

Panel: Energy Balance

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Diabetes and Energy Balance**

**MMPC National Steering Committee Meeting
University of Washington, Seattle, WA**

PANEL: ENERGY BALANCE

Measurement of Energy Intake

- Considerations

Measurement of Energy Expenditure

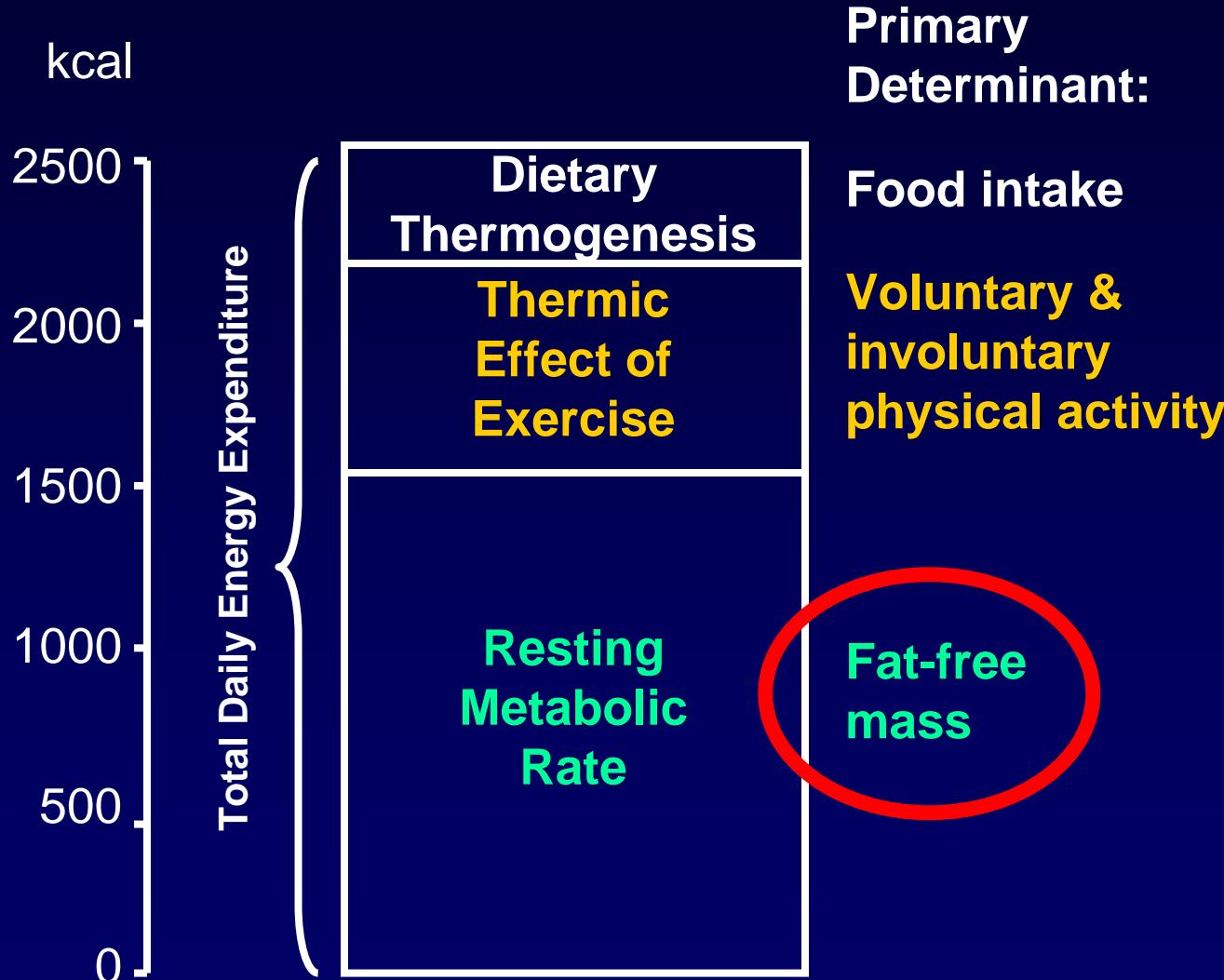
- Introduction
- **Presentation: Normalization of Energy Expenditure**
Karl Kaiyala – University of Washington
- Technical considerations

