



The golden first hour is critical



Experts agree: drainage should be functional as soon as the thorax is closed.



Yet many systems cannot guarantee fast and reliable application of drainage since they **require a wall vacuum**.

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The incidence of bleeding can be up to 52.9 %¹

Excessive bleeding is a complication that can lead to serious post-operative events, including ARDS (Acute Respiratory Distress Syndrome), sepsis, renal failure, and death.²



¹Lopes CT et al. Eur J Cardiovasc Nurs. 2016;15(3):e70-7.
²Christensen MC et al. J Thorac Cardiovasc Surg 2009; 138:687-93.

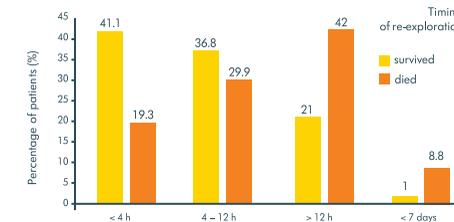
Undrained mediastinal blood causes inflammatory processes and may contribute to post-operative atrial fibrillation (POAF).³

Effective evacuation of blood and fluids is essential. Post-operative atrial fibrillation has been linked to longer hospital stays and increased readmissions and deaths during recovery after surgery.⁴

³St-Onge et al. Ann Thorac Surg 2018;105:321-8.
⁴Boyle EM et al. Innovations 2015;10:296-303.

Timing is essential

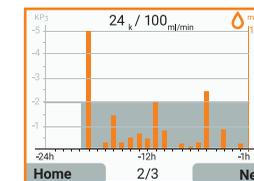
The longer the delay in the re-exploration for bleeding and/or tamponade after cardiac surgery, the higher the mortality of patients.^{1,2} Monitoring and data acquisition of drainage related parameters provide a solid objective basis when it comes to timely clinical decision making.



¹ Canádyová et al. Interact Cardiovasc Thorac Surg 2012;14:704-8.
² McGuire et al. Interact CardioVasc Thorac Surg 2015;21(4):403-7.



Thopaz* display



Thopaz* graphs

Medela's digital drainage system reduces the delay of intervention and enhances accurate decision making by

- providing objective information for re-exploration and/or chest tube removal
- improving communication between healthcare professionals
- smart notifications and alarms mitigating the risk of error^{3,4}

³McGuire AL et al. Interact Cardiovasc Thorac Surg 2015;21(4):403-7.
⁴Saha S et al. Interact CardioVasc Thorac Surg 2020;31(1):42-47

Proven clinical experience over 2 million cases

- Accurate digital drainage measurement and trends during critical post-op window¹
- Reliable trending of air leaks improves decision-making²
- Proven clinical experience
 - over 2 million total cases, including over 100'000 cardiac cases
 - More than 40 studies, including 8 studies in cardiac and 2 randomized controlled trials^{3,4}

Optimized chest drainage management for safe, early tube removal

- User-friendly interface streamlines nursing care and cardiac patient management^{2,5}
- Uninterrupted, continuous drainage with long-life battery system^{4,5}
- Reduces patient pain with faster drain removal^{2,3,6}

¹ McGuire AL et al. Interact Cardiovasc Thorac Surg 2015;21(4):403-7.
² Rathinam S et al. J Cardiothorac Surg 2011;6:59.
³ Van Linden A et al. J Thorac Dis 2019;11(12):5177-5186.
⁴ Barozzi L et al. J Card Surg 2020;35:1492-1497.
⁵ Saha S et al. Interact CardioVasc Thorac Surg 2020;31(1):42-47.
⁶ Pompili C et al. Ann Thorac Surg 2014;98(2):490-7.

SAFER CARE FOR ENHANCED RECOVERY

Medela's comprehensive solution for **mediastinal and pleural drainage**

Over 100,000 patients have already benefited from safer care after cardiac surgery

thanks to **Thopaz⁺**, which

- provides efficient mediastinal and pleural drainage right after surgery, significantly reducing drainage-related complications¹
- accelerates chest drain removal, shortens ICU length of stay, reduces overall costs^{1,2}
- is battery-powered, lightweight and silent in all areas of the hospital, eliminating the constraints of wall vacuum²

¹ Van Linden A et al. J Thorac Dis 2019;11(12):5177-5186.

² Barozzi L et al. J Card Surg 2020;35:1492-1497.

More effective blood drainage immediately after surgery with **Thopaz⁺**^{1,2}

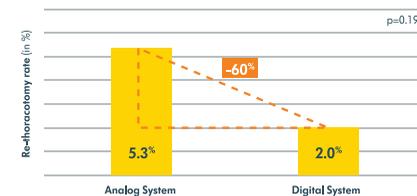
- Uninterrupted, continuous drainage
- Self-clearing double-lumen tubing
- Facilitates post-op transfer and early mobilization

¹ Barozzi L et al. J Card Surg. 2020;35:1492-1497.

² Saha S et al. Interact CardioVasc Thorac Surg 2020;31(1):42-47.



Re-thoracotomies due to tamponade or bleeding reduced by 60%¹



In a randomized controlled trial, patients treated with **Thopaz⁺** were able to have their drains removed 25% earlier with a reduction of drainage associated complications.¹

Thopaz⁺

Safer care for enhanced recovery

Get to know more about enhanced recovery programmes:
www.erasociety.org

¹ Van Linden A et al. J Thorac Dis 2019;11(12):5177-5186.

ClotStop[®] CATHETERS

A prospective observational study shows that 36 % of chest tubes occlude after cardiac surgery.¹ The unique **ClotStop[®]** coating helps minimize the risk of clots sticking to the surface and therefore the occlusion of the catheter.



From surgery to recovery, **ClotStop[®] Catheter** provides

- a safe and innovative alternative due to its hydrogel polymer coating
- safe and effective drainage without risk of clot formation
- enhanced patient comfort thanks to the optimised silicone material and coating
- time saving for healthcare professionals by reducing the need for milking and stripping

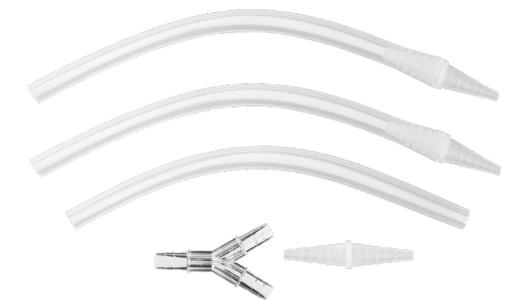
¹ Karimov et al Eur J Cardiothorac Surg 2013;44(6):1029-36.

Tubing extensions

The silastic **Tubing extensions** provide extra flexibility.

Benefitting cardiac surgeons, ICU and nursing staff

- The extensions allow the current practice to be maintained. Therefore, if needed, tubing manipulation (e.g. milking) can be performed
- Easy handling: connect three catheters to one device
- Extra length allows for more flexible pump placement



For more details on available disposables and accessories, please contact us or your local Medela representative.

Thopaz⁺
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