Do our muscles prevent successful dieting?

Background
The world is in the midst of an obesity epidemic and its prevalence continues to increase. Many people who seek to lose weight have initial success, but weight loss can stagnate and weight regain often occurs. As humans restrict their calories to lose weight the body can undergo metabolic changes that lower the resting and non-resting rates of energy expenditure. These metabolic changes can unfortunately inhibit weight loss. Recent studies have highlighted the role of skeletal muscle, and in particular, one protein called myosin, in regulating basal energy (ATP) consumption.

The project
You will investigate the role of skeletal muscle and myosin in the regulation of metabolism and the changes that occur following calorie-restriction using relevant animal models. At the end of this project, you should be able to: (1) handle/process muscle tissue; (2) master state-of-the-art molecular/cell biology techniques; (3) apply unique microscopic techniques; (4) generate and analyze large sets of data; and (5) synthesize the findings by writing a publishable scientific paper. These will help you to become an independent scientist and critical thinker.

The candidate
The project is suitable for a Master thesis in Human Biology, Human Physiology and Molecular Biomedicine. Note that an animal experimental course is NOT needed to participate in this project as mouse muscles have already been harvested and ready to be analyzed.

Place of project and contact information
You will become a member of the Xlab at the Department of Biomedical Sciences: https://bmi.ku.dk/english/research/xlab/ located on the 2nd floor of the Maersk Tower. For more information, please contact Chris Lewis (christopher.lewis@sund.ku.dk).