Energy Intake

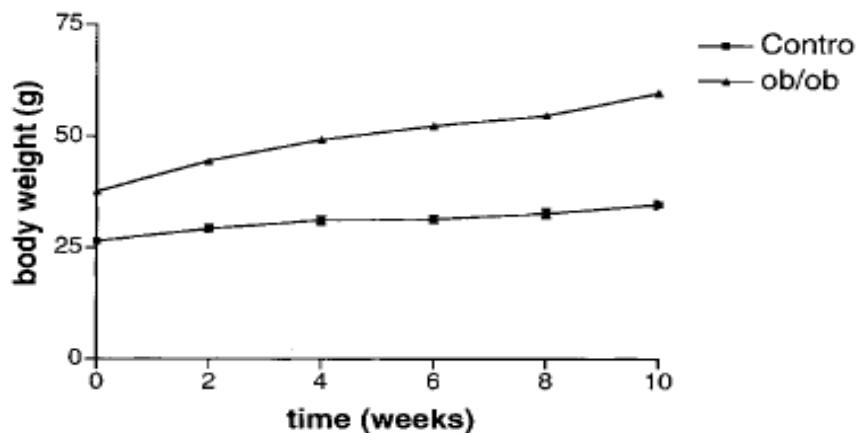
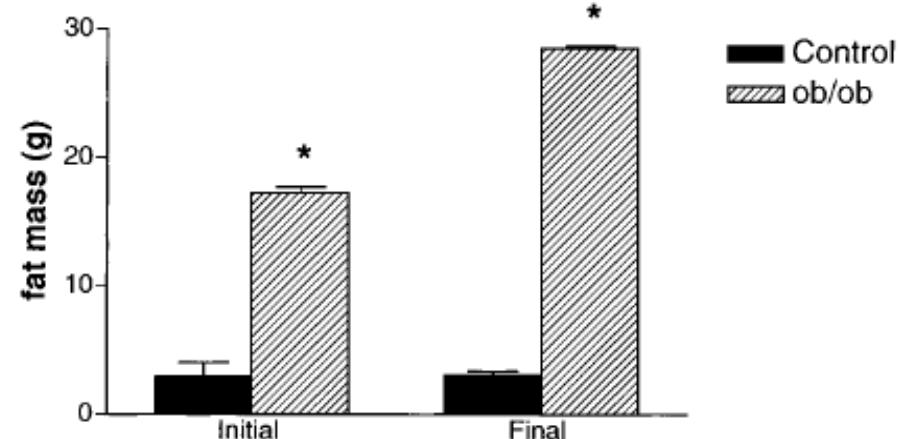
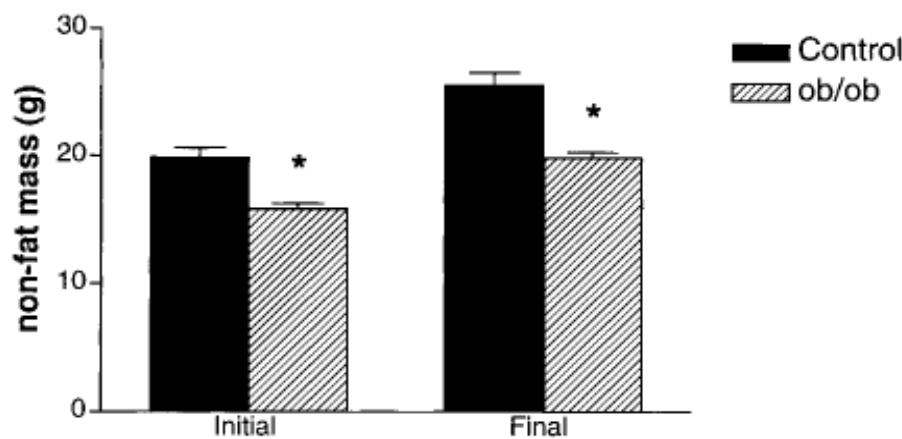
Considerations

- Animals singly housed
- Food intake expressed as total intake
 - not normalized to g/body weight
- For HFD studies, energy intake expressed as kcal, rather than grams

