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JUIN 2019



STARTUP

HEARTROID® PROJECT

 Osaka University
Graduate School of Medicine

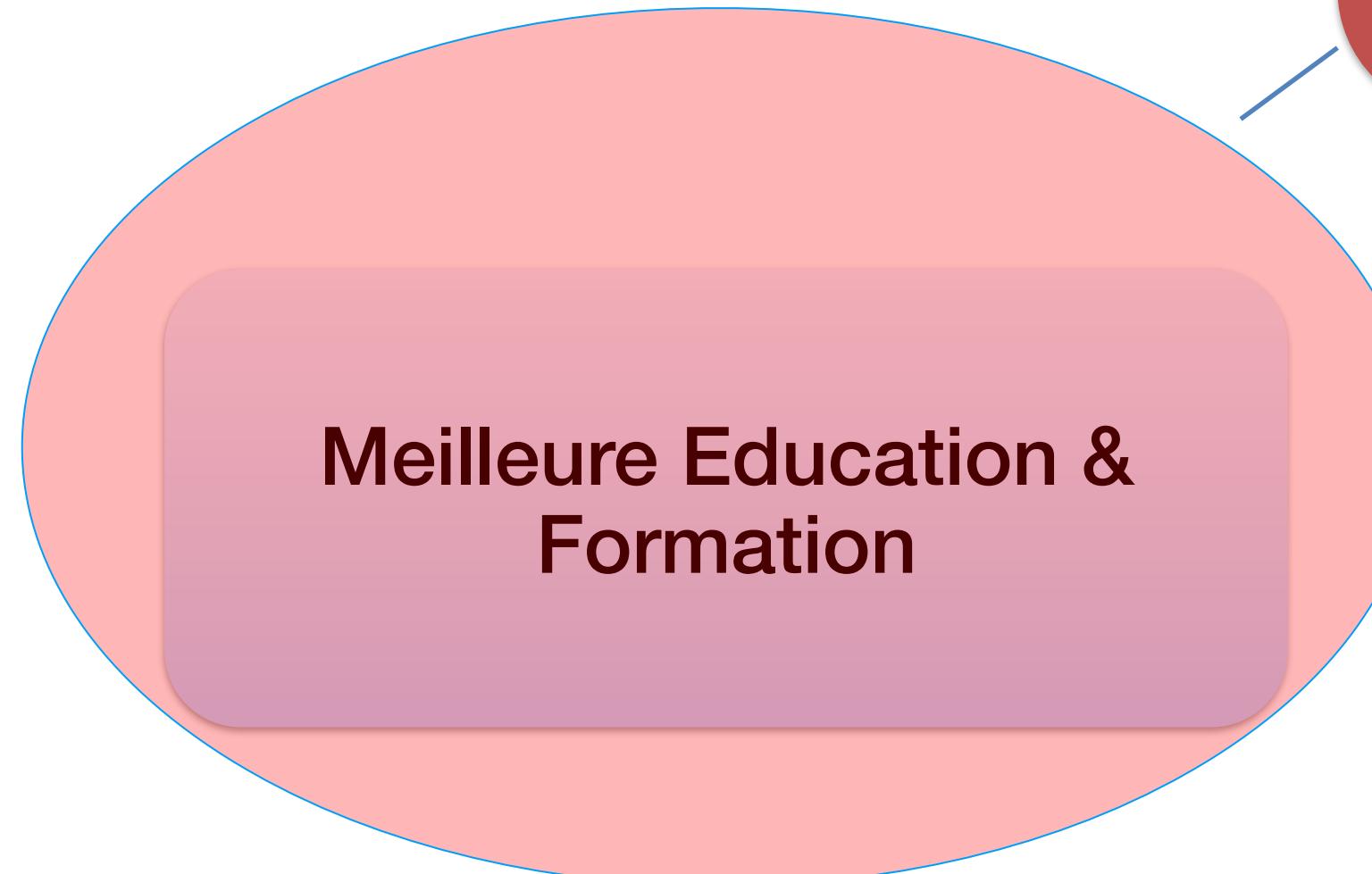
JMC Corporation

FYC FUYO CORPORATION

**Simulateurs en cardiologie
interventionnelle sur cœur artificiel**

J Adjeij CHUV Lausanne

Introduction

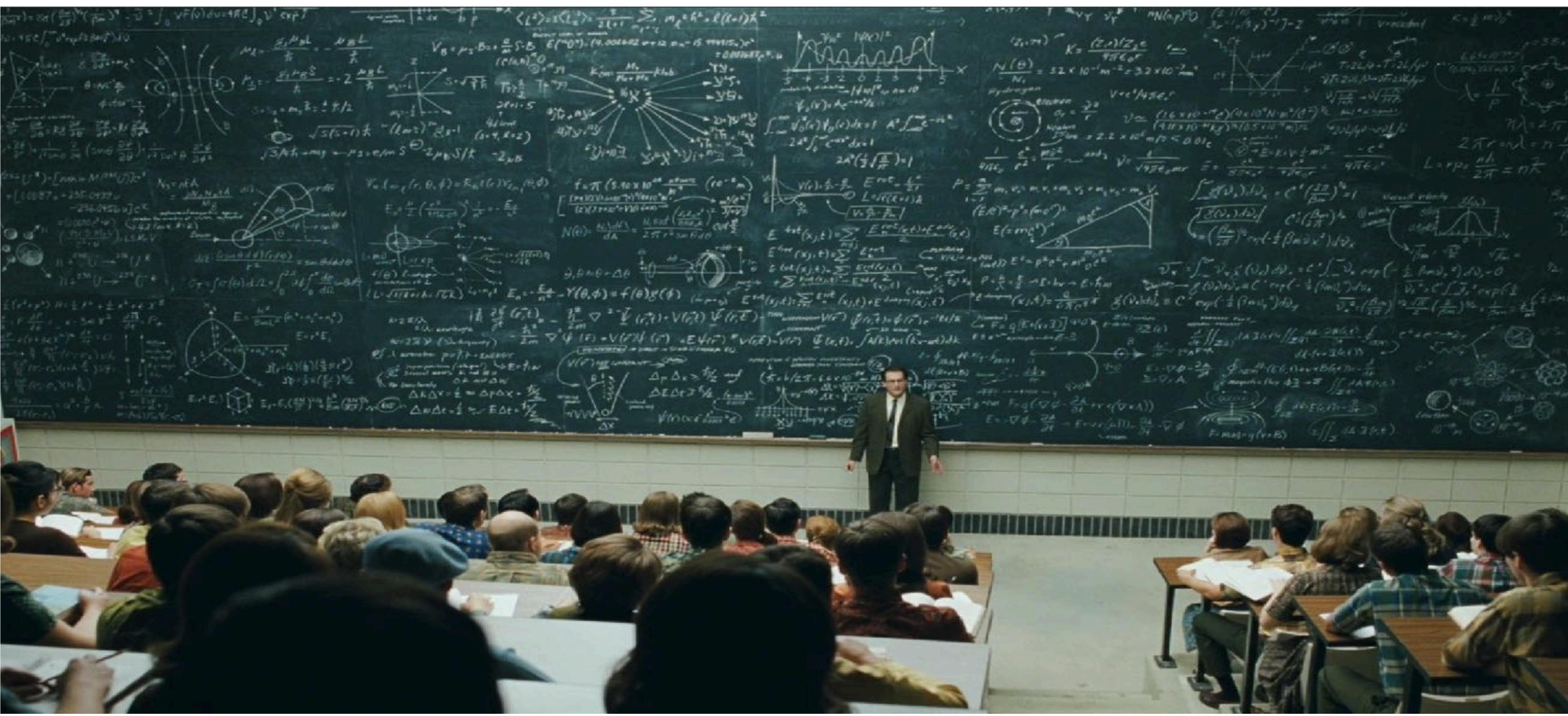


Mieux
Comprendre

Qualité des soins



Mieux s'organiser &
travailler

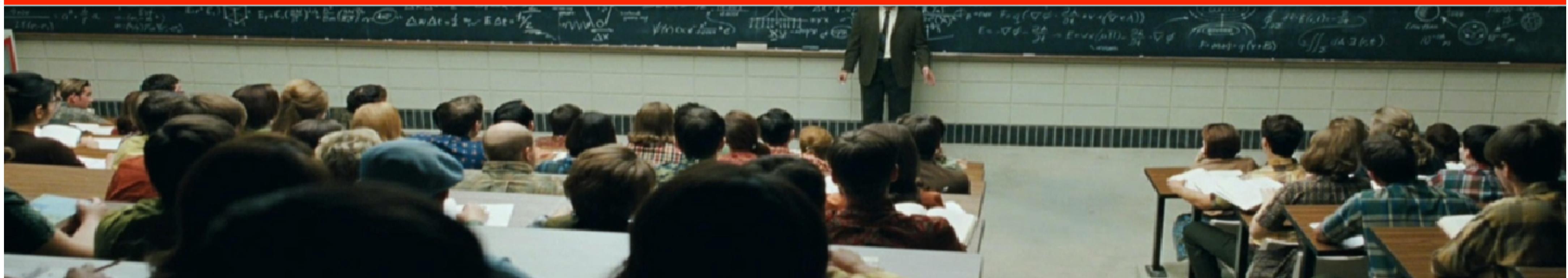


$$\begin{aligned} \text{Equation 1: } & \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = f(x, y) \quad \text{in } D \\ \text{Equation 2: } & u|_{\partial D} = g(x, y) \quad \text{on } \partial D \\ \text{Boundary Condition: } & u(x, y) = h(x, y) \quad \text{at } y=0 \end{aligned}$$

Apprentissage par l'erreur

Apprentissage par mise en situation

Apprentissage par résolution de problèmes



LE CÔNE D'APPRENTISSAGE D'EDGARD DALE

Ce dont les gens se souviennent

10% de ce qu'on lit

20% de ce qu'on entend

30% de ce qu'on voit

50% de ce qu'on voit et entend

70% de ce qu'on dit

90% de ce qu'on fait

Les gens sont capables de...

