

Heart & abdomen – Professor Steffen Peterson

Hello, I'm Steffen Petersen and I am a Cardiologist and specialist in heart imaging working on the UK Biobank imaging study.

To be able to study in detail the hearts and blood supplies of 100,000 people presents us with an incredible opportunity for health research. This is even more powerful because you, our UK Biobank participants, have already provided us with lots of other information about your health.

As part of the imaging process, each participant will undergo a 20 minute heart scan, which will record a number of key parts of the heart. It will provide information about the heart chamber - the right and left atrium and ventricles - specifically their diameters, the volume of blood passing through, and how the heart changes as it pumps blood around the body. The scan will also measure the thickness of the heart wall and the size, shape and stiffness of the thoracic aorta, which is the vessel which delivers blood from the heart.

Using the same scanner, each participant will also have a 10 minute scan of their abdomen. This will measure fat and provide an accurate picture of how it is distributed throughout the body, something which varies enormously in individuals.

Increased amounts of body fat, especially abdominal obesity, are linked with significantly negative effects on health, including conditions such as insulin resistance, type 2 diabetes mellitus, high blood pressure, high blood cholesterol, cardiovascular disease and certain cancers.

Conducting detailed heart imaging will provide a unique resource for advancing knowledge. Combining this with the very detailed information that is already available from the questions, measures and samples obtained when you joined UK Biobank



will allow new insights into a wide range of cardiovascular conditions. This includes common illnesses like heart attack, heart failure, stroke and irregular heart beat. It will also provide useful information for the study of other disorders not usually associated with the heart, such as diabetes, metabolic syndrome and dementia.

I would expect a very large number of researchers to use the data and images we collect. The results might help us better understand how a patient's illness might progress, or help us identify evidence of disease before it becomes a clinical problem. This information would help doctors to sub-divide patients and treat them in more subtle ways, perhaps intervening at a more crucial time, reducing side effects of drugs or helping us decide when the most sensible option is to watch and wait.

The information will also help us understand the role of our genes and the environment in the development of heart disease. It will also allow us to assess how differences like age and gender affect the outcome of treatments.

UK Biobank has led the world in developing a large-scale study that can follow the health of its participants over many years. In response, other countries are now developing their own biobanks. Many scientists around the world are watching to see how UK Biobank works, so that other data around the world can be collected in the same way. Combining information from a growing number of biobanks will make the data much more powerful, and allow scientists to answer questions they have not yet even thought about.

With your help, I firmly believe that UK Biobank will make a major contribution to health research around the world, indeed, it is already doing so. Thank you for your support of this project. If you have any questions about the scanning programme please do get in touch by email or telephone in the ways indicated on this page. Thank you.