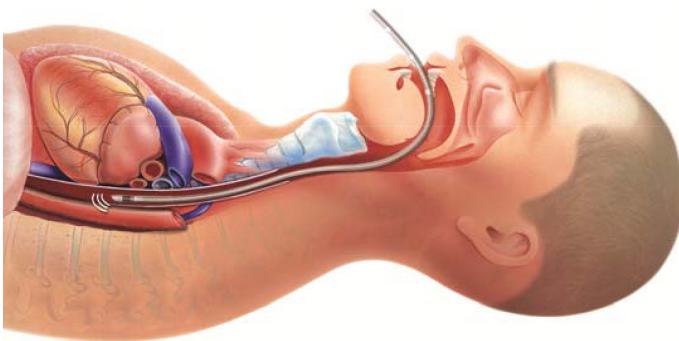
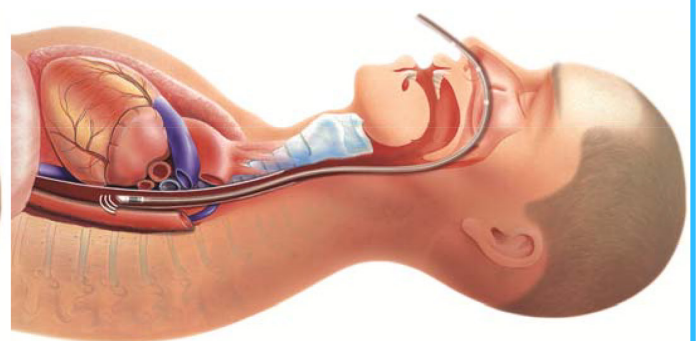


Using the TrueVue Monitor in the ICU

1. Apply water-based lubricant to tip of probe.
2. Insert probe, bevelled edge upwards into nose or mouth, to marker 2 at the lips or marker 3 at the nose.
3. Turn on the TrueVue monitor, press the power button on the front of the monitor beneath the Deltex badge and the start screen will appear within 10 seconds.
4. Connect a probe to the Dopplink and select "start".
5. Select Auto Patient ID, then input patient date of birth, height and weight (press in white boxed area and enter data). Select OK, check patient details and select confirm.

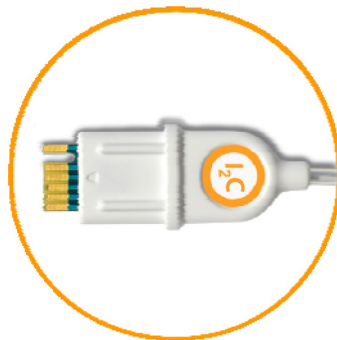
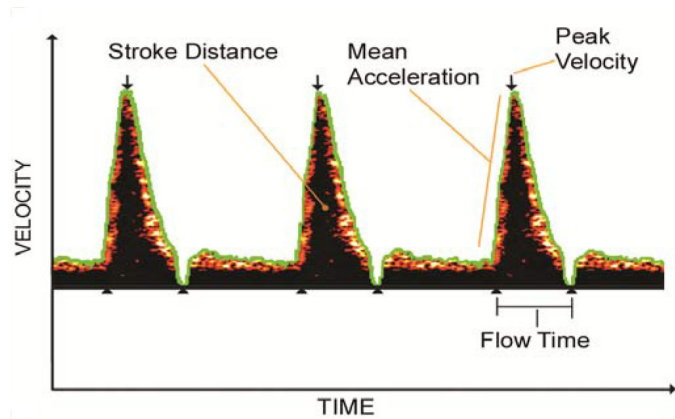


Oral Insertion



Nasal Insertion

6. Locate descending aortic waveform - gently rotate or adjust depth as necessary to between markers 1 & 2 for oral insertion and markers 2 & 3 for nasal insertion.
7. Optimise waveform with sharpest sound, tallest peaks and spectrum of colours.
8. Select options to adjust gain as necessary.



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The TrueVue Waveform

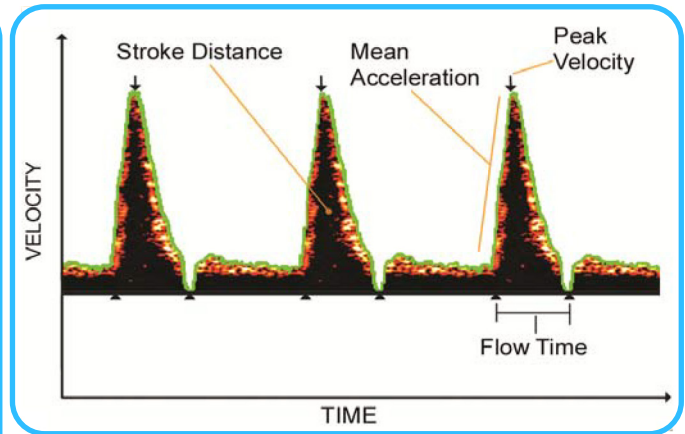
The green line indicates the velocity/time envelope which the monitor uses to make calculations. The white arrows indicate time and velocity values used for TrueVue™ calculations.