Lire

Entendre

Voir des images

Regarder une Videos

Visiter une exposition

Regarder une démonstration

Participer à une discussion

Concevoir une conférence

Simuler ou présenter une expérience

Expérimenter

Définir, décrire, expliquer

Présenter, appliquer, mettre en pratique

Analyser, définir, créer, évaluer

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- Fondée en 1992



- Associée à un cardiologue interventionnelle de Osaka

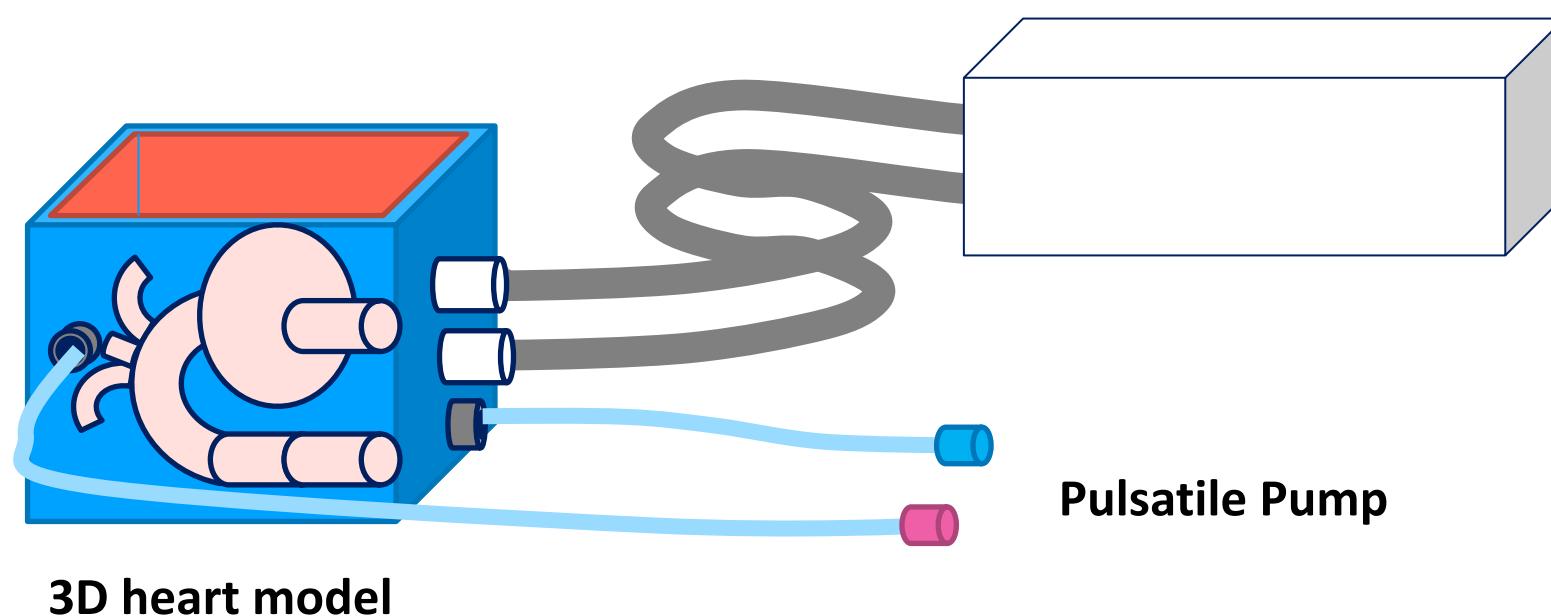
Dr Keita Okayama



- Production de cœur artificiel en 3D printing plastique souple relié à une pompe pulsatile

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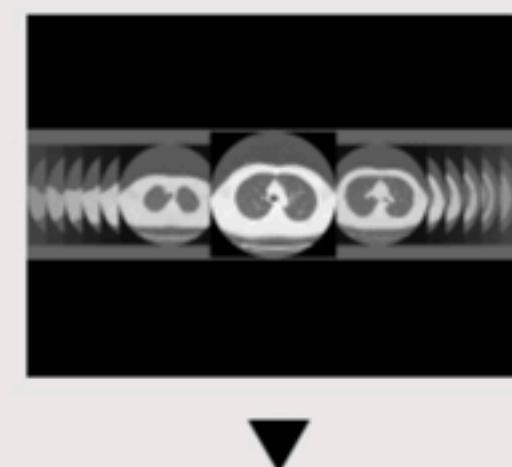
- Système immergé dans l'eau



How to make heart model

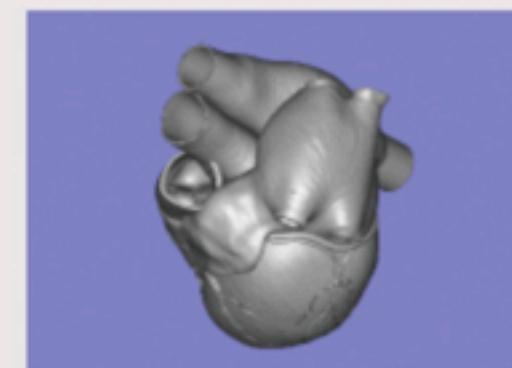
- ① Please prepare DICOM data

Please send us DICOM data imaged by CT/X-ray/MRI/ultrasonic etc.



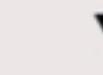
- ② Convert into 3D data

We will convert and compile your DICOM data into 3D data. Please tell us about your area of interest.



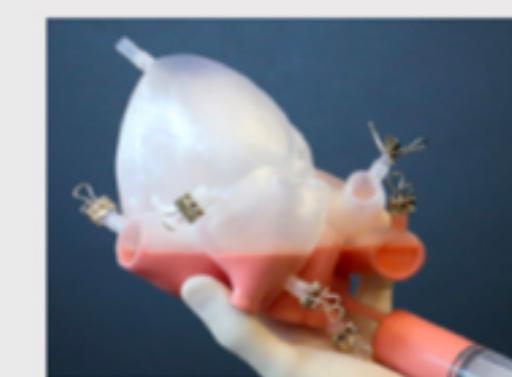
- ③ Output by 3D printer

We will put out heart model mold data by 3D printer. Time required is depends on model size and way of molding.



- ④ We will create soft resin material from 3D printer made mold.

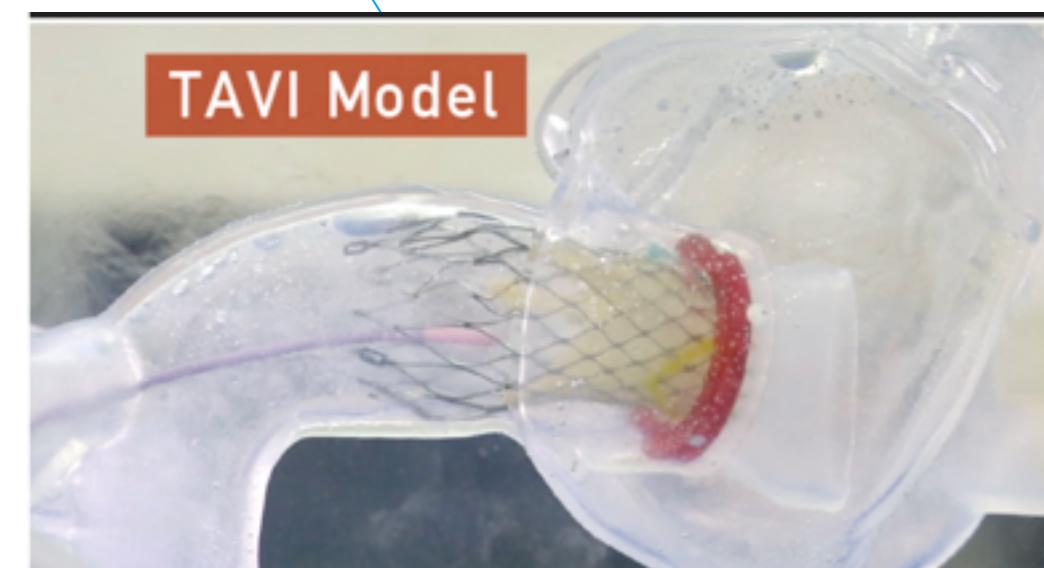
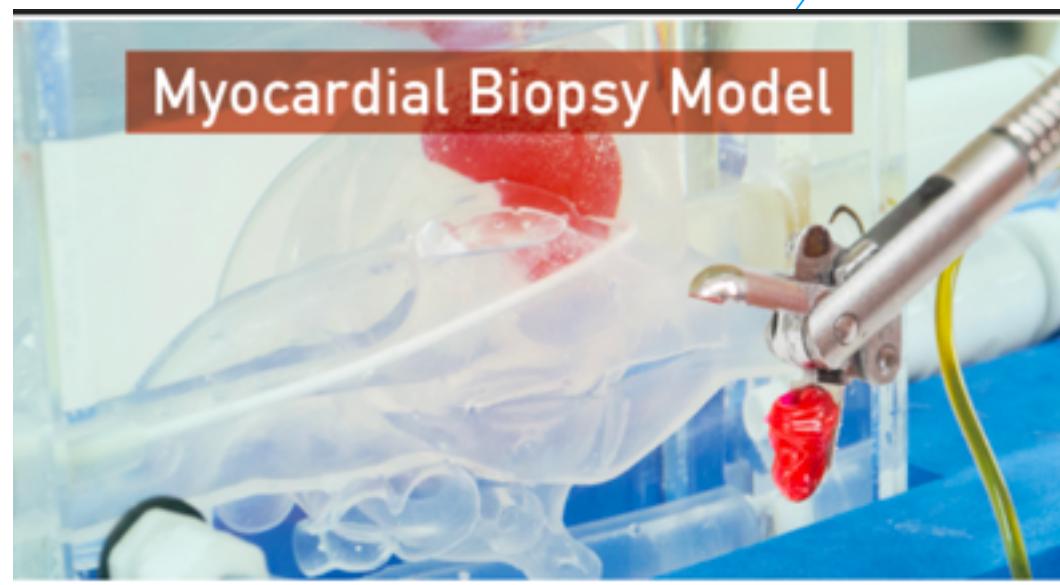
We will cast soft resin material into 3D printer made mold.