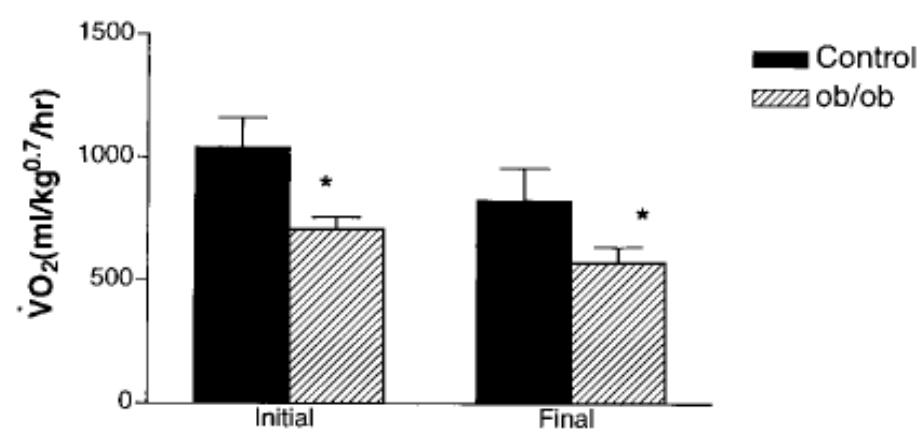
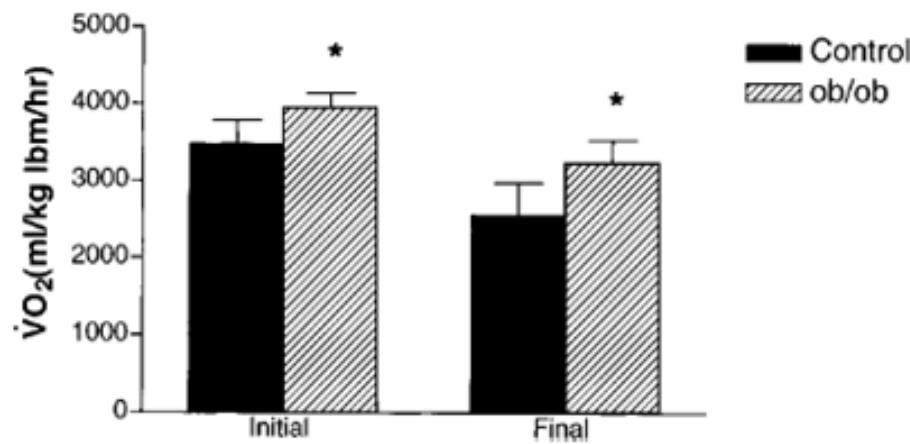
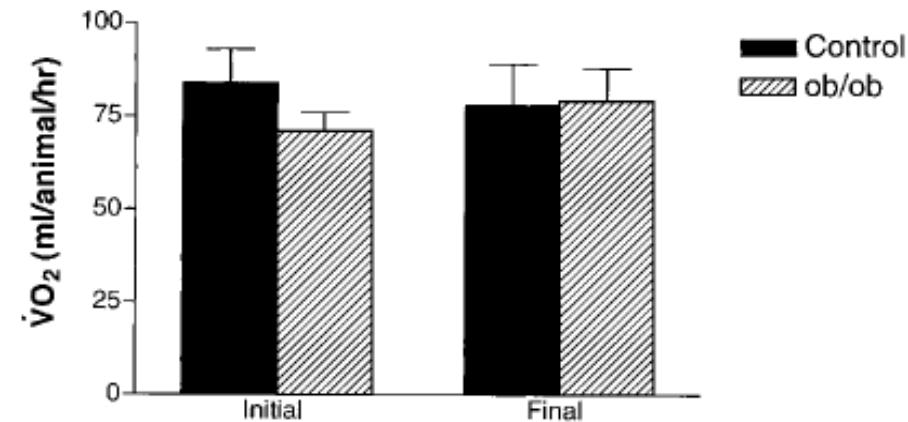
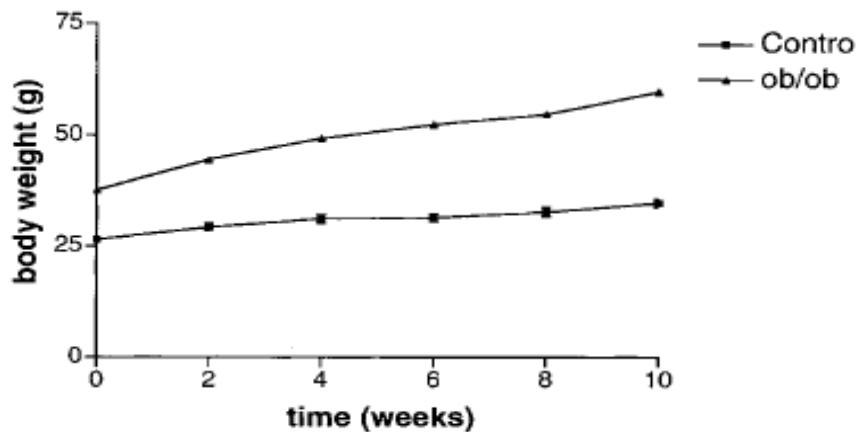
Energy Expenditure



Normalizing Energy Expenditure

A**B****C**

Normalizing Energy Expenditure



QUESTION

What is the most appropriate way to normalize energy expenditure?

Karl Kaiyala

“Normalization of Energy Expenditure”

Measuring Energy Expenditure

Equipment

MMPC	Machine
Seattle	Oxymax (CLAMS), Columbus Instruments
Cincinnati	TSE Systems
Vanderbilt	Oxymax (CLAMS), Columbus Instruments
Yale	Oxymax (CLAMS), Columbus Instruments
Case-western	Doubly-labeled water

Measuring Energy Expenditure

Considerations

- Temperature
- Measurement of energy expenditure from CO_2 production