

New imaging method for evaluating transport of oxygen to cells

STOCKHOLM – MARCH 30, 2023 - In cooperation with Perimed AB, researchers from the Department of Biomedical Engineering at Linköping University, Sweden, have developed a new method for imaging microvascular blood flow in video-rate that enables new aspects of evaluating the vital transport of oxygen to cells. The method was published in the latest issue of Journal of Biomedical Optics, which is a leading journal within the field.

"Microcirculation is a critical function in our body and often affected by diseases such as diabetes, endothelial dysfunction, and sepsis. Understanding this process in more detail enables clinicians to take scientific-based decisions and ensure that these growing patient groups receive accurate and timely care. This is novel cutting-edge research promising an unprecedented understanding of this vital function", says Lena Åredal, CEO at Perimed.

The method utilizes ultra-parallel computations of data from a high-speed image sensor, implemented in a programmable electronic chip. This results in so called multi-exposure laser speckle contrast images, that are further analyzed by artificial intelligence, resulting in a novel measure of tissue blood flow with quality not seen before. Even more importantly, the new method enables distinction between different vessel compartments based on flow speed.

The new aspects of the microcirculatory blood flow that can be studied with the technique give opportunities for better diagnosis of vascular diseases such as diabetic foot ulcers. It is an important step in Perimed's vision to improve the quality of life for people suffering from vascular diseases.

This research would not have been possible without the well-established cooperation between Perimed AB and the researchers at Linköping University, promoted by Vinnova – Sweden's innovation agency, and their strategic innovation programs Medtech4Health and Swelife.

Read the whole open access journal paper here: <https://doi.org/10.1117/1.JBO.28.3.036007>

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Perimed is a private Swedish company active on the global market, with seven subsidiaries and more than twenty distributors around the world. We have more than 40 years of experience and unique competence in laser-based blood perfusion measurements, making Perimed a leader in peripheral vascular diagnosis. Our equipment is typically used in Wound Care Departments, Diabetic Foot Clinics, Vascular Surgery/Labs and Radiology. We have over 4000 installed instruments worldwide.

Attachments

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