

DKK 15 million for quality assurance of future hip and knee implants

Researchers from Aarhus University and Aarhus University Hospital have received DKK 15 million from the Danish National Advanced Technology Foundation. The grant will give Denmark a leading technological position by developing an integrated diagnostic imaging platform increasing the quality assurance of new artificial hip and knee implants.

More and more people undergo hip and knee implant surgery. Most implants are well-functioning but an effective system to aid the step-wise controlled introduction and to ensure the quality of new products and surgical techniques is needed.

The DKK 15 million grant will be used for developing a diagnostic imaging platform important for assessment of the durability and functionality of artificial hips and knees and is a collaboration between Aarhus University, Aarhus University Hospital, Aalborg University Hospital and the technology company Nordisk Røntgen Teknik (NRT) from Højbjerg, Aarhus.

"With this platform we will be able to offer our patients increased safety with a more precise follow-up of the fixation of their hip or knee implant. At the same time the project will lead to considerable cost savings in healthcare and contribute to reduce the number of serious complications after implementation of artificial joints", says professor Kjeld Søballe from Aarhus University and Aarhus University Hospital. He will be working in close collaboration with Maiken Stilling, assistant professor, MD/PhD at Aarhus University, Lone Rømer, radiologist at Aarhus University Hospital, and Mogens Ravn, CEO at NRT.

Denmark on the world map

Within the last 20 years researchers at e.g. Aarhus University has worked with developing radiostereometry(RSA) but so far, RSA has only been used to a limited extent in research. The grant will make it possible to further develop RSA, and the ambition is to automatize the technology making it possible to analyse large populations and introduce the technology as a part of clinical practice.

"RSA gives very precise 3D-measurements and the possibility to assess whether there is wear, loosening or instability of the implants over time. And this gives us the possibility to identify and discontinue use of newly introduced implants which do not meet the expected results", says Kjeld Søballe.

He is very pleased with the grant which is a big progress for Danish orthopaedic research and the results will put Denmark on the world map concerning recommendations for the use of hip and knee replacements.

"The technological platform is unique and the development is dependent on competent contributions from all project partners. The project will increase development and employment in this high-technological area.

The project will undoubtedly promote implant research and patient outcome", says the professor.