Karin Loiske is a registered biomedical scientist and has been working in clinical physiology since the year 2000. She started her career at Karlskoga Hospital where she was introduced to the field of echocardiography, which became her speciality, and to research in the same field by Kent Emilsson, MD, PhD, who became her supervisor. In December 2006 she was enrolled as a research student in the School of Health and Medical Sciences at Örebro University. Shortly afterwards she was employed as a research biomedical scientist at the department of Clinical Physiology, Örebro University Hospital. She is currently working as a research biomedical scientist at Karolinska University Hospital, Solna.

Echocardiography is a popular and well established technique used worldwide. A lot of focus has been dedicated to the left side of the heart over the years, whereas the right side has played an inconspicuous part. The right side of the heart, especially the size and function of the right ventricle, plays a very important role as it is a sensitive predictor in a number of cardiac diseases. The complex anatomy of the right ventricle, however, complicates the accessibility for evaluating its size and function with echocardiography. This thesis presents four studies where studies I-III focus on investigating how to measure the size of the right ventricle and two different parameters to evaluate its function. In study IV biventricular changes in the acute phase and the recovery phase of a specific disease, takotsubo cardiomyopathy, are examined.