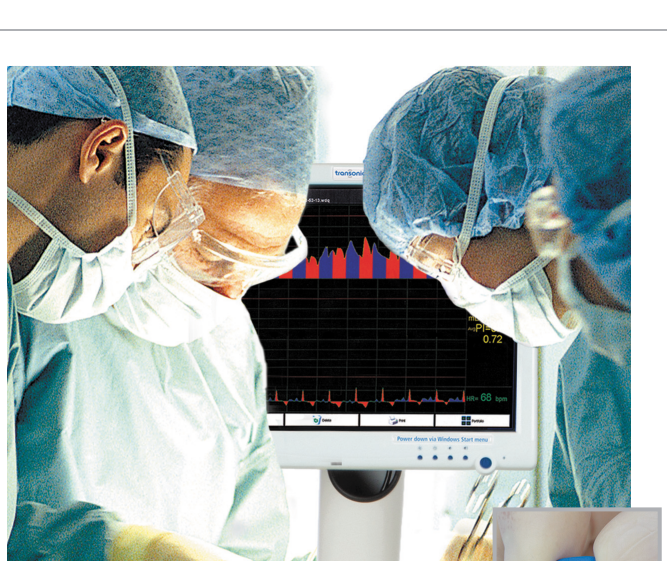
Volume Flow with 4 & 6 mm COnfidence Probes



A Direct Measure of Volume Flow through the Aorta & Pulmonary Artery to Determine Qp/Qs

Blood Flow - the Heart of the Matter

Whatever the nature of a defect, the primary goal of pediatric surgery is to create or restore blood flow to traverse its normal circulatory route through the lungs and heart and into the systemic circulation so that a child can grow and thrive.

After surgery, waiting for symptomatic acknowledgement of surgical success is anxiety-provoking, time-consuming and subjective. When blood flow is measured directly during the surgery to determine single flows or Qp/Qs, surgeons have the opportunity to make immediate, necessary revisions before closing the patient.

Transonic's intraoperative measurements may either confirm a surgeon's clinical impression during the course of the surgery, or they can alert the surgeon to a potential problem when it can be most easily addressed.

To Measure Is to Know

The size and fragility of pediatric patients make their surgeries among the most challenging to perform. Topping the list of challenging pediatric surgeries is repair of hearts of children born with congenital defects (CHD). Extending open-chest periods and staged surgeries add to the importance of knowing how much blood is flowing through re-directed pathways.

Since 1988, Transonic flow measurements have been used by flow innovators such as Dr. Constantine Mavroudis to develop procedures such as the fenestrated Fontan for pediatric heart repair.

Now Transonic's four-crystal AU Confidence Flowprobes that measure turbulent flow through great vessels have been sized for pediatric hearts. The small 4 & 6 mm Flowprobes offer immediate and highly accurate measurements of volume flow through the tiniest vessels.

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Continuous Measurements

Determining QP/QS during Pediatric Surgery with Flow-Assisted Surgical Technique (F•A•S•T)

Measuring Flow

Select Correct COnfidence Flowprobe Size

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Measure and Record Baseline Flows
on vessels of interest (Aorta, PA)

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Assess surgical strategy informed by flow data

Measure flows during the course of the surgery

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Record flow values

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Evaluate surgical progress informed by flow values

Measure and record flows at completion of surgery

F•A•S•T Medical Notes are intended to assist in surgical decision-making and are not diagnostic tools. Surgical interpretation is required.

1. Expose & identify vessels to be measured

2. Select correct COnfidence Flowprobe size

Measure the diameters of the vessels to be measured with a gauge before opening the Flowprobe package. Select a Flowprobe size so that the vessel will fill between 75% - 100% of the Flowprobe's ultrasonic sensing window.

6 & 4 mm Flowprobes

3. Prepare Vessel for Flowprobe

Determine the optimal position for applying the Flowprobe by selecting a site wide enough to accommodate the Flowprobe's body. Clear approximately 1 cm of the vessel to be measured of extraneous tissue (i.e. fascia, fat). Fat could interfere with acoustic transmission.

4. Add Couplant to Flowprobe

Apply ultrasonic gel to the inside of the liner. Then apply gel to the inside of the probe shell.

5. Apply Flowprobe

Position the liner on the vessel. Place the probe shell over the liner. Position the Flowprobe on the vessel so that the entire vessel lies within the ultrasonic sensing window of the Flowprobe.

6. Check Signal Strength

Check the Flowprobe's signal strength on the Flowmeter's Signal Quality Indicator. If acoustic contact falls below an acceptable value, an acoustic error message will be displayed. Apply more gel, if needed.

7. Multi-stage Flow Measurements

a. Measure Flows *In Situ*
   Measure baseline flows.
b. Measure Flows, as needed, throughout the course of surgery
c. Final Flow Measurement
   Measure flows at completion of surgery

Note: Probes can be left on the vessel for up to 24 hours.

5. Document Multi-stage Flows for Case Record

Document flow values from the multi-stage flow assessments. If the Flowmeter displays a negative flow, press the INVERT button to change the polarity before printing the waveform.

in Great Vessels

Optima Flowmeters & the AureFlo® System

Why rely on guesswork and intuition, or wait until postoperative conditions determine surgical success? Transonic Optima® Flowmeters provide immediate, quantitative flow measurements with unsurpassed accuracy and resolution. Make intraoperative flow measurements with a Transonic Flowmeter part of your routine to verify establishment of adequate blood flow before closing your patient.

The Optima Flowmeter complements a full line of Perivascular Flowprobes for vessels from 0.5 mm to 36 mm in diameter and Tubing Flowsensors for any size tubing.

HT354 Optima single-channel Flowmeter

HT364 Optima dual-channel Flowmeter for simultaneously measurements of aortic and pulmonary artery flows.

AureFlo System with Optima dual-channel Flowmeter

- Versatile Display
- Intuitive Operation
- Archive & Retrieve
- Convenient, Portable
- Case Portfolios: Record & Display

References

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Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells "gold standard" transit-time ultrasound flowmeters and monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. In addition, Transonic provides pressure and pressure volume systems, laser Doppler flowmeters and telemetry systems.

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