



EUROPEAN UNION

European Regional  
Development Fund

Senate Department  
for Economics, Energy  
and Public Enterprises

**BERLIN**



# Europe makes Berlin – fit for the future

innovative | climate-conscious | integrative | sustainable

In order to promote joint development, the EU Regional Fund (ERDF) supports regions across the EU. Berlin, its companies, and people also benefit from EU funding policy. By 2027, EUR 680 million will be allocated to the Berlin ERDF programme, which, together with the necessary national co-financing, will grow to around EUR 1.7 billion.

These funds are used specifically to promote sustainable growth, strengthen future-oriented industries and further extend our city as a hotspot for highly innovative startups. With more than a third of the budget, climate protection and energy efficiency are more firmly anchored in the ERDF programme than ever before. Another focus lies on measures for the development of disadvantaged urban quarters.

Exciting EU-funded projects can be discovered all over the city!

## A unique laboratory in the world: “OrthoLoadLab” at the Julius Wolff Institute of the Charité

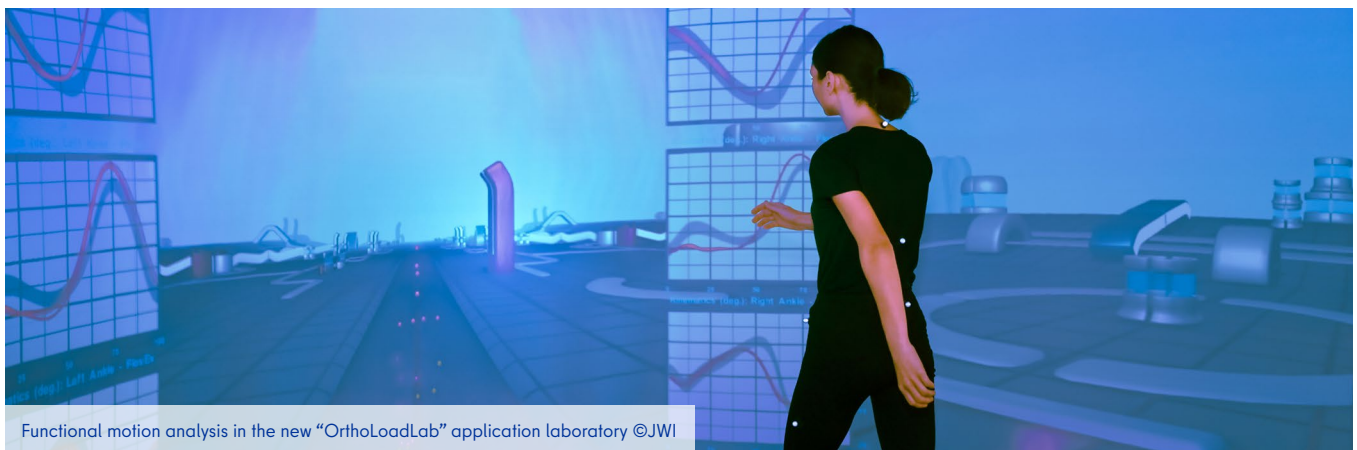
With more than 400.000 surgeries per year in Germany, the joint replacement is one of the most common surgical procedures. In order to enable patients to return to everyday life as unrestricted as possible and to ensure physiological movement and functionality after implantation, highly innovative, research-based diagnostic methods and developments are necessary. While it was already the standard to complete a variety of tests and checks before implantation to ensure the quality of the implants, until now there were no ways to objectively check the actual functionality under physiological loads and activities on the living object – in vivo.

With the establishment of the OrthoLoadLab, a specific laboratory research infrastructure for functional motion analysis and diagnostics has now been created. In addition, the new analytical method can also be used as part of the gait analysis and run analysis of the Charité ([bemoved.charite.de](https://www.bemoved.charite.de)). Through the movement analysis, especially athletes and patients with knee problems and beginning osteoarthritis benefited directly from the newly established “OrthoLoadLab”.

“Only through the possibility of ERDF funding, the construction of the OrthoLoadLab could be implemented. With this application laboratory, a unique research infrastructure could be created.”

**Sybille-Andrea Lorenz**, Managing Director of the Julius Wolff Institute (JWI), administrative coordination and representative project management “OrthoLoadLab”

In order to enable this innovation in the infrastructure of science and research, the project “OrthoLoadLab” was funded by the ERDF.



Functional motion analysis in the new “OrthoLoadLab” application laboratory ©JWI

## INTERPLAY BETWEEN MECHANICS AND BIOLOGY

The OrthoLoadLab is the only laboratory in the world that combines classic motion analysis with 3D X-ray illumination in a virtual environment. Through this unique in-vivo motion data and direct, function-specific and clinical research and evaluation, the OrthoLoadLab offers science, companies, physicians and patients improved options in research, diagnostics, therapy and care.

## THE ERDF PROMOTES PROGRESS

The in-vivo collected load data from the OrthoLoad Database ([www.OrthoLoad.com](http://www.OrthoLoad.com)) will in future be combined with the motion data collected individually in the OrthoLoadLab into a worldwide unique database. This unique selling point sets new standards in terms of quality and sustainable patient care. With the establishment of the OrthoLoadLab, companies also have the opportunity to test new developments in small series under controlled, standardised conditions in vivo.

