

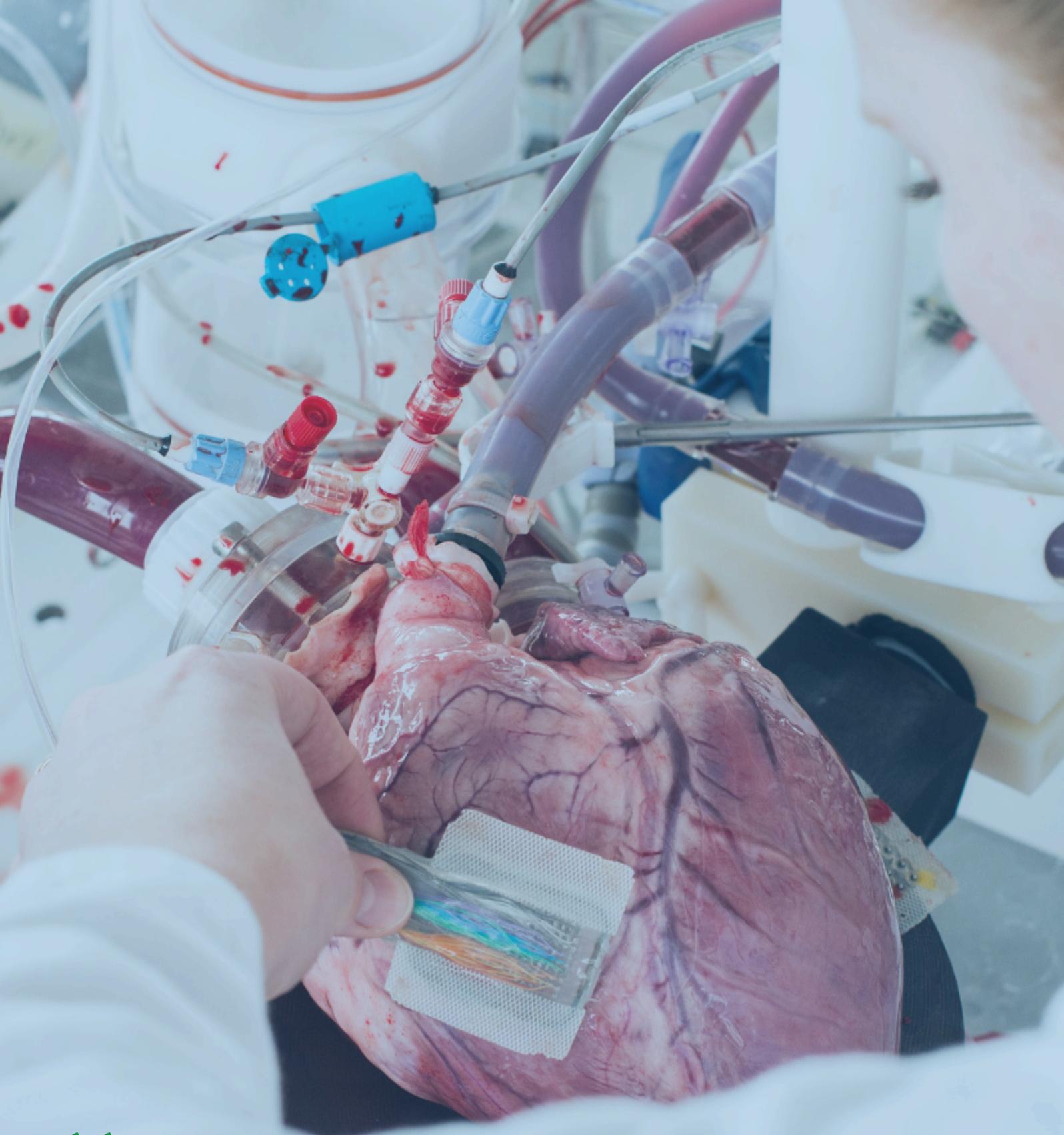


LifeTec Group™

A RESOLUTION MEDICAL COMPANY



**PHYSIOHEART™**



**“This was the most interesting day of work of the entire past year. We have learned so many new things!”**

# PhysioHeart™

An ex-vivo beating heart model for assessment of cardiac devices and therapies

The PhysioHeart™ is an ex-vivo isolated autonomous beating heart model. The model works with a living heart which displays cardiac muscle contraction, hemodynamic performance, realistic heart valve movement and electrophysiological activity. The PhysioHeart™ is suitable for functionality and feasibility assessment of surgical and interventional devices and procedures on living heart tissue.



## FEATURES



### **Tunable cardiac performance**

Cardiac performance can be tuned to simulate different clinical scenarios, e.g. heart failure.

