



Press release

January 2024

Revolutionizing Type 2 Diabetes Care: Developing Groundbreaking Virtual Twin Technology for Privacy-Preserving Personalized Treatment Outcome Prediction

In a significant stride towards advancing precision medicine, a consortium coordinated by Prof. Dr. Jan Baumbach from the University of Hamburg (Germany), with 13 partners from seven countries, has been awarded a prestigious Horizon Europe grant to develop a cutting-edge federated health data infrastructure. The project, named "dAlbetes", focuses on leveraging virtual twins as prognostic tools in personalized disease management, specifically targeting treatment outcomes in type 2 diabetes. The project started on 01 January 2024.

To develop virtual twins as prognostic tools for precision medicine the partners of dAlbetes will integrate extensive datasets from diverse sources, all while respecting privacy legislation. To this end, the project employs federated learning—a privacy-enhancing computational technique that allows the training of AI models on distributed datasets that stay behind safe firewalls at all times and are not uploaded into a cloud. This approach safeguards sensitive patient information while enabling effective use of big data.

In pursuit of its objectives, dAlbetes aims to achieve personalized prediction of treatment outcomes for patients living with type 2 diabetes—a prevalent condition affecting 1 in 10 adults globally, with annual expenditures of around 893 billion EUR. The partners will harmonize data from approximately 800,000 type 2 diabetes patients across four cohorts distributed across the globe in a specialized federated database network and use it to train prognostic virtual twin models. After validation, these models will be applied in real-world clinical practice through a dedicated software. Ultimately, the results will aid to alleviate the current lack of guidelines for expected treatment outcomes for specific patients, while the developed software platform will act as a model for the next generation of patient registries.

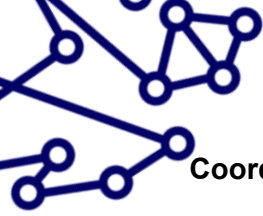
dAlbetes brings together a multidisciplinary consortium with expertise in artificial intelligence, software development, privacy protection, cyber security, as well as diabetes and its treatment. The collaborative effort aims to create a blueprint for overcoming the antagonism of privacy and big data in cross-national diabetes research and beyond.

The consortium is committed to advancing the frontiers of medical research, ultimately improving patient outcomes and contributing to the global development of precision medicine.

More soon via daibetes.eu (available soon), [X](#), and [LinkedIn](#).

The dAlbetes project has received funding from the European Union's Horizon research and innovation programme under the Grant Agreement no: 101136305. The information contained on this press release are however those of the author(s) only and do not necessarily reflect those of the European Union.





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