## THE ERDF IN ACTION IN BERLIN

With the OrthoLoadLab, Berlin has a unique research infrastructure that can provide impetus in the scientific, clinical, and economic environment in a variety of ways, offerings positive effects on patient care and in many ways strengthening medical technology developments and innovative companies in a competitive manner.

## The ERDF makes Berlin fit for the future by

- generating new options in clinical research and for medical technology development processes.
- fostering the collection, evaluation and use of new data and insights in research projects and studies.
- promoting personal careers on the scientific and clinical side.
- achieving and implementing an improvement in the diagnosis and treatment of patients.
- creating a globally unique cluster in the field of health care.

## FUNDING

Funding Priority:  
Innovations

Funding Instrument:  
Infrastructure for science and research

Funding Amount:  
EUR 3.987.600, of which 50 % ERDF

## CONTACT

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Research Health and Long-Term Care

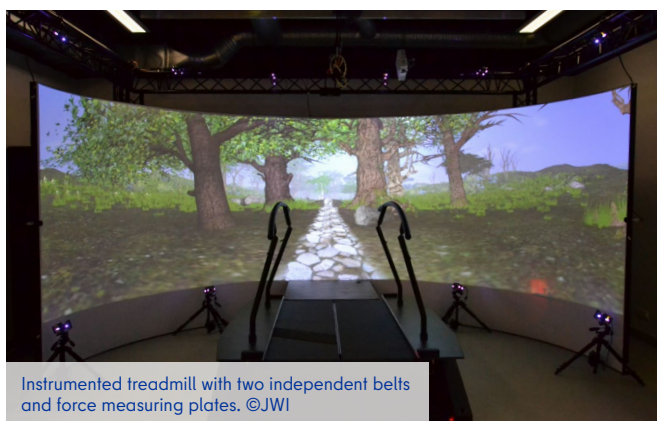
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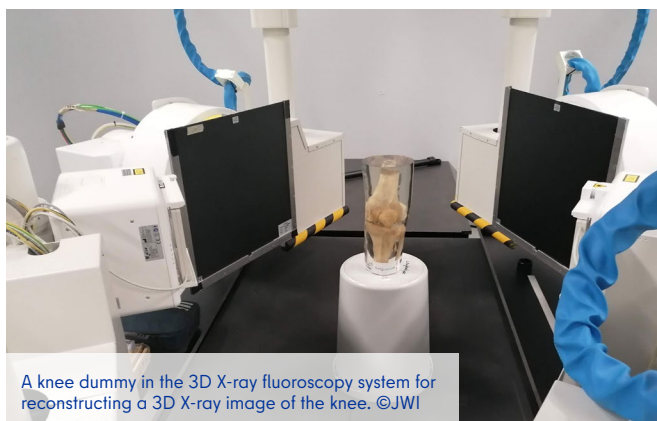
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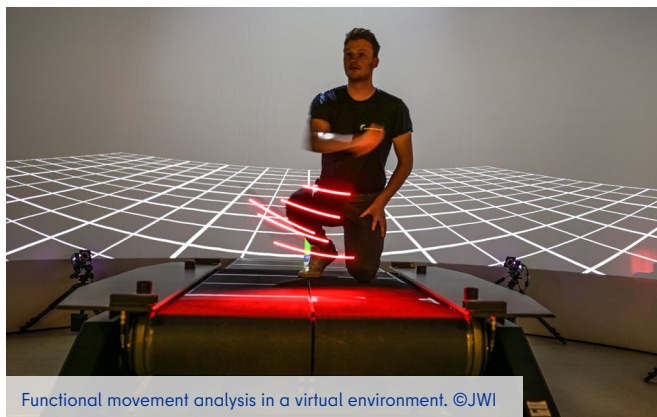
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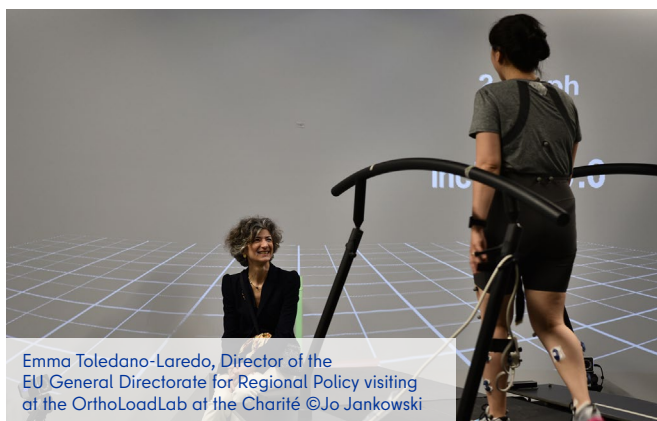
Instrumented treadmill with two independent belts and force measuring plates. ©JWI



A knee dummy in the 3D X-ray fluoroscopy system for reconstructing a 3D X-ray image of the knee. ©JWI



Functional movement analysis in a virtual environment. ©JWI



Emma Toledano-Laredo, Director of the EU General Directorate for Regional Policy visiting at the OrthoLoadLab at the Charité ©Jo Jankowski