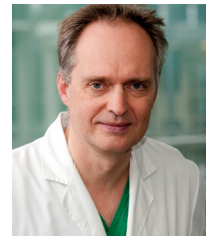




## The golden first hour is critical



**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.**

**PROF. THEODOR FISCHLEIN**  
Professor of cardiac surgery,  
University Hospital Nuremberg, Germany

## The incidence of bleeding can be up to 52.9 %<sup>1</sup>

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



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

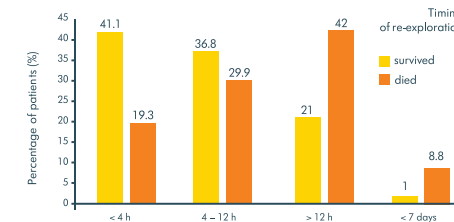
### Undrained mediastinal blood causes inflammatory processes and may contribute to post-operative atrial fibrillation (POAF).<sup>3</sup>

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.<sup>4</sup>

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

## Timing is essential

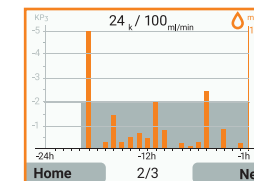
The longer the delay in the re-exploration for bleeding and/or tamponade after cardiac surgery, the higher the mortality of patients.<sup>1,2</sup> Monitoring and data acquisition of drainage related parameters provide a solid objective basis when it comes to timely clinical decision making.



<sup>1</sup> Canádyová et al. Interact Cardiovasc Thorac Surg 2012;14:704-8.  
<sup>2</sup> 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<sup>3,4</sup>

<sup>3</sup>McGuire AL et al. Interact Cardiovasc Thorac Surg 2015;21(4):403-7.  
<sup>4</sup>Saha 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 window<sup>1</sup>
- Reliable trending of air leaks improves decision-making<sup>2</sup>
- 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<sup>3,4</sup>

## Optimized chest drainage management for safe, early tube removal

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

<sup>1</sup> McGuire AL et al. Interact Cardiovasc Thorac Surg 2015;21(4):403-7.  
<sup>2</sup> Rathinam S et al. J Cardiothorac Surg 2011;6:59.  
<sup>3</sup> Van Linden A et al. J Thorac Dis 2019;11(12):5177-5186.  
<sup>4</sup> Barozzi L et al. J Card Surg 2020;35:1492-1497.  
<sup>5</sup> Saha S et al. Interact CardioVasc Thorac Surg 2020;31(1):42-47.  
<sup>6</sup> 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<sup>+</sup>**, which

- provides efficient mediastinal and pleural drainage right after surgery, significantly reducing drainage-related complications<sup>1</sup>
- accelerates chest drain removal, shortens ICU length of stay, reduces overall costs<sup>1,2</sup>
- is battery-powered, lightweight and silent in all areas of the hospital, eliminating the constraints of wall vacuum<sup>2</sup>

<sup>1</sup> Van Linden A et al. J Thorac Dis 2019;11(12):5177-5186.  
<sup>2</sup> Barozzi L et al. J Card Surg 2020;35:1492-1497.

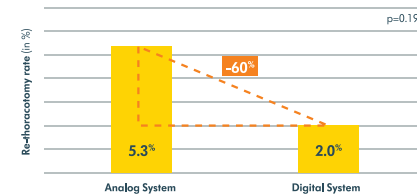
## More effective blood drainage immediately after surgery with **Thopaz<sup>+</sup>**<sup>1,2</sup>

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

<sup>1</sup> Barozzi L et al. J Card Surg. 2020;35:1492-1497.  
<sup>2</sup> Saha S et al. Interact CardioVasc Thorac Surg 2020;31(1):42-47.



## Re-thoracotomies due to tamponade or bleeding reduced by 60%<sup>1</sup>



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

### **Thopaz<sup>+</sup>**

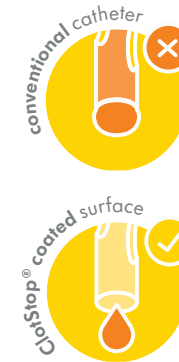
Safer care for enhanced recovery

Get to know more about enhanced recovery programmes:  
[www.erasociety.org](http://www.erasociety.org)

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

## ClotStop<sup>®</sup> CATHETERS

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



## From surgery to recovery, **ClotStop<sup>®</sup> 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

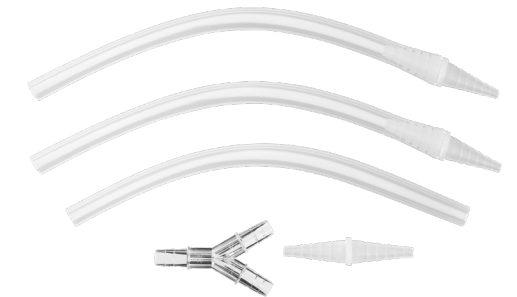
<sup>1</sup> Karimov et al Eur J Cardiothorac Surg 2013;44(6):1029-36.

## 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<sup>+</sup>**  
 Medela AG  
 Lättichstrasse 4b  
 6340 Baar, Switzerland  
[www.medela.com](http://www.medela.com) CE 0123

**ClotStop<sup>®</sup> Catheters**  
 Axiom Medical Inc.  
 19320 Van Nesse Ave.  
 Torrance, CA 90501  
[www.axiommed.com](http://www.axiommed.com) CE 0413

