

Intrauterine Pressure Monitoring Balloon-Tipped vs. Transducer-Tipped Catheters

So-Called Sensor-Tipped IUPCs Do Not Operate the Same Way

Balloon-Tipped Catheter (Koala®)



Force exerted on air-filled balloon at the tip is mechanically transmitted through an air column to remote transducer. The reused electronic pressure transducer located in the end of the interface cable converts mechanical pressure signal to electrical signal for fetal monitor.

- Resting tone may not be accurate over time.
- Reused sensitive electronic pressure transducer is *exposed* to damage and contamination.
- Rezeroing may be *required* to reinflate the balloon to maintain the integrity of the mechanical transmission column

- Mechanical pressure transmission column is *subject to breakdown* from:

Inadequate amniotic fluid contact with the balloon surface (placement is critical)

Air escaping from balloon over time when pressurized

Moisture entering the balloon or air-filled catheter body

Motion artifact (air is a compressible medium that responds elastically to pressure changes)

Transducer-Tipped Catheter (Intran Plus®)



Force exerted by uterine activity is *converted* to an electrical signal *at the tip*. The electrical signal is then transmitted through a wire from the catheter tip in utero to the fetal monitor.

- Transducer-tip accurately measures resting tones at all patient positions.
- Calibrated, *single-use* pressure transducer ensures accuracy for every patient.
- Rezeroing is *not required* unless a new monitor is used.

- Transmission of the *electrical signal* (rather than a mechanical signal) through the catheter ensures reliability of tracing over the many hours of a difficult labor.

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