The Stroke Distance (SD) is the area under the waveform and is the basic measured parameter upon which calculations of Stroke Volume (SV) and all other Cardiac Output (CO) and indexed measurements are made. Stroke Volume is the parameter of choice for fluid management protocols, however changes in Stroke Distance (SD) or Stroke Volume Index (SVI) can also be utilised.

The waveform base, (flow time) depends on heart rate, left ventricular filling and afterload. The flow time corrected to a heart rate of 60bpm (FTc) is inversely correlated with the systemic vascular resistance (SVR).

FTc is often used as an indicator of hypovolaemia and fluid responsiveness, however during anaesthesia the vasodilatory effects of anaesthetic agents should be considered. Under anaesthesia or other vasodilators there may be a decrease in left ventricular afterload such that the baseline FTc may be elevated above the normal range (330 to 360 ms). A longer FTc may also be seen in conditions associated with a low SVR eg sepsis and pregnancy.

If FTc does not increase after an appropriate fluid challenge, other causes of vasoconstriction, (eg excess vasopressors, cold temperature, or obstructed circulation such as pulmonary embolus) should be considered.

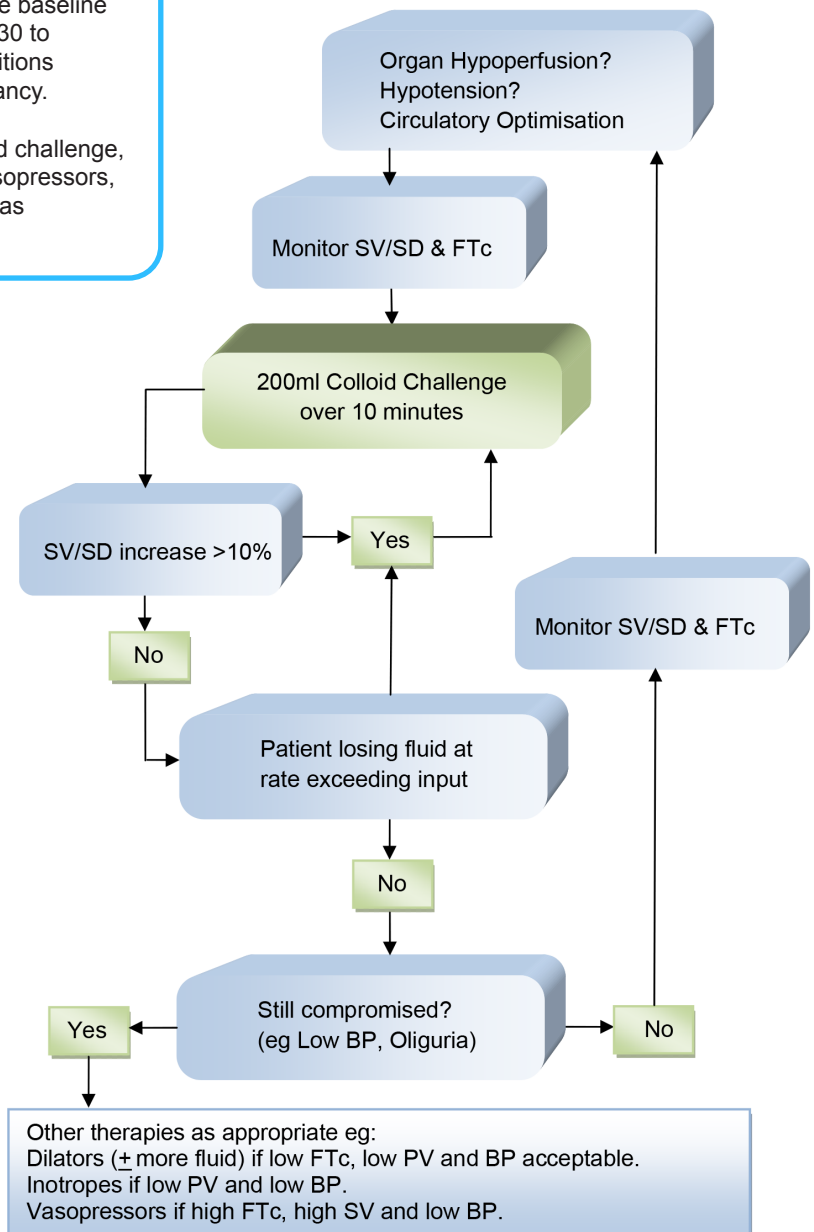


Typical Parameter Values
(These values should not be confused with a physiological target)

Flow Time Corrected (FTc)
330 - 360 milliseconds
NB -The effects of vasodilating drugs may elevate the FTc (see above).

Peak Velocity (PV)
20 years 90 - 120 cm/s
30 years 85 - 115 cm/s
40 years 80 - 110 cm/s
50 years 70 - 100 cm/s
60 years 60 - 90 cm/s
70 years 50 - 80 cm/s
80 years 40 - 70 cm/s
90 years 30 - 60 cm/s

Treatment Algorithm



Treatment Algorithm suggested by Prof. M. Singer, University College London