

Introduction

Perturbations of energy homeostasis (such as obesity and cachexia) are global public health issues worldwide as they affect the health and quality of life of the population.

Understanding the pathophysiology of this systemic diseases is of critical importance for the development of future therapeutic interventions to improve clinical outcomes.

The multi-organ nature of the pathophysiology of obesity and cachexia presents a unique challenge. Total body positron emission tomography (PET) imaging provides an important tool to understand multi-organ metabolic function in the whole-body level with tissue-specific resolution and to study organ crosstalk.

Planned Collaboration

To this end, faculty from the UC Davis Departments of Radiology and Nutrition have agreed to develop, test, and apply total body PET imaging in conjunction with oral or intravenous ¹⁸F-fluorodeoxyglucose (¹⁸F-FDG) administration to assess glucose kinetics in the whole-body level with tissue-specific resolution.

Planned Collaboration

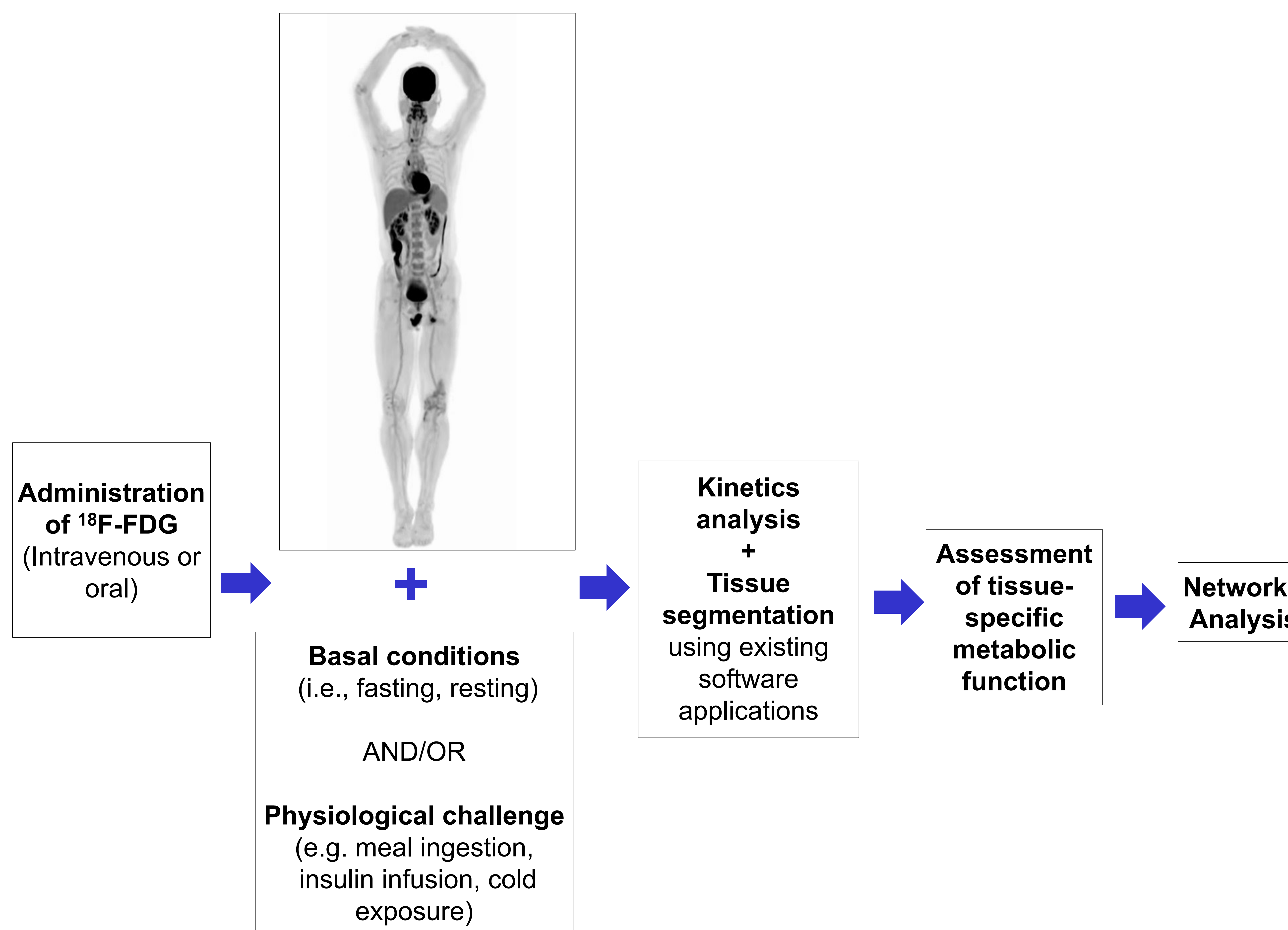


Figure 1. Overview of proposed workflow.

Impact

Developing and establishing the methods needed for the visualization and quantification of whole-body metabolic function with tissue-specific resolution using total body PET will provides essential information to better understand disease physiology and potentially develop diagnostic and therapeutic modalities.

Further Study

We are currently in processes of implementing and designing studies aiming to implement the proposed workflow in clinical trials conducted in healthy individuals, but also in patients with metabolically unhealthy obesity, cancer and psoriasis.

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