### **Hemodynamic monitoring**

Multiple pressure and flow sensors allow for hemodynamic monitoring before, during and after an intervention.

### **Real-time intervention assessment**

The effect of the intervention can be observed instantaneously in the change in cardiac performance of the heart.



### **Clinical imaging compatible**

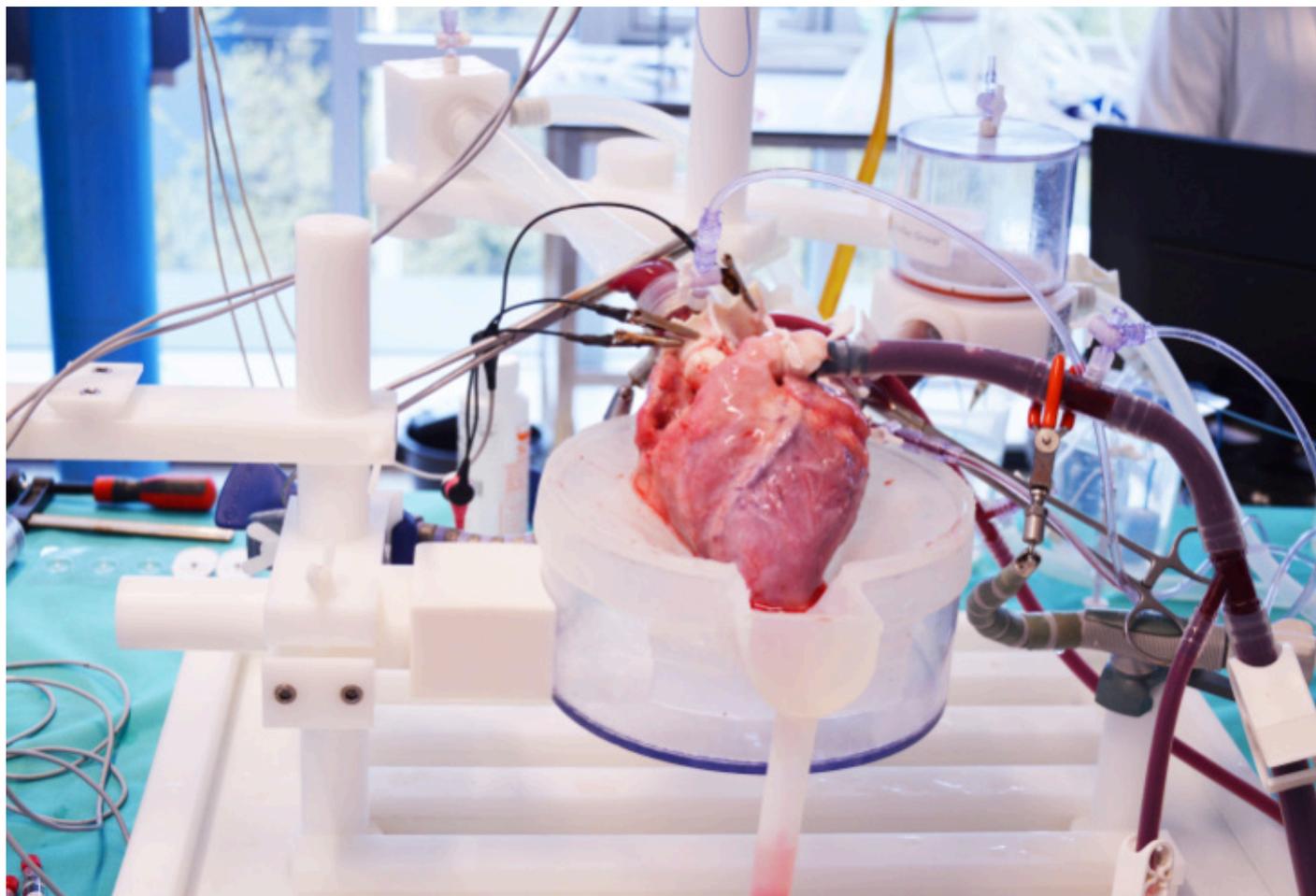
The system is compatible with standard clinical imaging modalities, such as ultrasound, MRI, and X-ray imaging.

### **Recording capabilities**

Your data can be recorded simultaneously, allowing for complete procedural review.

### **Endoscopic visualization**

Clear circulation fluid allows endoscopic visualization of your intra-cardiac intervention.



### **Left and 4-chamber heart models**

PhysioHeart™ offers both left-sided and 4-chamber circulation models based on living tissue.

### **Transseptal access**

PhysioHeart™ facilitates realistic simulation of transseptal access procedures. You can assess the safety and efficacy of transseptal devices and techniques in a controlled environment.



