
Center Report: Center of Implant Research

Introduction:

The Center of Implant Research (CIR) of the Clinic of Reconstructive Dentistry at the University of Zurich (UZH) was founded in 2016 as platform offering cutting edge facilities and qualified staff for the support of clinical research in dental implantology. The Center started the first activities in 2017 at both national and international level; after a very intensive operational phase, where it was important to provide the service to keep ongoing projects running and to support starting the new ones, the Center is entering the next step more focused on the strategical and structural development.

Vision:

To improve oral health care globally by development and improvement of clinical therapy in the field of implant and regenerative dentistry.

Mission:

To improve and facilitate global clinical research in implant and regenerative dentistry by providing high quality service structures (qualified staff and cutting-edge infrastructure) to multiple stakeholders like scientists, clinicians, university partners, industrial partners, and regulatory bodies.

Particularly, the Center supports research projects in all phases: from idea development to the performance of the clinical trial and related closing activities (data collection and evaluation) thanks to research expertise and a competent study management staff coordinating all collaborations and ensuring high standards in the performance of the clinical studies.

Activities and Research:

The remarkable achievements and development of the CIR on a national and international level have asked for a new organizational structure with a formation of a new managing board since June 2023.

The board consists of 4 members of the Clinic of Reconstructive Dentistry with different backgrounds, experiences, and expertise (Fig1). This diversity brings varied perspectives to the decision-making process and enhances the board's ability to address complex challenges.

The board meets regularly to discuss and approve strategic goals in accordance with the mission and vision of the CIR.

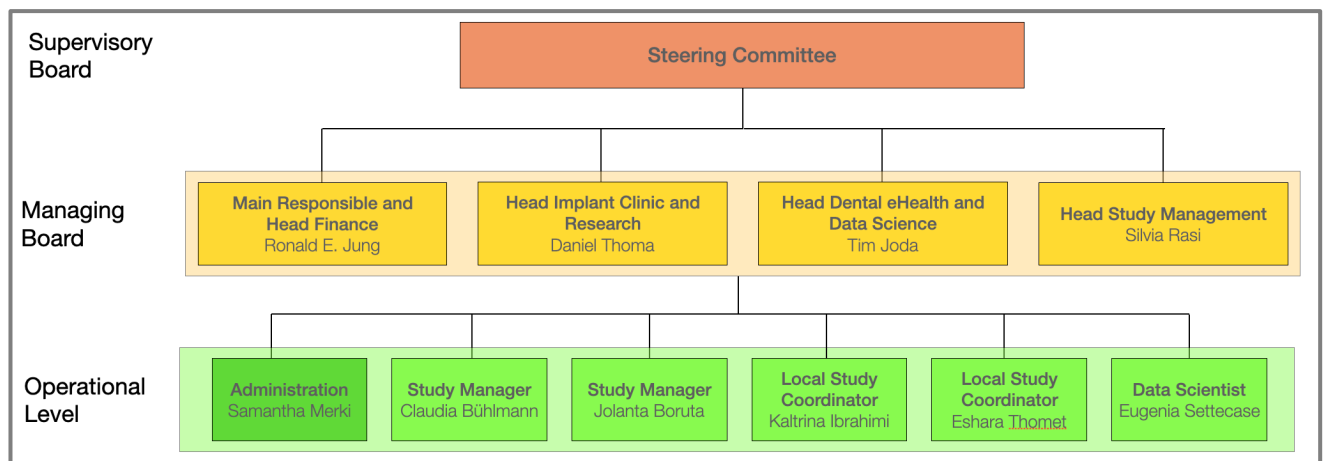


Fig.1

Although implant and regenerative dentistry are the main research topics of the CIR, recent trends in the dental care have prompted the exploration of three new research areas:

- Epidemiological studies investigating the prevalence, distribution, and determinants of oral health conditions within large populations. This kind of investigations can support researchers to obtain valuable evidence-based insights into dental care on a broader scale. In this context CIR has supported in the preparation of an epidemiological survey aimed to investigate oral health-related quality of life (OHRQoL) in elderly population (approximately 3'500 subjects).
- Peri-implant health through analysis of crevicular fluids analysis. Currently, researchers are focused on exploring crevicular fluids surrounding dental implants as valuable source of biomarkers indicating possible local inflammatory response and microbial activity. In collaboration with the Karolinska University of Gothenburg, procedures for fluids collection are being established and will be implemented in upcoming projects in the very near future.
- Patient involvement in decision making. In an era of patient-centered healthcare, involving patients in decision-making processes is becoming an essential step in the planning phase of research projects. To integrate this innovative approach into the research strategy of the clinic for reconstructive dentistry, a dedicated working group has been formed.

The availability of huge amount of data on implants placed over the last 20 years has encouraged the set-up of an internal implant registry providing comprehensive details on surgical procedures, implant types and sizes as well as timepoints of the implantation. The registry, even in a very simple form, has raised the interest of external stakeholders showing the importance of its further development. A step towards enhancing the registry's capabilities occurred in the latter half of 2023 with the recruitment of a skilled data scientist who definitively contributed to professionalize and improve the database. The next step would be to integrate the huge amount of data coming from the several clinical studies into the implant registry.

In comparison to the previous annual report, the count of international studies (32) and of the local running trials (30) has remained consistent. However, the year 2023 was of significant productivity in terms of preparation and planning of new research projects. Notably, 9 new clinical studies were successfully "launched" and 6 of them already received approval from the local Ethics Committee and are scheduled to start in the clinic at the beginning of 2024. This impressive progress was made possible by the valuable support of three research assistants, who will work for the clinic until 2025 and will be mainly focused on the preparation of research protocols and data analysis.

As part of strategic expansion, CIR has started developing a robust national network in addition to the existing international one. This national network will be specifically composed of private practices led by dentists who have received education at the clinic for reconstructive dentistry of the university of Zurich.

The vision behind this initiative is to create a cohesive and collaborative network of dental professionals who are interested in supporting research projects and learning how to do research by taking advantage of the services offered by the CIR.

In April 2023 the first information meeting took place and since then already 2 local private practices have been involved in clinical studies.

The fourth Steering Committee meeting took place on 6th of July 2023. The board was informed about the new structure of the CIR and given an update on the ongoing activities and financial situation. The meeting provided a very constructive platform for strategic discussions, decision -making and future planning.

Center of Implant Research – Summary

- Establishment of a new managing board since June 2023.
- Investigation of three new research areas: a) epidemiological studies; b) peri-implant health; and c) patient involvement in decision making.
- Set-up and further improvement of an internal implant registry.
- Preparation of nine new clinical studies since last update (2022).
- Development of a national collaborating network.
- Achievement of a large Innosuisse competitive grant (1'900'000 CHF) in collaboration with University of Basel.