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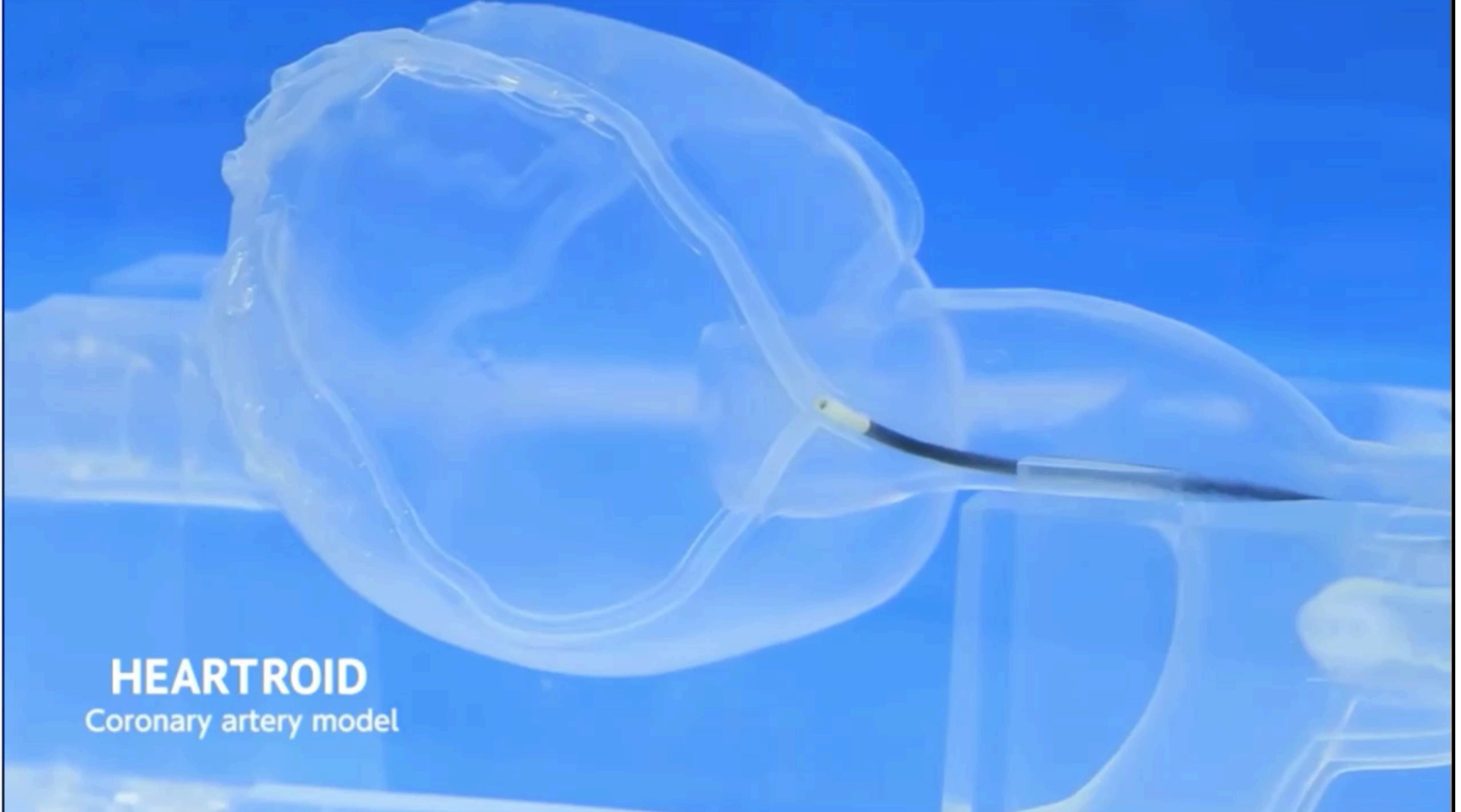
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APPA
Ensemble, imaginons la cardiologie de demain



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Startup Heartroid coronary model



HEARTROID
Coronary artery model

A large, semi-transparent watermark of a coronary artery model is overlaid on the background image. The watermark shows a clear plastic tube with a coiled wire inside, representing a coronary artery. The tube has several distinct kinks and bends, mimicking the complex anatomy of real coronary vessels. The background of the slide is a solid blue color.

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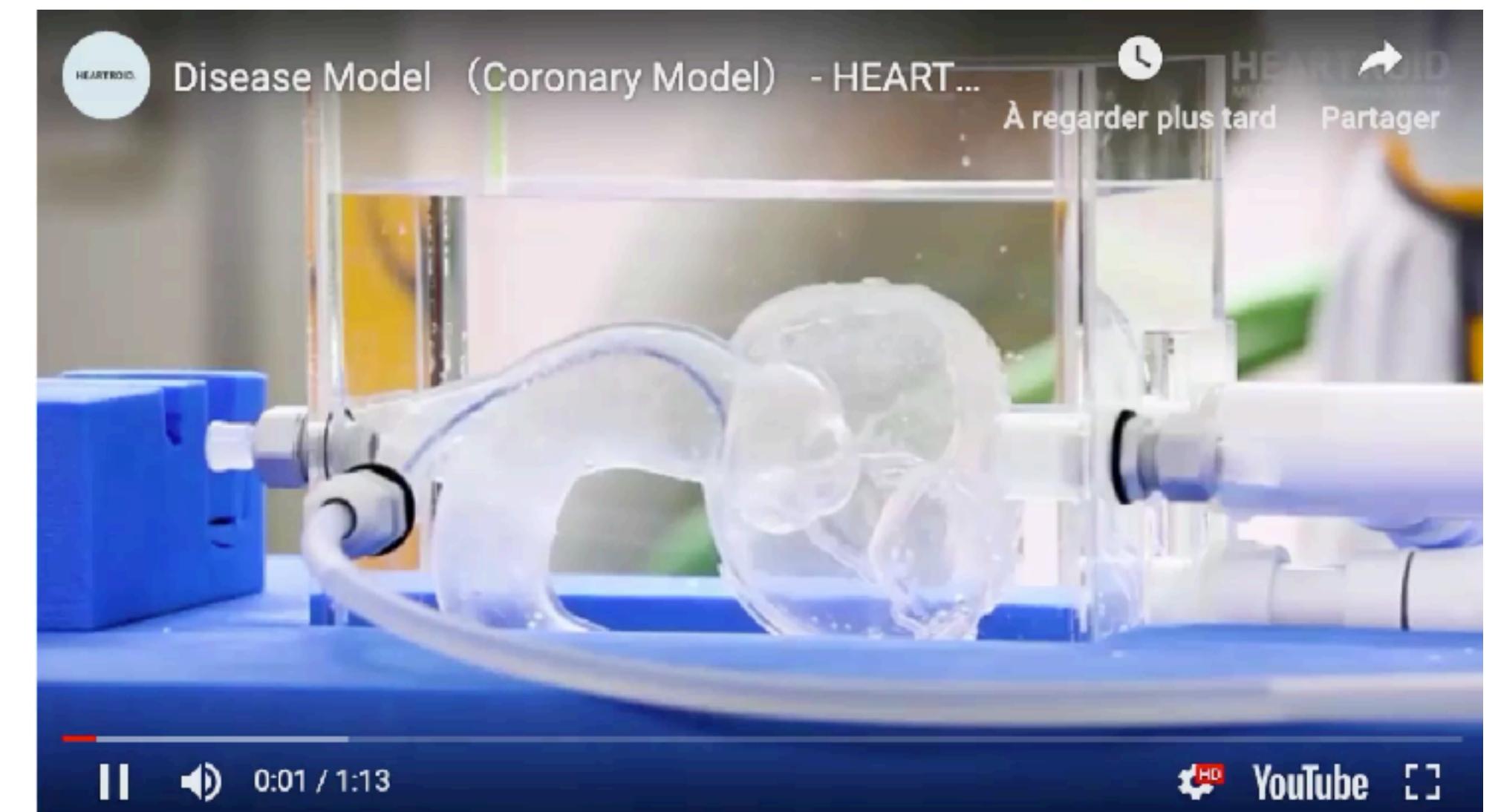
Startup Heartroid coronary model