### **Living heart tissue**

The use of living heart tissue adds value to your studies. It is particularly suitable to study myocardial contraction, electrophysiological properties or coronary and myocardial perfusion.

### **Modular and customizable setup**

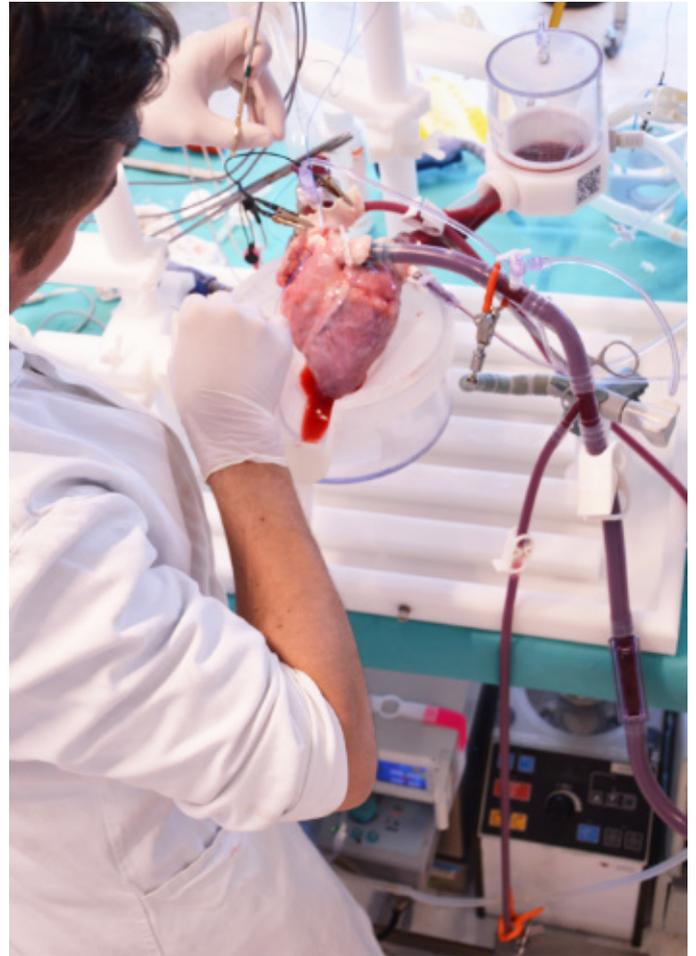
PhysioHeart™ can be customized to fit specific needs, e.g. to create pathological situations or specific access routes.

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## RESEARCH, DEVELOPMENT, TRAINING AND DEMONSTRATIONS

With PhysioHeart™, you can have **very accurate measurement capabilities** during the **pre-clinical development phase**. For example, it is possible to measure the performance of pacemakers and leads, while evaluating the feasibility and success of the lead placement and **instantaneously assess the effectiveness visually, hemodynamically, and electrophysiologically**.

The PhysioHeart™ can also be used as a simulator for **training and demonstration purposes**, e.g. to educate your end-user in a **realistic training environment**.



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## WHAT'S IN IT FOR YOU?



### Preclinical research

Our approach to preclinical research provides in-vivo like assessments without the ethical burden of using live animals in an early stage. This helps to reduce the number of early acute studies and ensures you're better prepared for animal studies later on.



### Steep learning curve

With more freedom in cardiac access, experimental protocol and measurement options, plus the robust low-risk nature of BioSimulator environments, you will learn more in a shorter timeframe.



### Time and cost efficient

BioSimulation will greatly speed up your development pathway, and de-risk your subsequent animal and clinical phases - which will save you time and cost.

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## SERVICES



### Contract services

We offer different types of contract activities, from supporting you during your pre-clinical development phase, up to support during exhibitions or workshops to showcase your newly developed tool or device.



### BioSimulation Technologies

Except for PhysioHeart™, we may offer BioSimulation equipment through rental or purchase. These come with extensive training by our knowledgeable operators with additional technical support if needed.



### Nice people to work with

You can rely on our experienced team to provide the BioSimulation environment, so you can focus on your device technology.



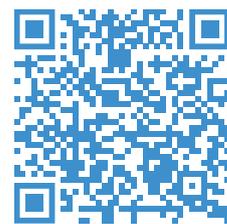


## Interested in more information? **Contact us!**

We're more than happy to answer any questions  
you may have.

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Call at +31 40 2989393 or send an e-mail to  
[info@lifetecgroup.com](mailto:info@lifetecgroup.com)



Do you want to  
know more about our  
PhysioHeart™ Platform?