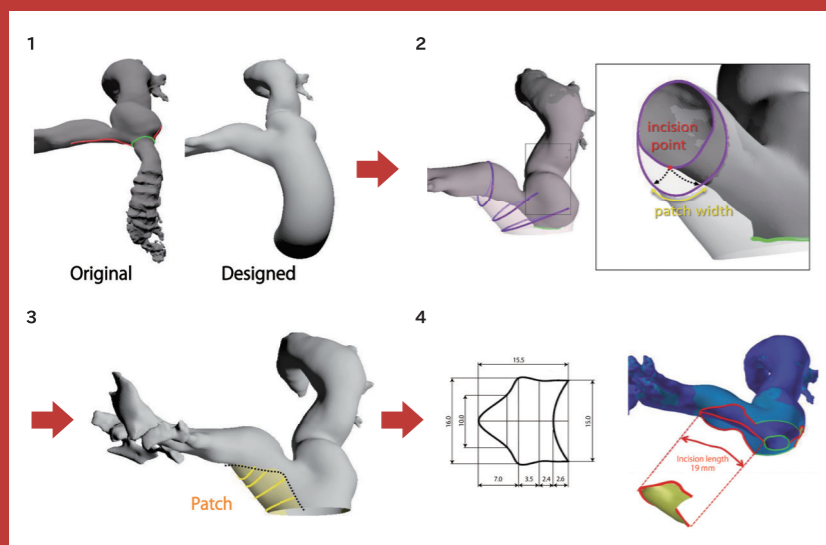
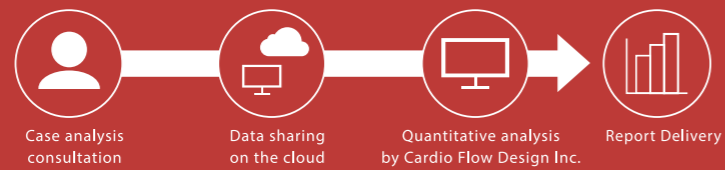


iTSimulation®

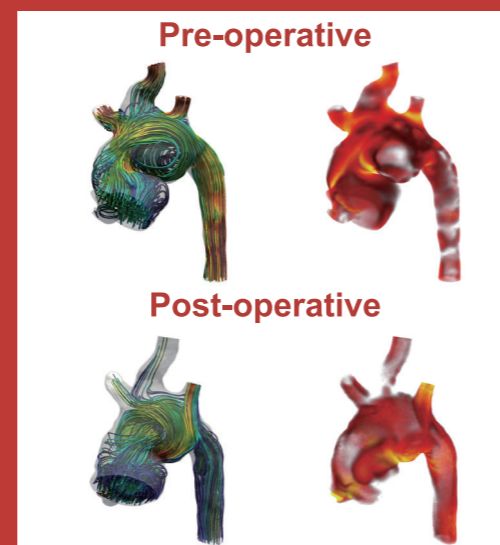
iTSimulation® is a service that simulates and visualizes blood flow based on CT images. We perform blood flow analysis using cutting-edge computational fluid dynamics (CFD) from CT data (DICOM data). Analysis results will be returned as a report, so anyone can easily participate in medical simulation research. In addition, by combining CG technology, we can also provide a "virtual surgery simulation".

Order Flow



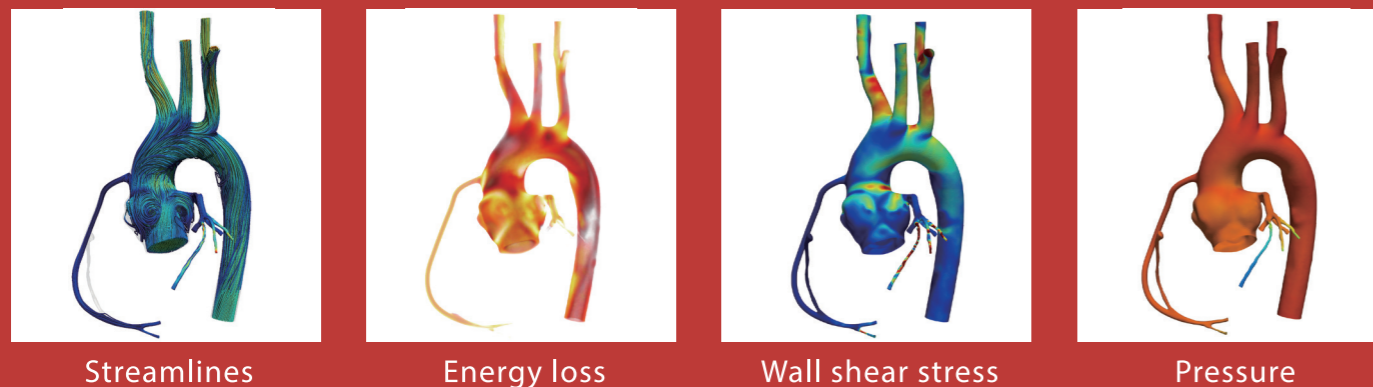
Patch creation flow for pediatric pulmonary angioplasty (virtual surgery)

