

# Performance, Efficiency, and Ease of Use



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**medRAD**® Centargo  
CT Injection System

# Why Choose Between Performance and Efficiency?

As a close partner to your business, our challenge is clear: decrease administrative tasks, and increase automation and efficiency without sacrificing performance, service, or reliability.

Using the same piston-based technology as our MEDRAD® Stellant injector, MEDRAD® Centargo – is the latest addition to our CT portfolio and has been carefully designed to provide exactly this.

## Performance



- > Higher maximum achievable flow rates across catheter sizes<sup>1</sup>
- > More consistent flow rates vs. peristaltic pumps<sup>1</sup>

## Efficiency



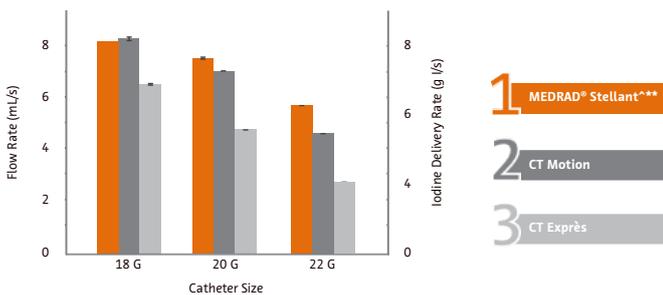
- > Daily set-up in less than two minutes
- > Ready for next patient in under 20 seconds

## Piston-Based Performance

The type of CT injector used can impact important fluid delivery parameters. When comparing Stellant (a piston-based CT injector system configured with the Multi-Patient Kit) to a peristaltic pump-based model, Stellant demonstrated higher maximum achievable flow rates and more consistent steady-state flow.<sup>1</sup>

### Maximum Flow Rate

Stellant demonstrates higher maximum achievable flow rates with a variety of catheter sizes

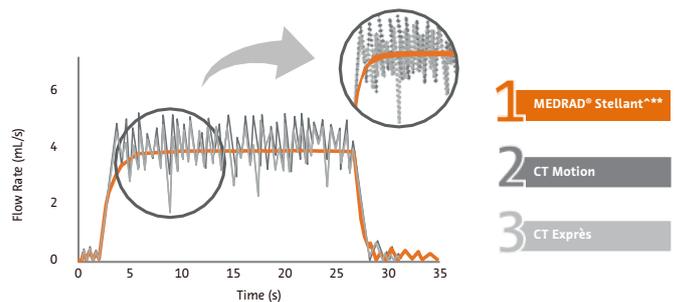


Adapted from Figure 3 (Chaya et al., 2019). Maximum achievable flow rates (iopromide 370, 18G, 20 G and 22G catheters).

\*\*MEDRAD® Stellant significantly higher (\*\*p<0.001) than CT Exprès with all catheter sizes and CT Motion trials with catheter sizes 20 G and 22 G.

### Flow Rate Variance

Stellant delivers a more consistent flow profile compared to pulsatile fluid delivery in peristaltic pump systems



Adapted from Figure 4 (Chaya et al., 2019). Flow rate variance (iopromide 370 and 20 G catheter at 4 mL/s).

\*\*\*p < .001

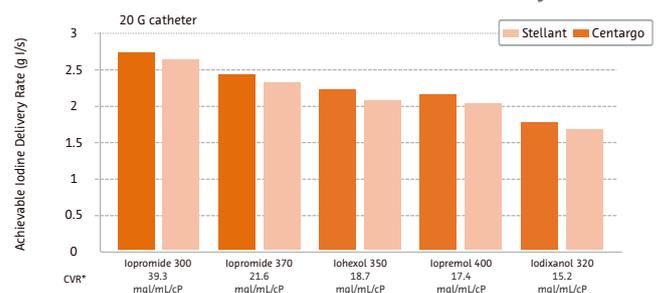
The maximum achievable flow rate dictates which protocols are compatible with a system, as some demanding protocols may require high (greater than 5ml per second) flow rates.<sup>2</sup>

## Verified Delivery Rates

So, we wanted to design our newest injector, Centargo, to also deliver the same high level of performance as Stellant, as well as to streamline workflows.

The InnoVatE study helped us validate that Centargo provides high iodine delivery rates (IDRs) you've come to know and trust.<sup>3</sup>

### Maximum Achievable IDR With MEDRAD® Injectors



Adapted from Figure 2, Graph B (McDermott et al., 2020). Maximum achievable IDR with MEDRAD injectors through a 20 G catheter. Contrast media at room temperature.

\*Ordered from left to right by measured concentration/viscosity ratio

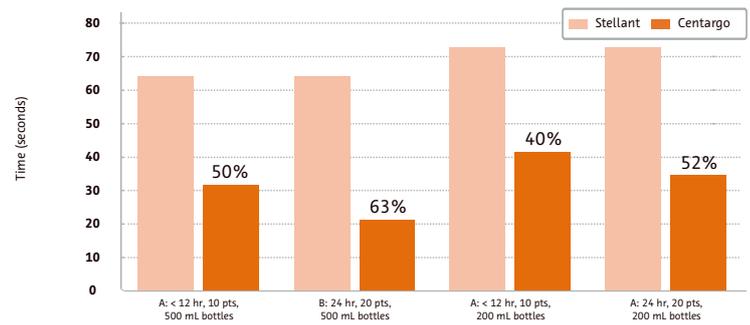
## Streamlined Workflows

The Bayer PerCent Study<sup>4</sup> was able to illustrate how Centargo also allows technologists to maximise their time with patients, through reduced injector touch time and ease of patient changeover.

When compared to Stellant, Centargo demonstrated significantly faster patient turnover times – with time savings of 40%-63% – when using 200mL or 500 mL contrast media bottles.

These time efficiency benefits have previously only been associated with peristaltic-pump-based systems. The PerCent Study concluded that Centargo can streamline workflow while the InnoVatE study validates that Centargo does not give up on fluid delivery performance.

Average Touch Time Per Patient



Adapted from Figure 7 (Kemper et al., 2022). Projected time savings depending on patient throughput, operating hours, and bottle size availability.

**“There is definitely a big improvement... Now, with Centargo, the changeover time and the time loss between patients has been reduced dramatically.”**

**Baljit Jagpal,**  
Lead Technologist &  
Research Manager,  
Ninewells Hospital,  
Dundee, Scotland



References:

1. Chaya A, Jost G, Endrikat J. Piston-Based vs Peristaltic Pump-Based CT Injector Systems. *Radiol Technol.* 2019;90(4):344-352.
2. American College of Radiology. ACR Manual on Contrast Media. Version 10.3. [https://www.acr.org/~media/ACR/Documents/PDF/QualitySafety/Resources/Contrast-Manual/Contrast\\_Media.pdf](https://www.acr.org/~media/ACR/Documents/PDF/QualitySafety/Resources/Contrast-Manual/Contrast_Media.pdf). Published 2018. Accessed April 2022.
3. McDermott M, Kemper C, Barone W, Jost G, Endrikat J. Impact of CT Injector Technology and Contrast Media Viscosity on Vascular Enhancement: Evaluation in a Circulation Phantom. *Br J Radiol.* 2020;93(1109):20190868. doi:10.1259/bjr.20190868
4. Kemper CA, Muhl C, Martens B, McDermott MC, Hendriks BMF. Performance of Centargo: A Novel Piston-Based Injection System for High Throughput in CE CT. *Med Devices (Auckl).* 2022;15:79-87.

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