IOWN INTEGRAL

NTT R&D FORUM 2024

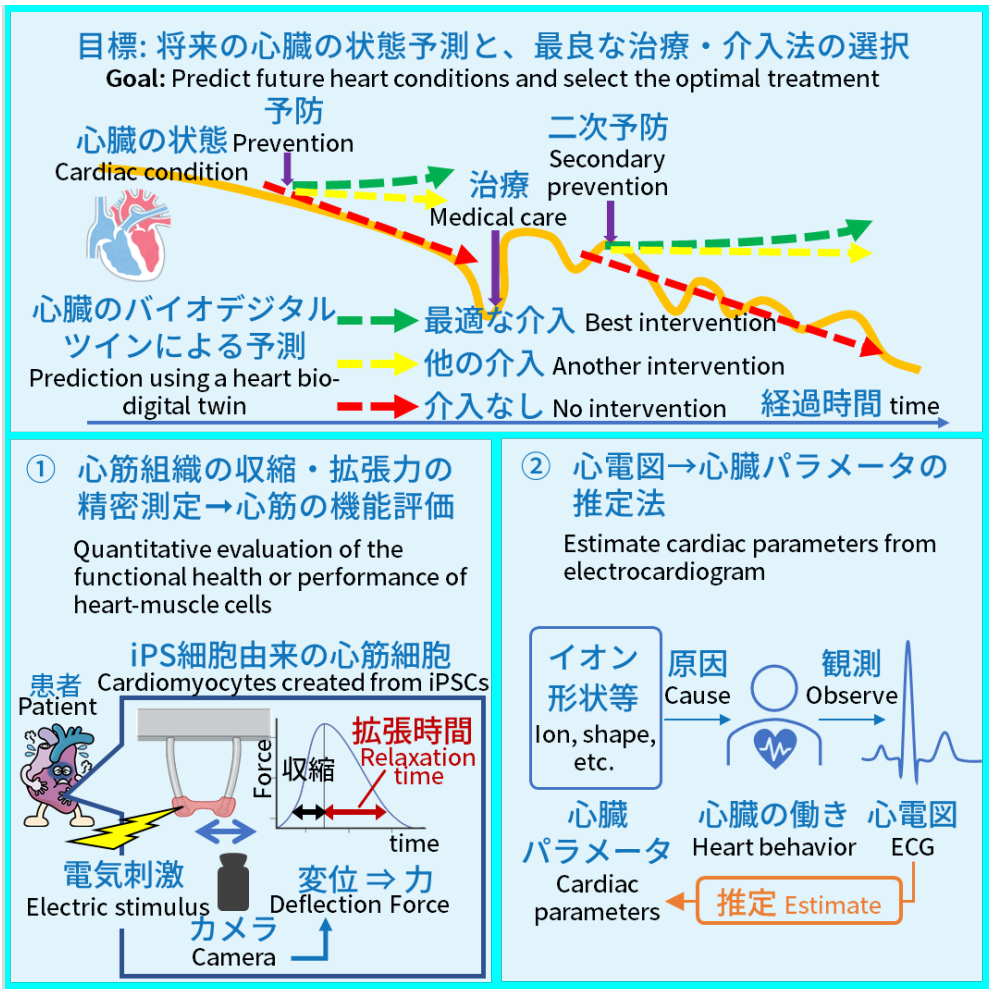
RESEARCH

γ09-05

# Toward digital myocardial function model

We aim to clarify myocardial dysfunction mechanisms and guide optimal treatments

#Well-being, Human Capital Management




## ///Technical Issue

The mechanisms of myocardial dysfunction and their impact on the entire heart are not fully understood, hindering treatment.

## ///Research Goal

We will develop a personalized cardiomyopathy treatment model for clinical use to improve patients' quality of life through timely interventions.

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## ---Technology

- Applying NTT's machine-learning and image-processing technologies to cutting-edge medical information.
- Combining medical insights with mechanical models and estimation techniques to create a digital representation of the entire heart's function.

## ---Novelty

- Measuring cardiac-cell-cluster forces from induced pluripotent stem (iPS) cells with over ten times the accuracy of conventional methods.
- Indicating the potential to estimate cardiac-cell states from electrocardiograms using machine learning applied to a cardiac simulator's input-output relationships.

## ---Applicable Business

Business area: medical services, healthcare industry.
Use Cases: The appropriate selection of treatment plans by medical professionals and patients.
Availability: We aim to establish the foundational technology by around 2030 and work towards its practical application.

Exhibitors=NIPPON TELEGRAPH AND TELEPHONE CORPORATION Related URL=NTT Communication Science Laboratories Open House 2024 related exhibition 1／related exhibition 2

Contact URL Outside Partner=Osaka University／Sakakibara Heart Institute