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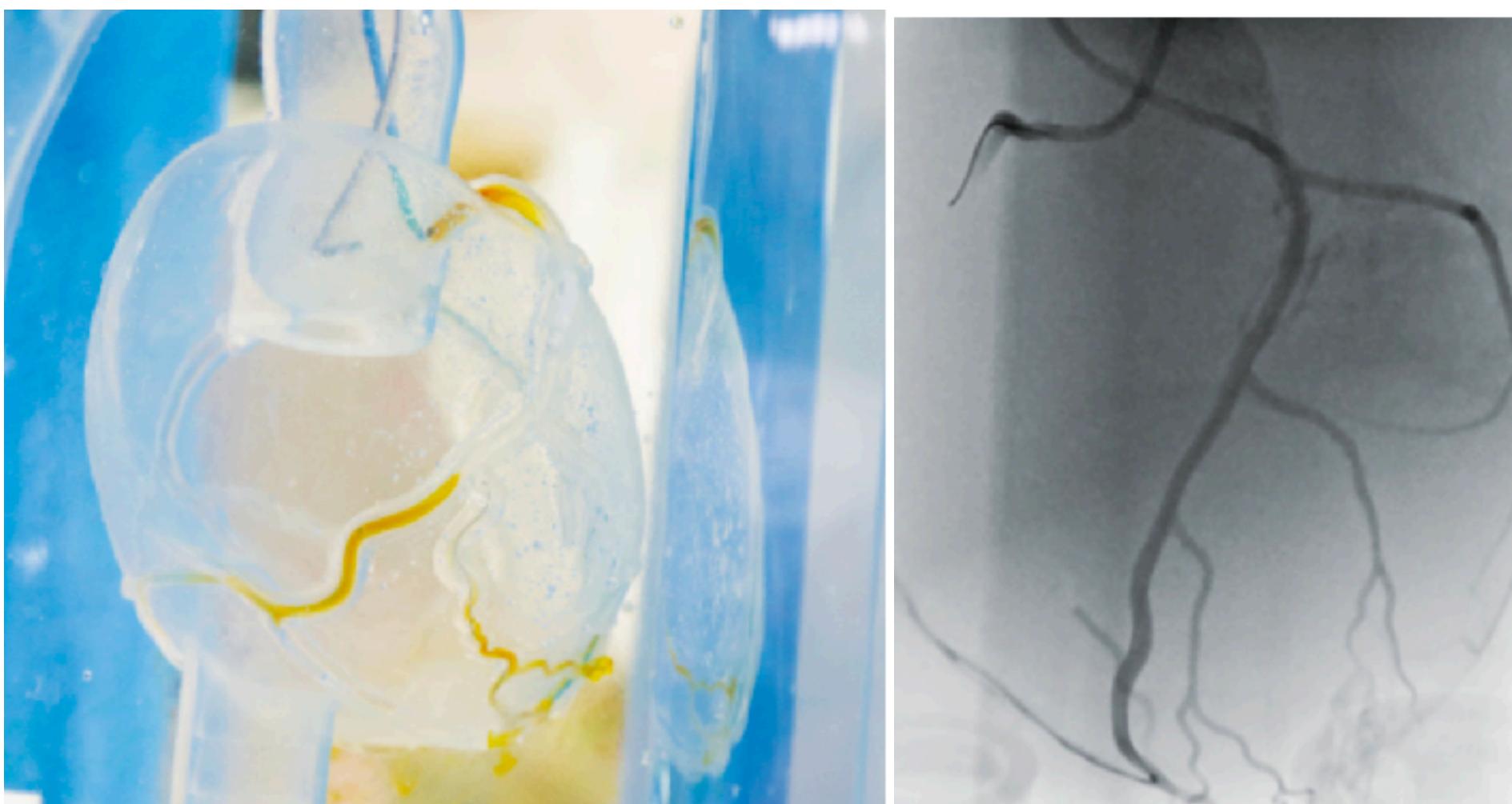
Angioplastie



