

“BioPersMed cohort”: an outstanding interdisciplinary sample collection at Biobank Graz

“BioPersMed” (Biomarkers for Personalised Medicine in Common Metabolic Disorders)

Funded by the national research and technology programme COMET (Competence Centers for Excellent Technologies), this prospective cohort comprises a huge number of samples and data collected since 2010 and is still ongoing. The aim is to detect and define specific characteristics and personalized biomarkers of patients at risk for cardiovascular and metabolic diseases and to follow them for future developments.

The BioPersMed cohort includes the important research areas: **endocrinology & metabolism** and **cardiology**. Diabetes, fatty liver disease, osteoporosis or cardiovascular diseases are only some of the topics in the focus of this cohort.

Key in personalised medicine is to identify and validate biomarkers (e.g. systemic measurements of proteins or genetic information and imaging markers (e.g. via ultrasound or MRT) or functional characteristics e.g. oral glucose tolerance tests, exercise testing, vascular and DXA (bone and body composition) data) in individual patients to assign their disease risks and outcomes. Measurability and reproducibility are indispensable requirements for these high-end techniques. Therefore, high quality samples collected, stored and handled through a sophisticated biobank are a prerequisite.

The perfect infrastructure for this cohort was set up at the Medical University of Graz: a collaboration of the **study center** (cooperation of all related clinical research fields and patient testing at one location), the **Biobank Graz** (know-how of sample collection, processing, storage and data handling) and the **Center for Medical Research** (development of biomarkers and diagnosis methods at the Core Facilities) with a background of the **University Clinics** and the cooperation of the Labs and Divisions of Endocrinology and Diabetology as well as Cardiology.

Since 2010, **more than 1000 probands** have been seen in already 4 follow-up visits with more than **220.000 samples** collected. The biobank specimen comprise plasma, serum, buffy coat and urine which are stored at -80°C with 24/7 temperature surveillance, as well as the according clinical data including a large set of metabolic, cardiovascular, hormonal and general lab and imaging parameters.

The cohort will be further developed including new tests of the probands, e.g. scientific biomarker investigations in prevention (retrospective analysis of the health evidence), diagnosis and monitoring (prospective follow-up analysis) are ongoing.

The project group is open to cooperate with researchers from any organisation worldwide in comprehensive and innovative research projects.

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