*Miyaji K et al. Interact Cardiovasc Thorac Surg 2019 May 1;28(5):775-82



Comparison before and after Norwood surgery

Visualized Parameters



Streamlines

Energy loss

Wall shear stress

Pressure

This service is for research purposes only and cannot be used clinically.



Change Cardiology with Blood Flow Analysis

Our mission is "Change Cardiology with Blood Flow Analysis" and we aim to create a world where diagnosis with blood flow analysis can be easily done. Advances in IT, CT, and MRI have enabled us to understand more about the deep insight into the blood flow. We believe that predicting future diseases and planning surgery based on blood flow analysis will innovate the diagnosis and treatment of cardiovascular diseases and surgery. In order to make blood flow analysis a diagnostic technology, we are steadily advancing our technology with a team of doctors and engineers. Even so, this is a field that still needs more research. If you have an idea for blood flow analysis that could contribute to the advancement of medical care, please contact us.

iTFlow®
4D Flow MRI Post Processor
Onsite Software

iTEcho® (Echo VFM & IVPG)
Echocardiography Hemodynamics Examination
Onsite Software

iTSimulation®
Calculation in Supercomputers
Cloud Service



<https://cfd.life>

iTFlow®

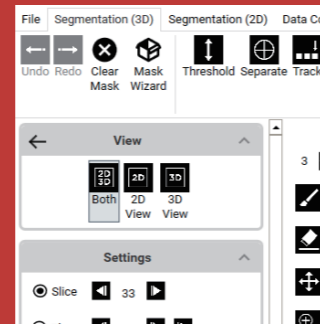
iTFlow® can quantify, visualize, and analyze blood flow using 4D Flow MRI images. Analysis is based on the theory of fluid dynamics, and advanced computer technology. This software reads images taken by phase-contrast cine MRI without contrast agents, and visualizes motion in the data in 2D or 3D, in addition to hemodynamics parameters.

Features of iTFlow®



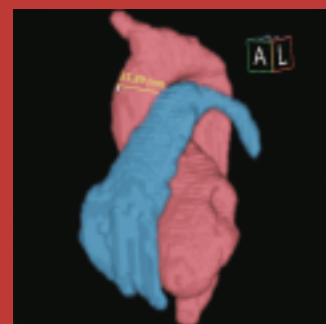
Tracking Heartbeat Motion

Track the motion of selected areas, such as the heart, pulmonary artery, and aorta.



High Operability

A user-friendly interface with semi-automated functions. It is easy to handle even for the first time.



3D View

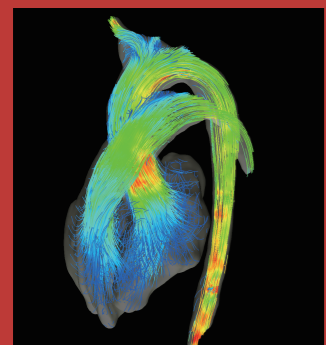
Visualization in 3D with motion. Users can operate graphically to understand more detailed parts.



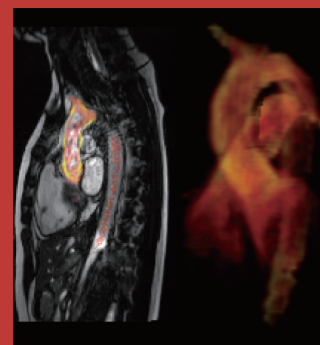
Compatibility with various output formats

Data can be exported in many formats such as images, videos, STL, and DICOM. The data measured within the software can be exported in CSV format for easy handling with tools such as Excel.