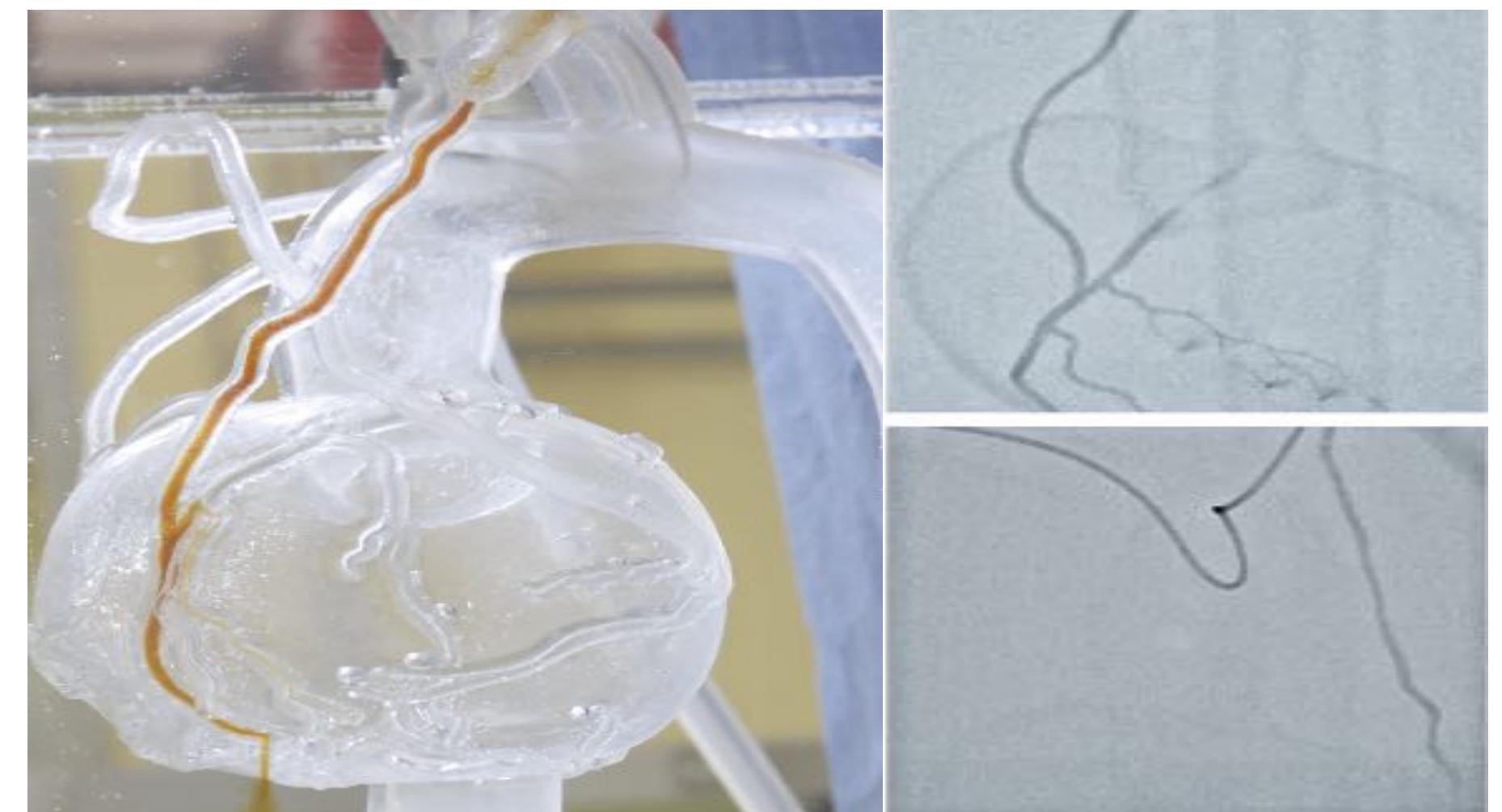
Rotablator



CTO



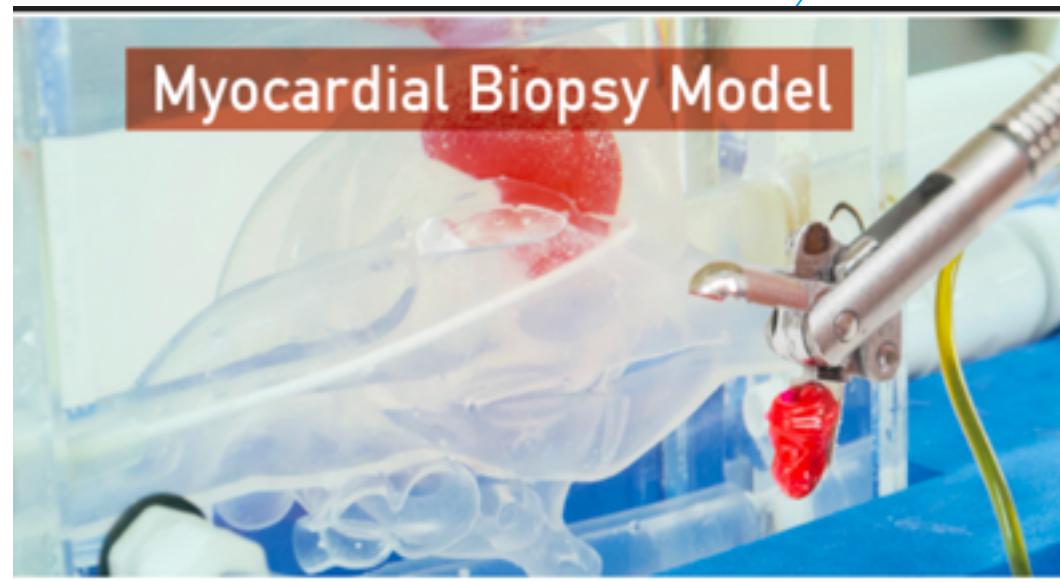
Pontage



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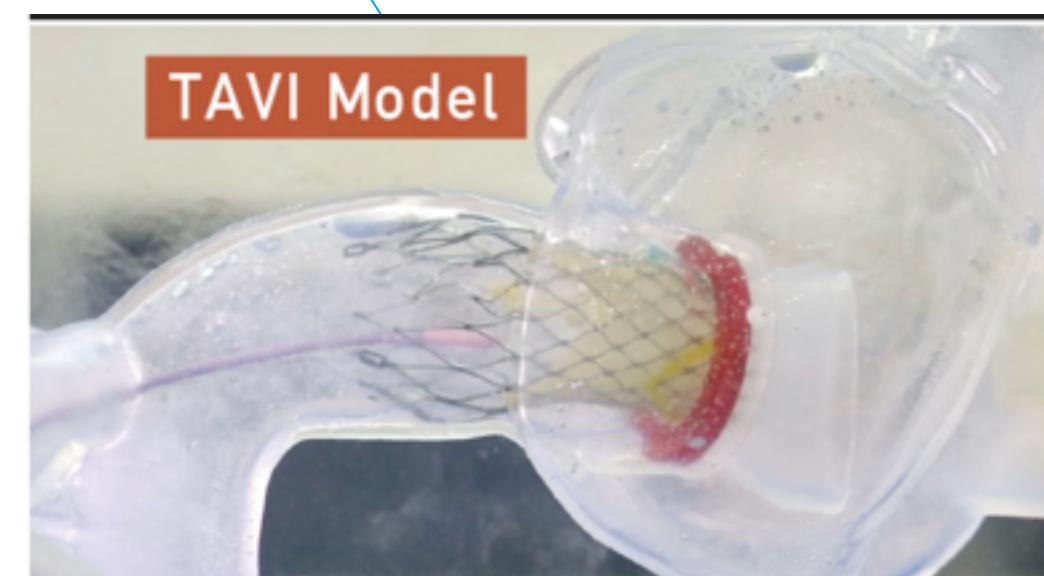
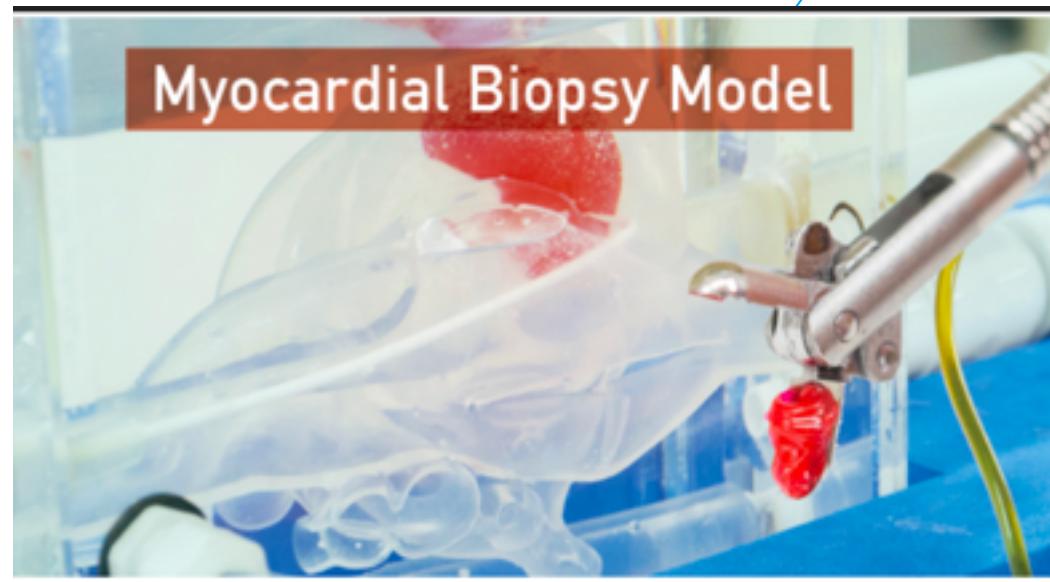
HEARTROID

