

MITOEAGLE - WG2

- Data repository in muscle and other tissues

- During the past 10 years, a dramatically increasing number of studies report respirometric data on human muscle tissue (e.g. Christiansen 2015 Am J Physiol)
- Muscle mitochondrial function is particularly studied in genetically engineered mouse models of human diseases (e.g. Jelenik 2014 Diabetes)

*However, despite the many published data, **lack of consistency often precludes quantitative comparison among data sets with permeabilized or homogenized muscle fibres or isolated mitochondria, normalized to either tissue wet weight, dry weight, protein content, citrate synthase activity or other mitochondrial markers.** In the absence of validated conversion factors, these data remain largely unconnected and can only be qualitatively linked.*

The aim of WG2 will be to provide access to complete data sets for post-study statistical analysis and use harmonization tools (WG1) for standardized documentation, to initiate a data repository on muscle tissue from humans and model organisms in health and disease.

Data sets shall be obtained from already published and new studies, prompting participating labs to report experimental details beyond those already published as far as possible (using tools such as PubMed Commons). As a result, specific protocols will be summarized for handling muscle tissue. Depending on specific interests, WG2 may decide to extend their focus to other tissue types.

Management

Tasks:

- Call for participating labs to deliver relevant experimental data on already published studies and to report them in a standardized format.
 - Who has the right to deliver experimental data? Principal investigator?
- Collection and indexing of the data sets as required for statistical analysis.
- Discussion of procedures, protocols and general guidelines.
- Draft a comprehensive review on mt-function in muscle tissue (registration at PROSPERO, link with EQUATOR).

Opening of the database to the research public for data search and moderated entry of new data sets.

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Milestones

- Call for data report delivered.
- Data sets entered in standardized format.
- Summary, interpretation and discussion of data for review.

Deliverables

- A MITOEAGLE database on muscle tissue from humans and model organisms.
- A set of guidelines for future studies on mitochondrial bioenergetics in muscle tissue.
- Draft of review manuscript.