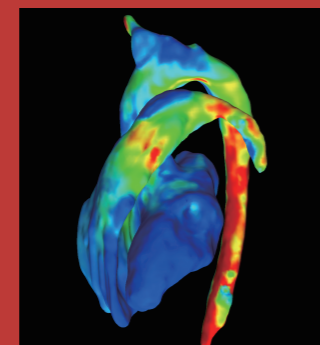
Visualized Parameters



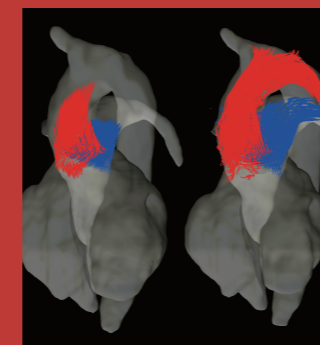
Streamlines



Energy loss



Wall shear stress

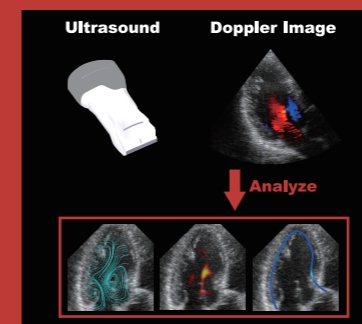


Pathlines

iTEcho®

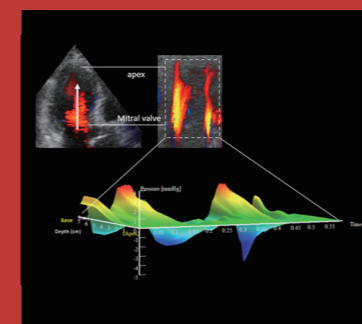
iTEcho® quantifies, visualizes, and analyzes blood flow based on ultrasound images. An ultrasound blood flow analysis package includes two pieces of software, VFM (vector flow mapping) and IVPD (intraventricular pressure difference), which can easily evaluate the distribution of intraventricular blood flow velocity and pressure gradient.

Features of iTEcho®



Visualization and quantification of blood flow velocity information

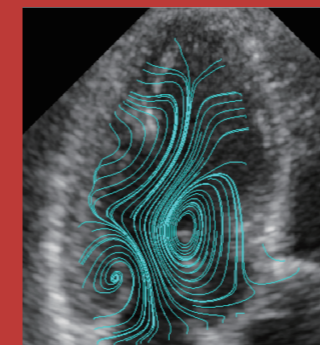
VFM (vector flow mapping) included in iTEcho® is software that can quantify and visualize blood flow. Fluid parameters such as intracardiac blood flow velocity vectors can be visualized from a single color Doppler image.



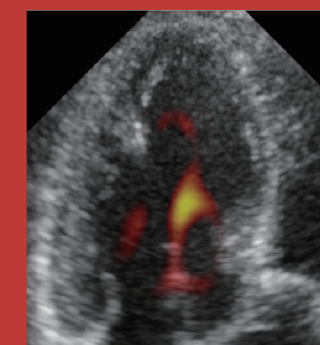
Visualization and quantification of intracardiac pressure gradient

IVPD (intraventricular pressure difference) included in iTEcho® is software that can quantify and visualize intracardiac pressure gradient using color M-mode images. This allows us to assess the force with which the left ventricle draws blood in.

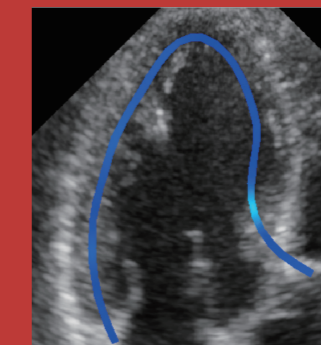
Visualized Parameters



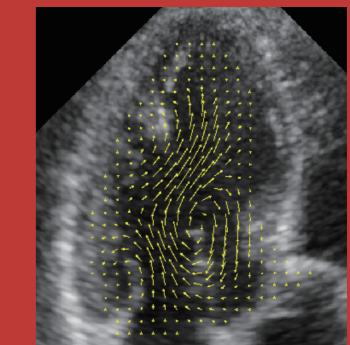
Streamlines



Energy loss



Wall shear stress



Velocity vectors