stryker

High-quality CPR in the cath lab

allowing for continued PCI

LUCAS® 3, v3.1
chest compression system

Resuscitation guidelines

International guidelines recognise the value of mechanical chest compression devices in the cardiac catheterisation lab, with both the European Resuscitation Council (ERC) and American Heart Association (AHA) noting their potential use in the angiography suite.

ERC

"On an angiography table with the image intensifier above the patient, delivering chest compressions with adequate depth and rate is almost impossible and exposes the rescuers to dangerous radiation. Therefore, **early transition to the use of a mechanical chest compression device is strongly recommended**."[4]

AHA

"The use of the mechanical chest compression devices may be considered in specific settings **where the delivery of high-quality manual compressions may be challenging or dangerous for the provider** (eg, prolonged CPR during hypothermic cardiac arrest, CPR in a moving ambulance, CPR in the angiography suite, CPR during preparation for ECPR)."[3]

Among patients suffering cardiac arrest treated with LUCAS in the cath lab, 25% had a good neurological outcome at hospital discharge compared to 10% treated with manual chest compressions.[5]

15,147

In a successful 2 hour 45 minute resuscitation, LUCAS administered 15,147* guidelines-consistent compressions[6]

+60%

Increased blood flow to the brain vs. manual CPR[7]

99%

of survivors had good neurological outcomes in large randomised control trial — LINC[8]

*Calculated based on 102 compressions per minute x 165 min x .9
(Compression fraction based on Olasveengen TM, Wik L, Steen PA. Quality of cardiopulmonary resuscitation before and during transport in out-of-hospital cardiac arrest. *Resuscitation*. 2008; 76(2):185-90.)

Why choose LUCAS

High quality CPR in the cath lab

Allows for simultaneous catheterisation, angiography and PCI

Reduced radiation exposure for CPR provider

"The device [LUCAS] enabled us to do the PCI with high-quality CPR. It's hard to maneuver radiation equipment around a human being doing chest compressions. With the LUCAS device, it's easier to do the intervention without obstacles and interruptions.[1]

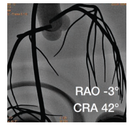
— Jonathan Paul, MD,
Interventional Cardiologist
at University of Chicago Medicine, U.S.

"We can save patients that we would have thought were impossible to save before LUCAS.[2]

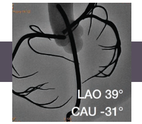
— Dr. Göran Olivecrona, MD, PhD
Associate Director, Coronary Intervention Unit
at Skåne University Hospital - Lund, Sweden

The difference is in the angles

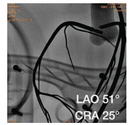
Cranial

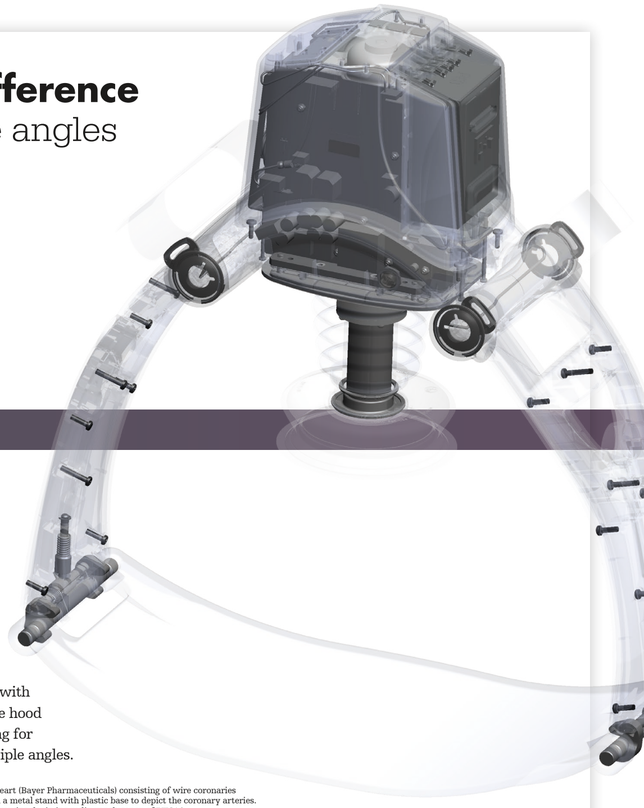


Caudal



Lateral





LUCAS is mostly radiotransluscent, with the exception of the hood and piston, allowing for projections at multiple angles.

* Images above show a Wire Heart (Bayer Pharmaceuticals) consisting of wire coronaries attached to a plastic aorta on a metal stand with plastic base to depict the coronary arteries.
** Image above is a simulated drawing depicting radiotransluscency of LUCAS

The carbon fibre LUCAS PCI back plate (optional) is intended specifically for use in the cath lab. Preemptively placing the LUCAS PCI Back Plate (without upper part attached) allows for full visualisation of arterial tree from all angles and for a rapid deployment of LUCAS if needed.

References

1 White Paper – University of Chicago Medicine LUCAS Cath Lab, GDR 3330316_B
2 "Cath Lab Staff Saves Lives in 'Impossible' Cases With LUCAS 2 Chest Compression System." *Diagnostic and Interventional Cardiology*, 14 Dec. 2011, www.dicardiology.com/content/cath-lab-staff-saves-lives-impossible-cases-lucas-2-chest-compression-system.
3 2015 American Heart Association Guidelines for CPR and ECC. *Circulation*. 2015;132(suppl 2):S319
4 ERC European Resuscitation Council Guidelines for Resuscitation 2015. *Resuscitation*. 95 (2015):S170
5 Wagner H, Hardig BM, Rundgren M, et al. Mechanical chest compressions in the coronary catheterisation laboratory to facilitate coronary intervention and survival in patients requiring prolonged resuscitation efforts. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*. 2016;24:4)
6 Case study Regions Hospital St. Paul, GDR 3318844_A.
7 Carmona Jimenez F, Padro P, Garcia A, et al., Cerebral flow improvement during CPR with LUCAS, measured by Doppler. *Resuscitation*. 2011; 82S1:30,AP090. [This study is also published in a longer version, in Spanish language with English abstract, in Emergencias. 2012;24:47-49]
8 Rubertsson S, Lindgren E, Smekal, D et al. Mechanical chest compressions and simultaneous defibrillation vs conventional cardiopulmonary resuscitation in out-of-hospital cardiac arrest. The LINC randomised trial. *JAMA*. 2013;311(1):53-61.

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Emergency Care

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