

C.1. DESCRIPTION FOR THE GENERAL PUBLIC (IN ENGLISH)

Patients who have lost all renal function require dialysis to survive. The procedure of hemodialysis filters the patient's blood from toxic metabolites and assures survival until a suitable donor is found. However, treatment with hemodialysis has a profound impact on the patients' metabolism – these complications manifest in the form of anemia, increased cardiovascular risk, depression and profound malnutrition. Lack of proteins exacerbates the clinical condition of patients undergoing hemodialysis, which lead to advocate dietary interventions – meals – to be given before or during the hemodialysis procedure. In order to evaluate whether these interventions are efficient however one needs objective biomarkers – indices of nutritional status. Our project tackles the problem of malnutrition in patients treated with hemodialysis with a two-pronged approach. On one hand, through a sophisticated metabolomic high-throughput profiling, we will identify robust and biologically applicable biomarkers of nutritional status allowing us to objectively assess the patients' malnutrition. The second phase of the project will consist of the evaluation how an individually tailored dietary intervention will affect the patients' nutritional condition. The innovative aspect of the study is thus evident as it combines a novel, innovative biological tool and applies it to solve a clinically-pertinent challenge. Therefore, the project's results may ultimately alter the clinical practice and contribute towards better monitoring of nutritional status of patients treated with hemodialysis.