EVT&RDN

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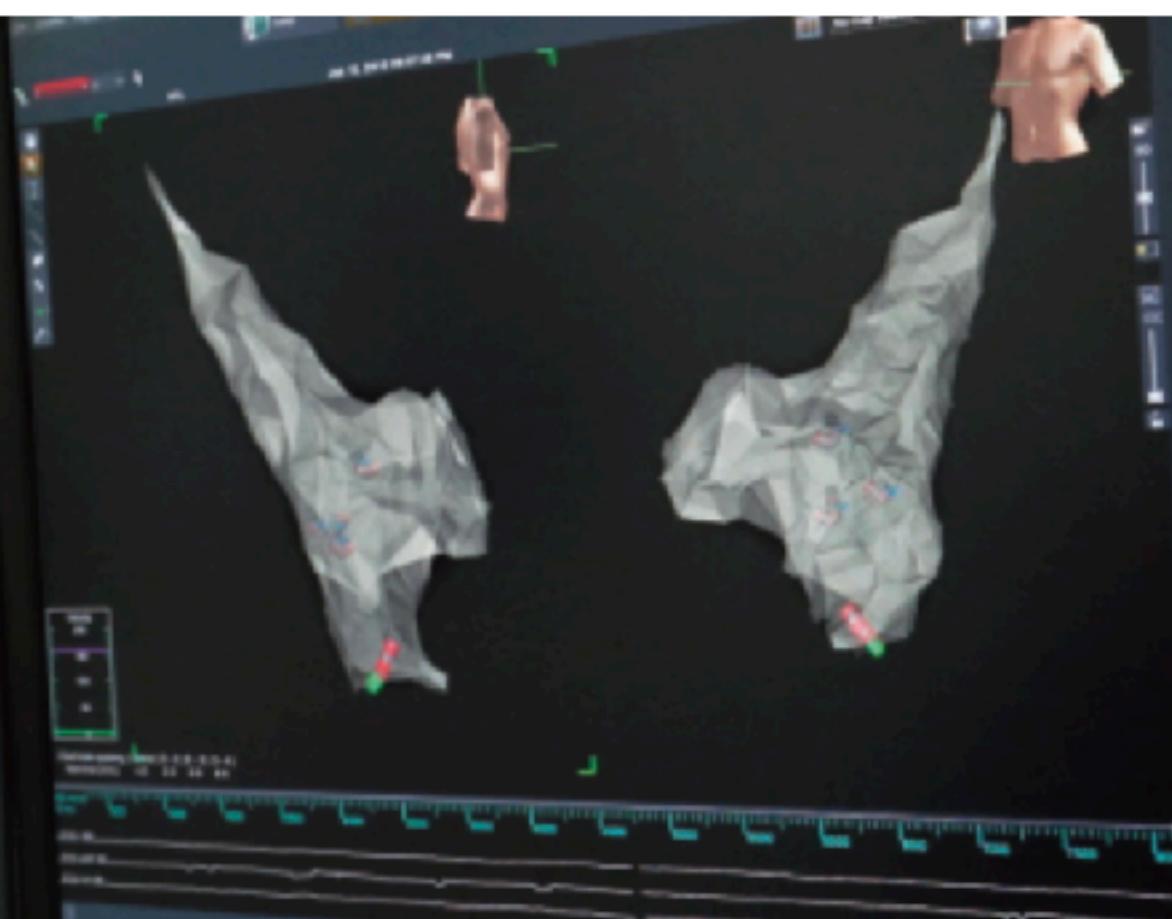
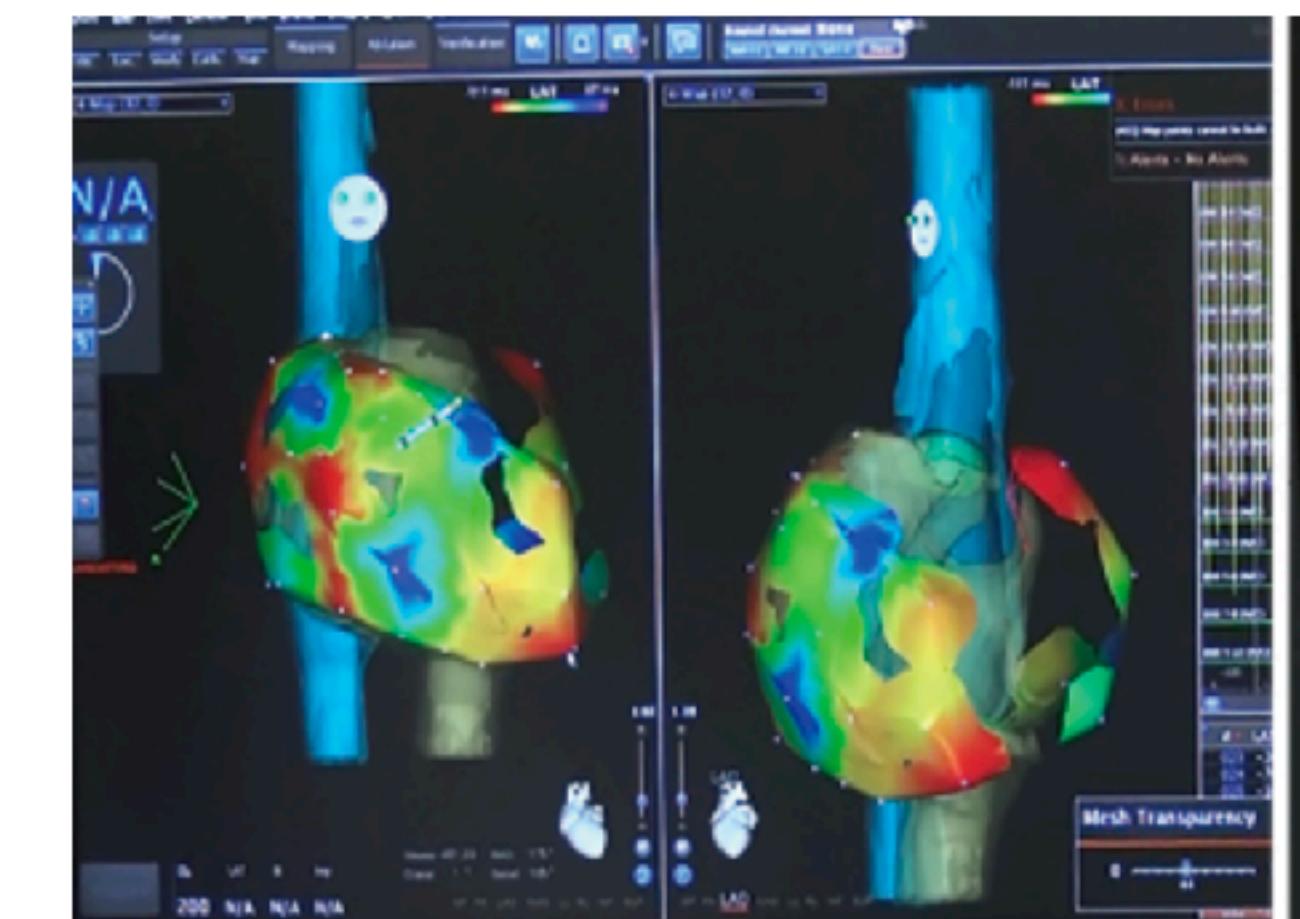
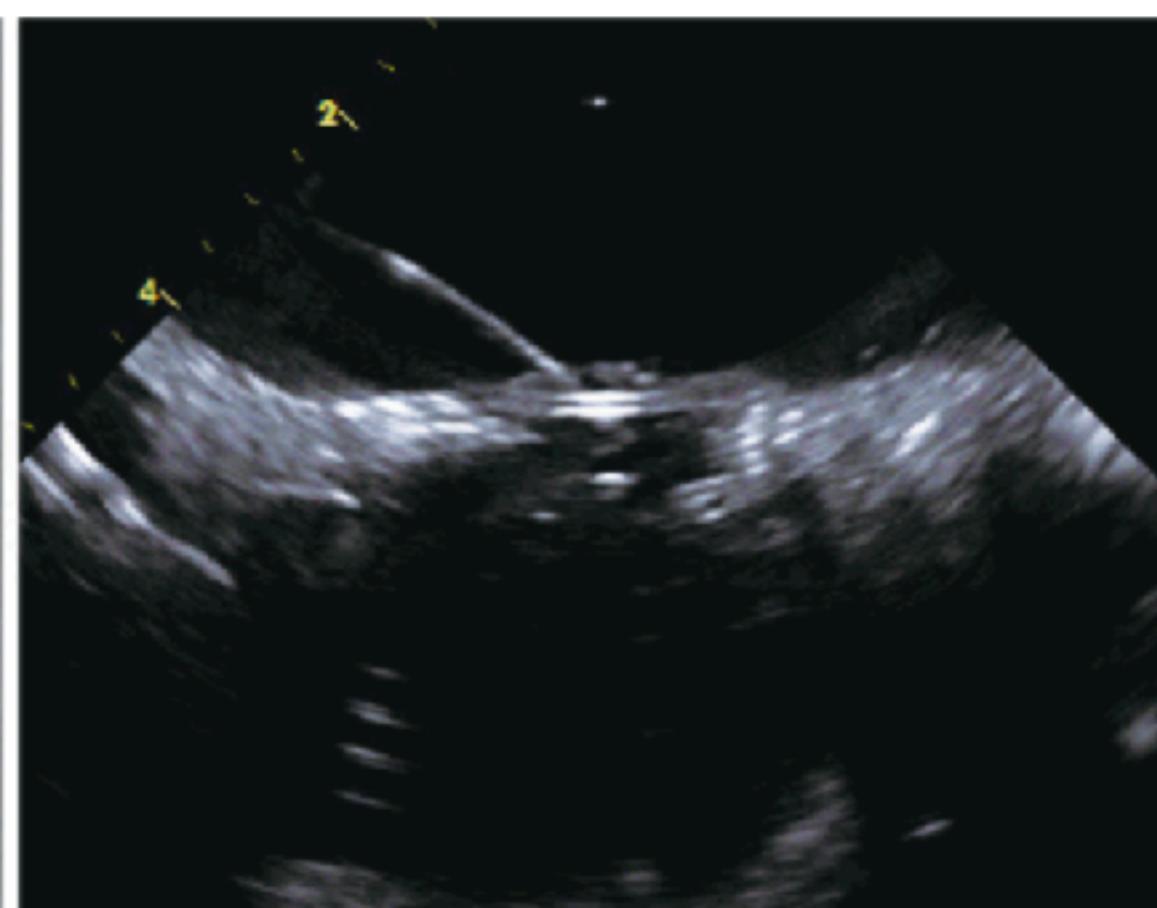
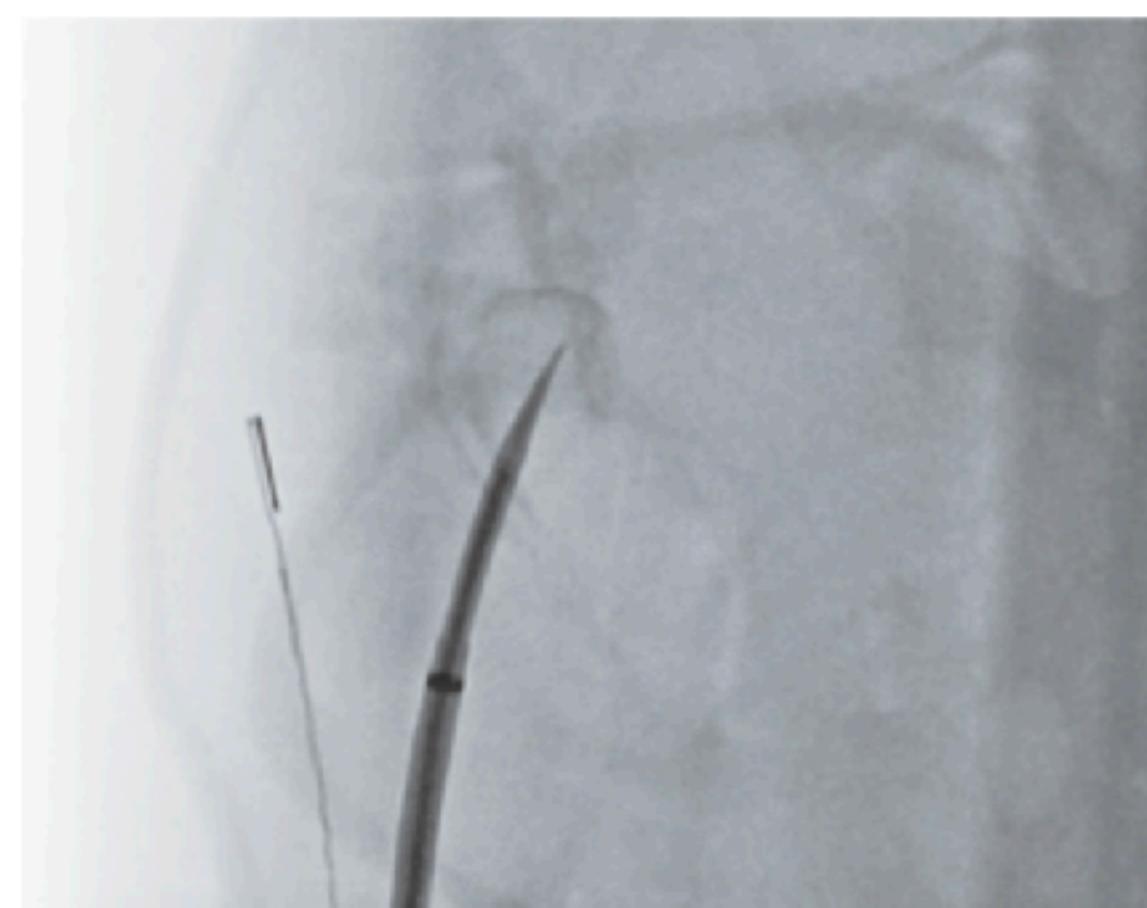
Startup Hearttroid model ablation

