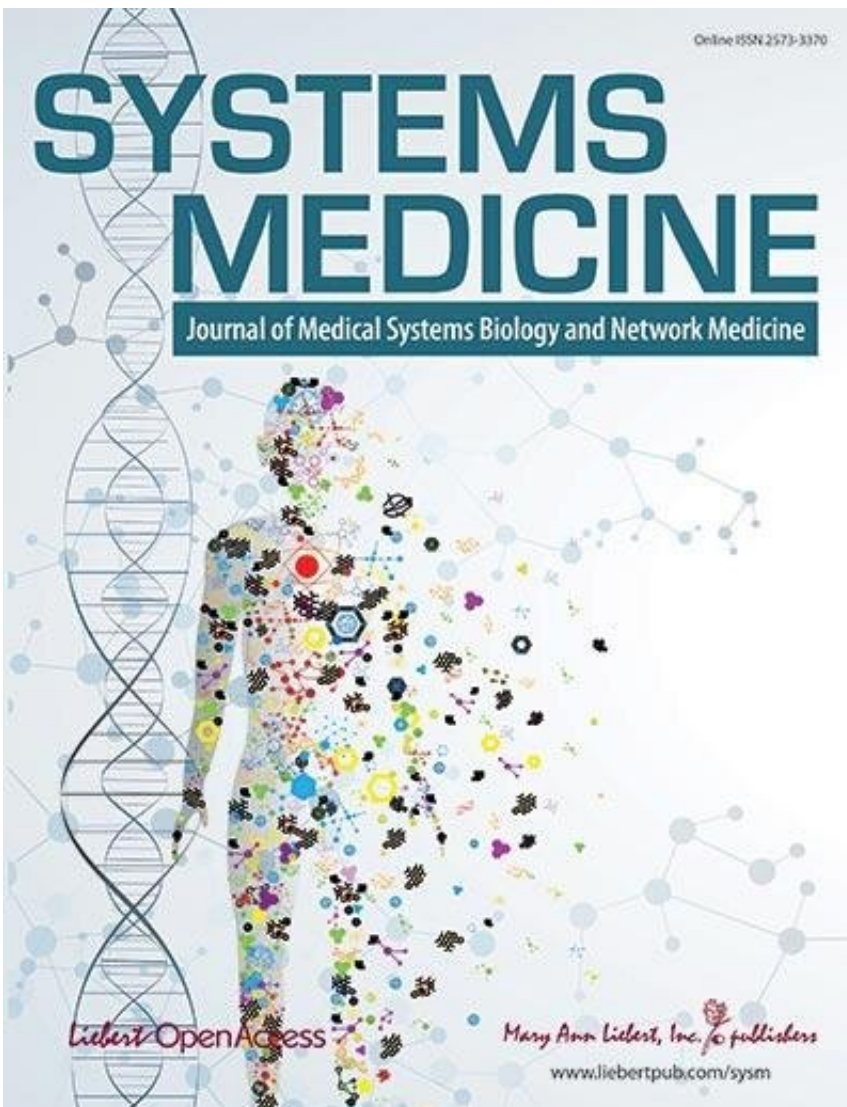# Virtual patients and in silico clinical studies improve blue light treatment for psoriasis

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Credit: Mary Ann Liebert, Inc., publishers

A new study supports the use of virtual patients and in silico clinical studies to evaluate the effectiveness of blue light to reduce the symptoms of psoriasis. Researchers also demonstrated that this in silico approach can be used to improve the treatment response of patients with psoriasis to blue light by modifying the settings of the therapeutic protocol, as reported in the study published in *Systems Medicine*, an open access journal from Mary Ann Liebert, Inc., publishers.

"In silico Clinical Studies on the Efficacy of Blue Light for Treating Psoriasis in Virtual Patients" was coauthored by Zandra Félix Garza, Peter Hilbers, and Natal van Riel, Eindhoven University of Technology, The Netherlands, and Joerg Liebmann and Matthias Born, Philips Electronics Netherlands BV, Eindhoven. The researchers note that the current computational model for studying the efficacy of blue light therapy only reproduces the response in the average patient in clinical trials and does not take into account individual variations amongst patients. Use of a computational model combined with a refined pool of virtual patients can adequately capture the patient variability in the response to treatment with blue light and the decrease in disease severity seen in previous clinical investigations. The authors suggest that a minimum of 2,500 virtual patients, which they refined down from an initial pool of 500,000 virtual patients, are needed to reproduce the responses seen in clinical investigations.

"This is a highly promising approach towards using statistical learning on virtual patient populations to draw actionable clinical conclusions on real patients, and thus a major step forward to precision medicine," says Co-Editor-in-Chief Prof. Dr. Jan Baumbach from Technical University of Munich.

More information: Zandra C. Félix Garza et al, In Silico Clinical Studies on the Efficacy of Blue Light for Treating Psoriasis in Virtual Patients, *Systems Medicine* (2019). DOI: 10.1089/sysm.2018.0007

Provided by Mary Ann Liebert, Inc

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