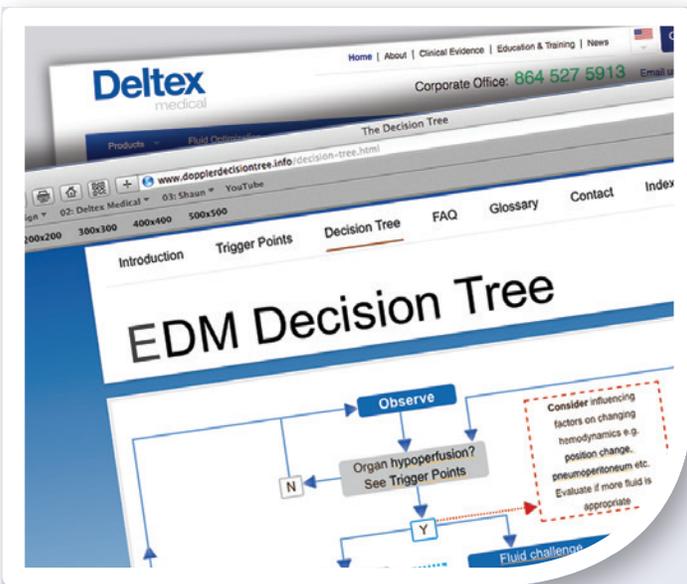


Decision Tree



How to use the Decision Tree

The decision tree was developed as an evidence based protocol for use with the EDM+ esophageal Doppler monitor. It can be used to assess cardiovascular function; guide vasoactive therapy following fluid management and to improve outcomes.

A good understanding of cardiovascular physiology is essential, including preload, afterload and contractility. Always ensure optimal focus of the Doppler probe is achieved before analyzing the data.

Navigation is by a series of Yes/No boxes. Actions are in blue boxes and questions are in gray boxes. Please note that caveats are presented in red, which may lead to an alternative pathway, or can be ignored if not appropriate for the patient.

For further information refer to www.dopplerdecisiontree.info or email clinical@deltexmedical.com

Trigger Points/Concerns

- Should not be assessed in isolation
- Are not the same as physiological targets
- Are indicative and not absolute
- Are not prioritized

Primary Clinical Indicators

- Hypotension: e.g. Systolic < 100 mmHg, MAP < 60-70 mmHg **OR** a clinically significant drop in MAP e.g. 30-40 mmHg from assumed 'normal' or baseline
- Tachycardia: e.g. > 90 bpm
- Oliguria: < 0.5 ml/kg/hr
- Low Cardiac Output State

Flow Indicators

- Reduced FTc: < 330 ms **OR** considered low for clinical condition e.g. any high resistant state
- Low Cardiac Output: significantly below 'normal' e.g. CO < 4-6 L, CI < 2.5 L/min/m²
- Low Stroke Volume: significantly below 'normal' e.g. SV < 50-70 ml, SVI < 30 ml

Supplementary Clinical Indicators

- Hypertension: e.g. Systolic > 180 mmHg or > 30-40 mmHg above baseline
- Lactate: > 2 mmol/L
- Base Excess: -3 or +3 mEq/L
- Peripheral Shutdown: looks 'unwell' e.g. pale, sweaty **OR** a clinical picture of poor perfusion
- SaO₂: < 93% **OR** having to increase FiO₂ by 20% to maintain sats
- Low ScVO₂: < 65-70%
- Reduced Conscious Level: any deterioration rather than a score

Exclusions

- Temperature
- DO₂
- CVP
- SVR
- SVV/PPV



Available on the Deltex Medical iPhone & Android app.



For further information please email clinical@deltexmedical.com



www.dopplerdecisiontree.info

Doppler Parameters

Flow Time Corrected (FTc) - the duration of flow during systole and is inversely related to afterload i.e. a reduced FTc indicates an increasing afterload; the most common cause is hypovolemia, where fluid is usually given. Other causes can then be considered. A high FTc is seen in low resistance states such as sepsis or with the use of vasodilating drugs including anesthetics. The normal value for a healthy resting individual is approximately 330-360 ms.

Peak Velocity (PV) - the fastest velocity of red cells in the aorta during systole and gives an indication of contractility. An approximate normal value would be 140 - age = cm/s.

Stroke Distance (SD) is the distance (cm) the blood travels along the aorta during systole. It is calculated from the velocity-time integral of the curve and is converted to **Stroke Volume (SV)** using the nomogram.

Decision Tree

