

The Human Motion Project – HUMO

From a Multiple Sclerosis trials and research centre to an international collaborative research platform to study human motion...

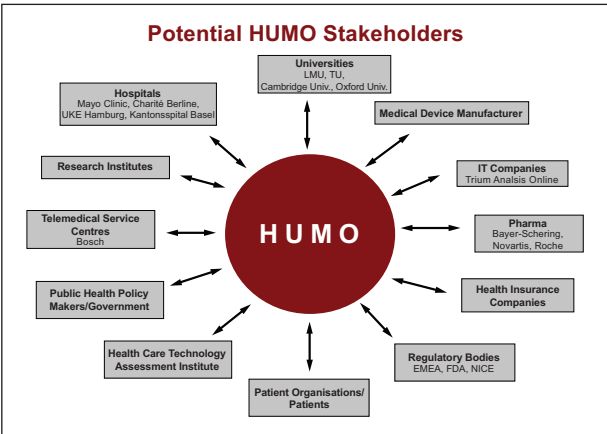
Human gait is remarkable. It is the basis of human motion – gait and movement disorders are the hallmark of many disabling diseases – and it is a blockbuster drug in its own right. 30-45 minutes brisk walking every day has shown strong beneficial long-term effects for many sufferers of significant diseases, even when based on hard outcomes such as mortality.

The Human Motion Project (acceleromics) is an analogue to the Human Genome Project (genomics); the vision is to improve human health by evidence-based, decision support tools for diagnosis and treatment through a better understanding of the alphabet and the language of human motion and its consequences on the mind and body.

At the centre of the project is the development of an open collaborative human motion and medical monitoring technology platform and a biomedical data warehouse for collecting, archiving, analysing and disseminating human motion data.

The key medical areas are: neurological (degenerative) diseases (MS, Parkinson's disease, Alzheimer, dementia, pain) and other disabling diseases (chronic obstructive pulmonary disease, osteoporosis, cardiovascular diseases including stroke), as 'surrogates' for the multitude of disorders that affect people in an ageing society. Drivers for innovation are sports and space, which extend the limits of human physiology and motion.

The key underlying scientific areas of computational medicine are: mathematics, physics, biostatistics, biomedical engineering, computer science and imaging.



The Human Motion Project is expected to have a long-term impact on the development of novel interdisciplinary academic fields, as well as being a stimulus and place for the development of a critical path toolkit.

The Sylvia Lawry Centre (SLC) is in the unique position to be the crystallising point for such a development; it bundles together all the core competencies from mathematics/physics, IT/biomedical engineering to clinical trial expertise in a cluster in Munich, with excellent international key partners from academia, industry and regulatory bodies. Methodologically this is captured by 'Clinical Applications of Computational Medicine', a novel direction of interdisciplinary biomedical research supported by the local universities. The SLC has an excellent track record of successful implementations of public private partnerships, to serve as a productive host for international collaborative research, to develop evidence-based decision support tools and to deal with the complexities of maintaining scientific independence while encouraging their entrepreneurial development.

Moreover, the human motion project is a natural development and extension based on the results of systematic

patient-based meta-analyses of the SLC database in the field of MS. Here insufficient outcome measures, lack of standards and invalid surrogates are typical, and there is a specific need for objective tools to measure long-term disability. In addition, a recent Cochrane analysis

shows that physical activity in the right dose is a low-cost and potentially powerful treatment option.

We are rapidly broadening our capability to pursue our new mission in MS and an increasing number of other diseases: 'evidence-based decision support tools for better clinical choices.' A key element is the actibelt – a technological platform and a research tool that allows us to study physical activity in a large number of diseases.

We have the right partners, the experience and it's the right time to start to seek funding for HUMO – to move human health.




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