

JOINT LECTURE SERIES

CLINICAL RESEARCH ON INNOVATIVE HEALTHCARE

Tuesday 27 September - 16:00-17:30, Hybrid Meeting

Luxembourg Institute of Health (LIH), TTM meeting room,
1A Rue Thomas Edison, L-1445 Strassen

& WebEx: <https://tinyurl.com/innovhealth2>

[access code: 2730 871 9827

password: dQNHxhAh222 (37649424 from phones)]

MULTIPLE SCLEROSIS MANAGEMENT 4.0: MS DIGITAL TWIN



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Individualized and innovative disease management is of great importance for patients with multiple sclerosis (MS) in order to cope with the complexity of this chronic, multidimensional disease. However, a personalized “state of the art” strategy with precise adaptation to the individual disease is still far from the current everyday treatment. A revolutionary tool for the future disease management of patients with long chronic diseases is the so-called digital twin, in which a virtual copy (twin) of the patient is created with the help of a systematic collection of multidimensional data. Through an analysis of various disease parameters based on artificial intelligence or other innovative algorithms - including clinical and paraclinical data, imaging, multi-omics, biomarkers, information about life circumstances and plans, and medical procedures - a large amount of multidimensional data can be processed and analyzed back through the structure of the digital twin. This can contribute to more effective personalized care by integrating data from different sources in a standardized way, implementing individualized clinical pathways, supporting physician-patient communication, and facilitating shared decision making. With a clear presentation of pre-analyzed data on a dashboard, patient engagement and individualized clinical decisions as well as prediction of disease progression and treatment simulation could become possible. Implementation of the digital twin is complex; benefits, challenges, and practical aspects of digital twins for MS need to be considered. With our Dresden MS cohort with more than 2200 patients, we have demonstrated that innovative data collection could be combined with individual clinical pathways creating step by step our vision of MS digital twin.

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