

Educational Cardiovascular Model

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Technology description

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Interactive Educational Cardiovascular Model

Overview

The invention provides a novel approach for a cardiovascular model that could be used in the classroom to teach cardiovascular physiology. This model is both anatomical and interactive to provide students with hands-on learning.

Technology

The cardiovascular model will be supported by a vertical Plexiglas with a 3D printed elastic four chamber anatomical heart. The blood flow will be controlled by a hand-cranked gear that first pump the atria and then the ventricles. The crank will compress the heart chambers while valves regulate simulated blood flow through the heart for distribution to the lungs, brain, muscle, and other tissues. This model will demonstrate concepts of heart rate, stroke volume, cardiac output, blood volume, regulated blood flow, systolic pressure, diastolic pressure, mean arterial pressure, systemic vascular resistance, and cardiogenic pulmonary edema.

Research Interests

Kinesiology

Cardiovascular Physiology



**TECHNOLOGY
COMMERCIALIZATION**

Application area

Health Education

Patient Education

Advantages

Interactive: The invention allows users to turn the crank to simulate heart contractions and blood flow allowing users to interact with the model and promote student participation and peer collaboration

Functional: Unlike available static anatomical models, this model allows users to demonstrate the working physiology of the cardiovascular system (heart rate, stroke volume, blood pressure, and blood volume)

Institution

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