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Atrial septal puncture



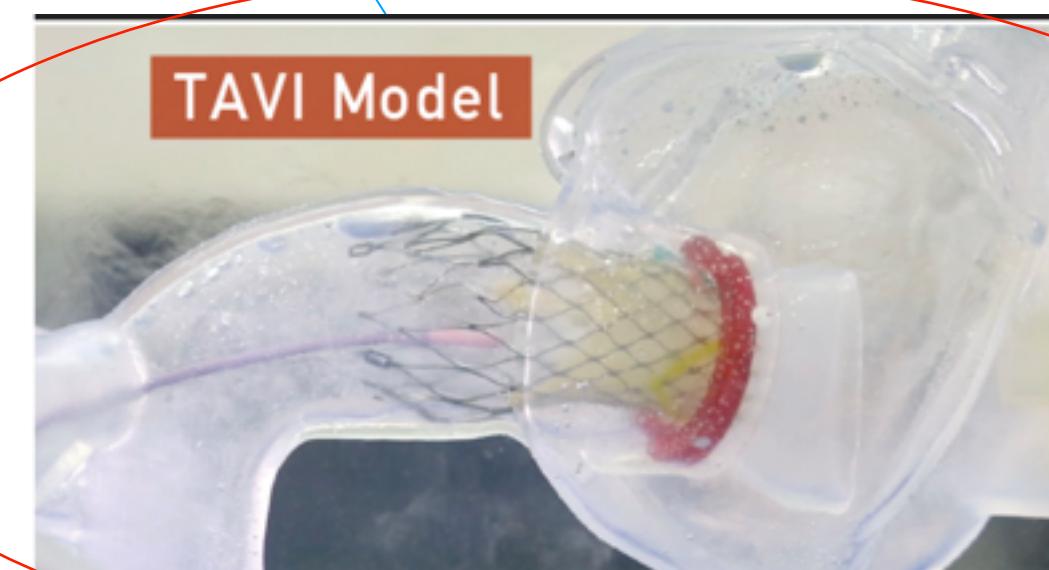
3D mapping



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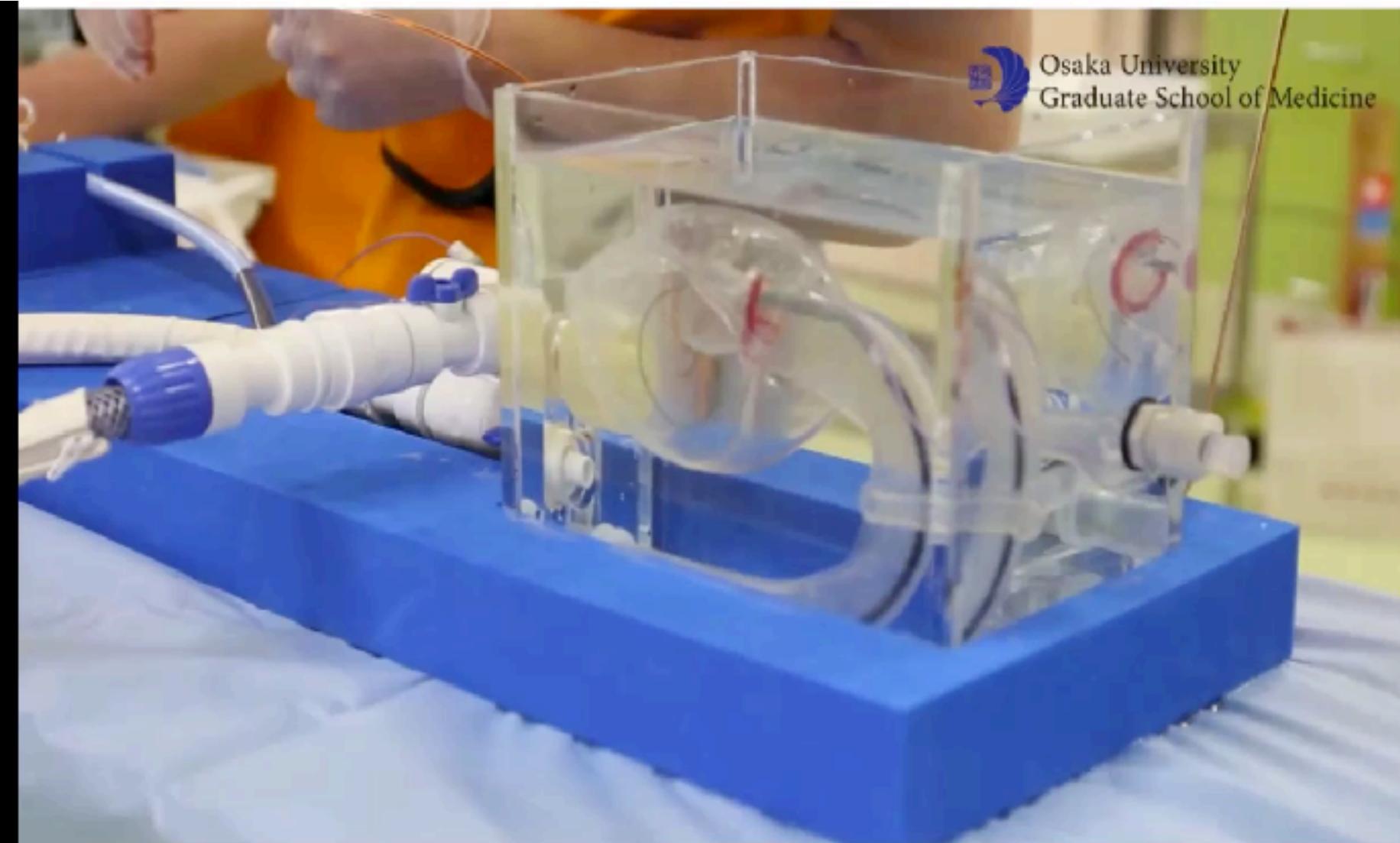


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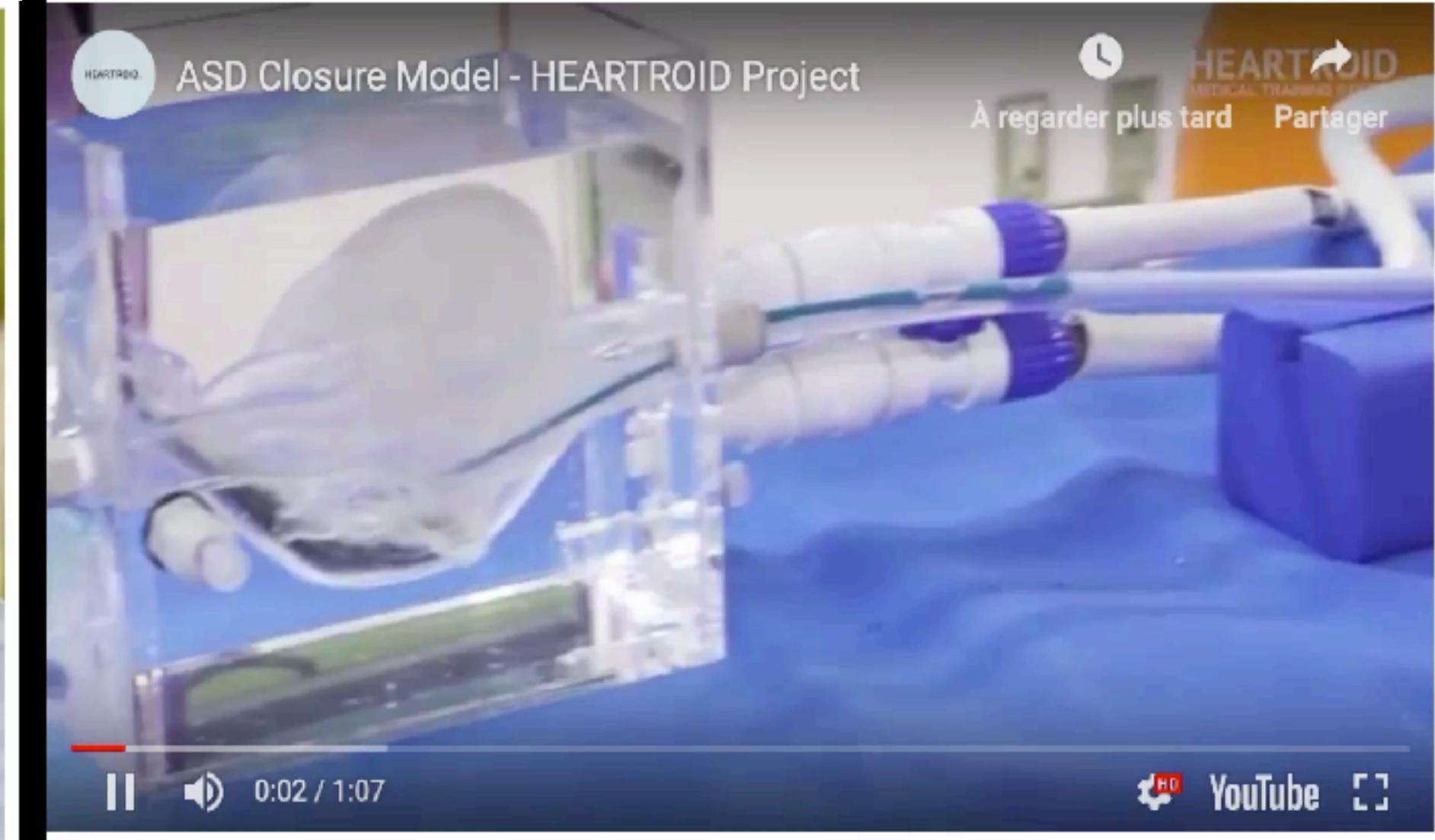
Startup Heartroid model structurel

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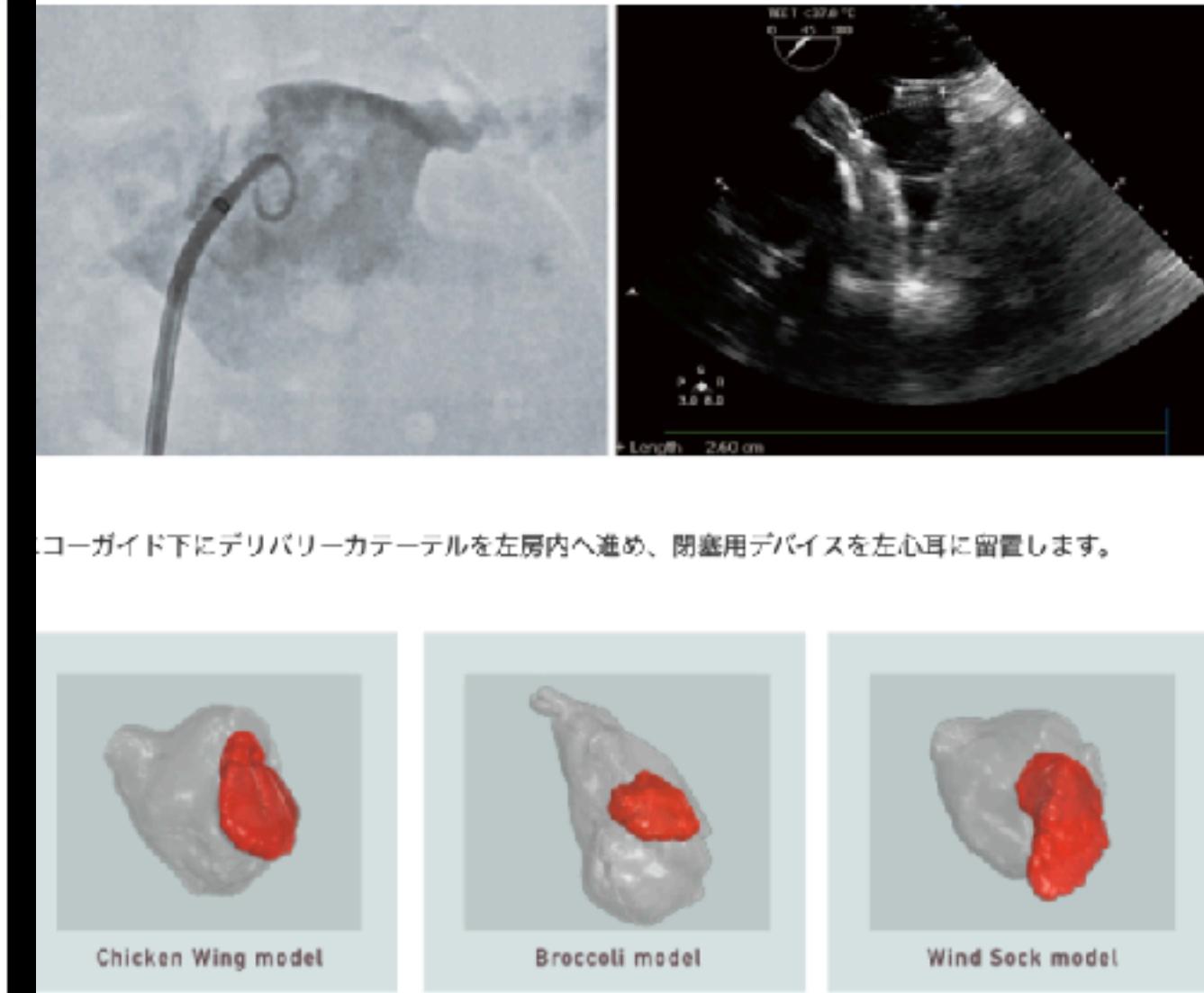
TAVI



