls, and the number of involuntary releases (pop-offs). As such, it is a useful tool for clinical audit and potential litigation defense.

Vacuum Birth Safeguard (VBS) Compared to Standard