PFO/CIA



LAA

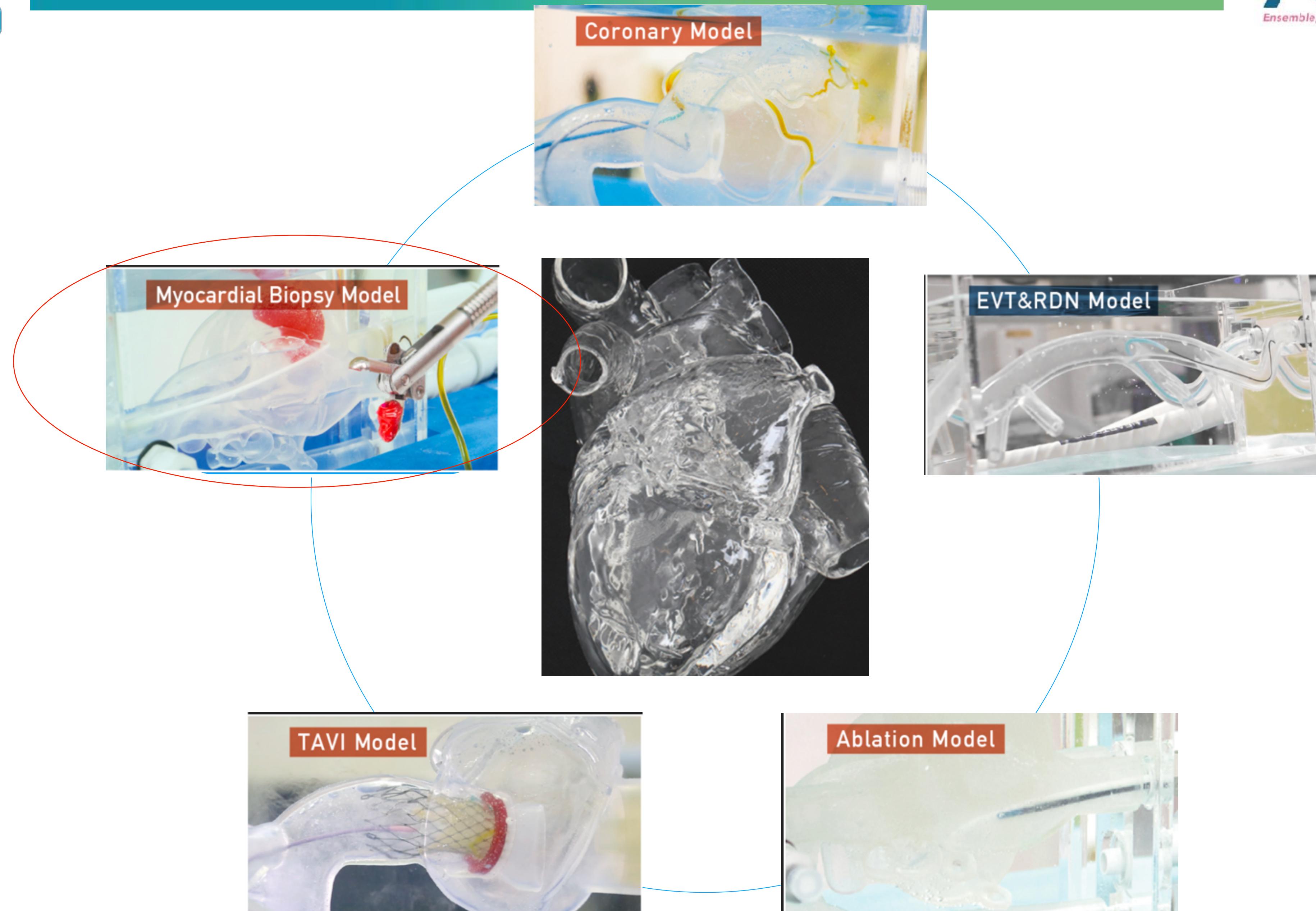


コーライド下にデリバリーカテーテルを左房内へ進め、閉塞用デバイスを左心耳に留置します。

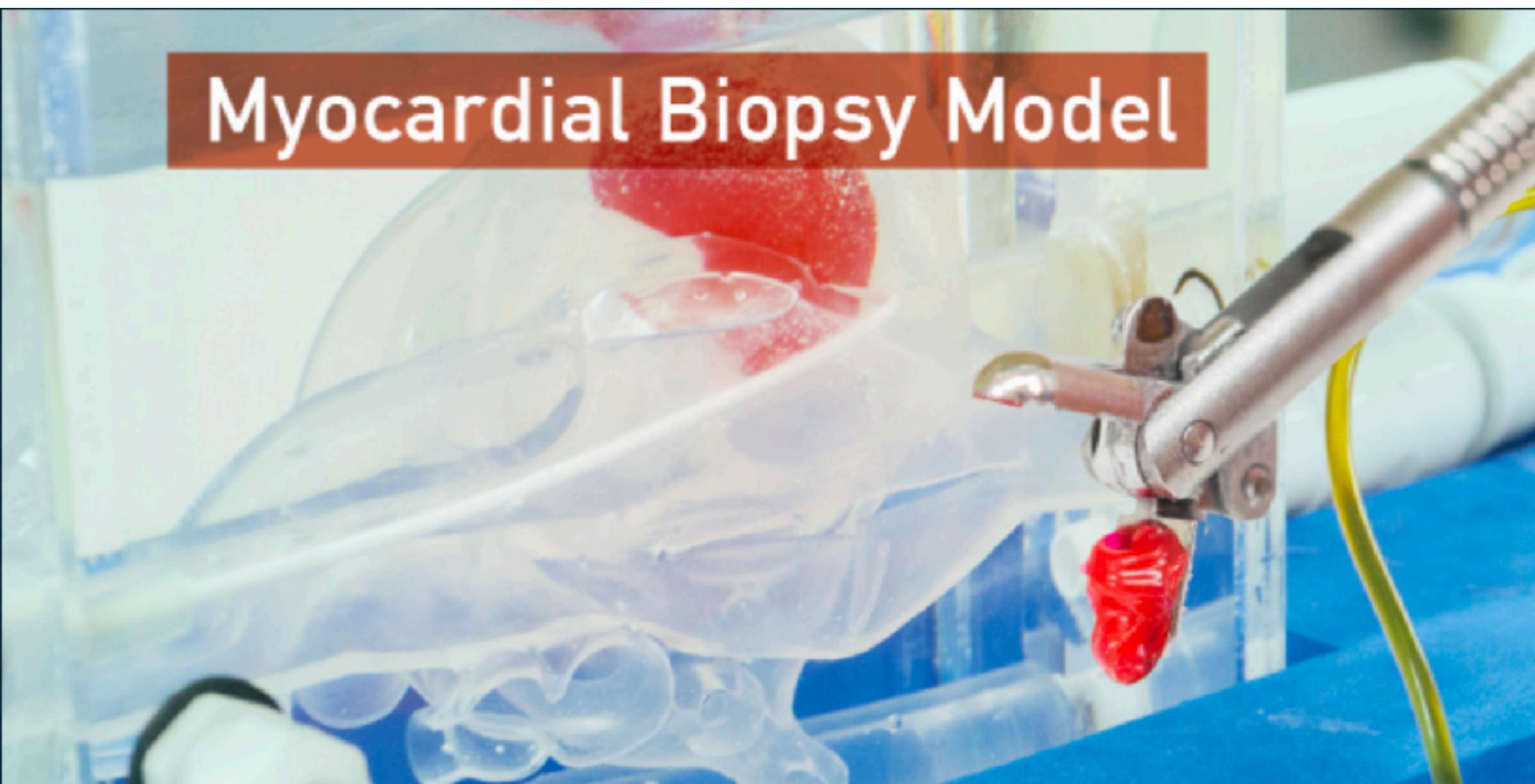
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Biopsie



Myocardial Biopsy Model

Autres



HEARTROID for
Research and
Development

Format



Optional Equipment

- Outil de formation permettant l'usage de vrai matériel
- Compagnonnage recommandé
- Potentiel pour la découverte d'une technique et la formation

www.heartroid.jp