

Panel: Energy Balance

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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

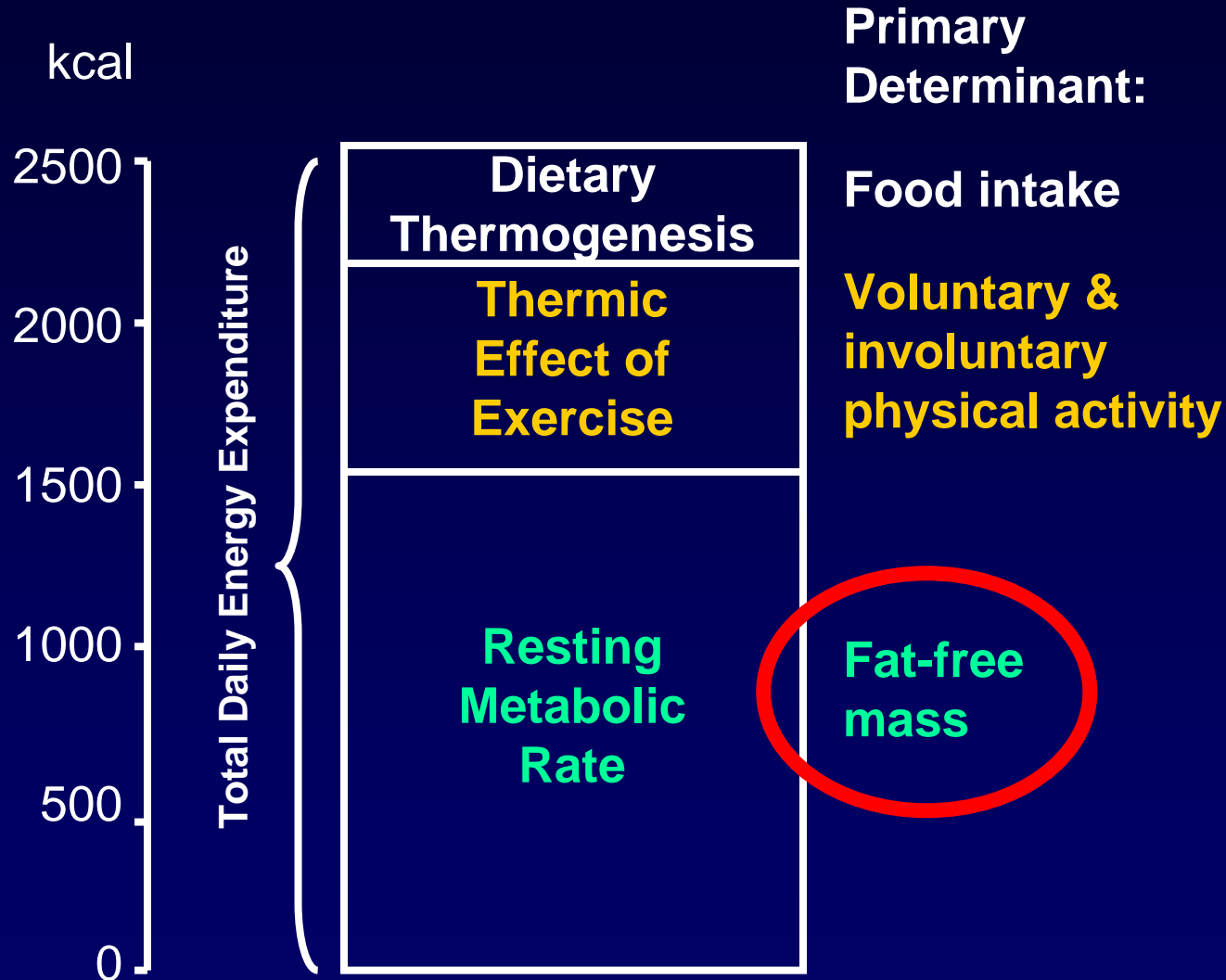


Energy Intake

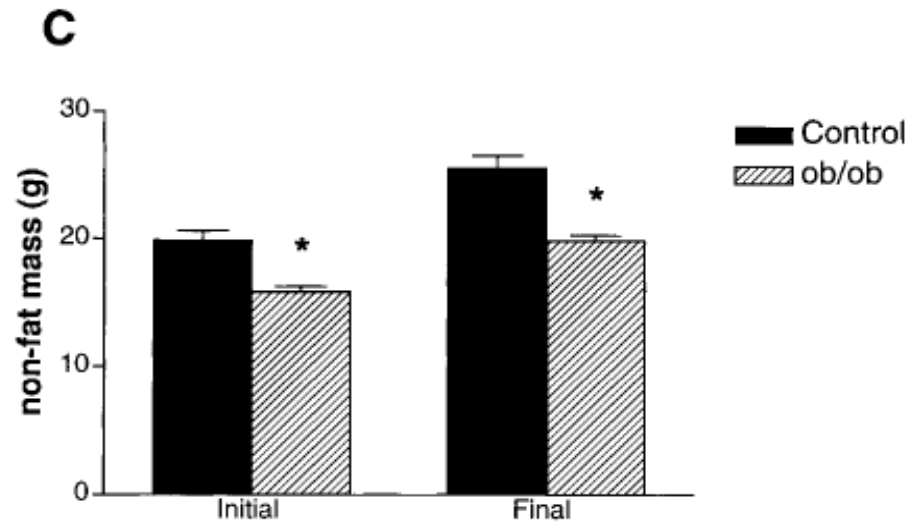
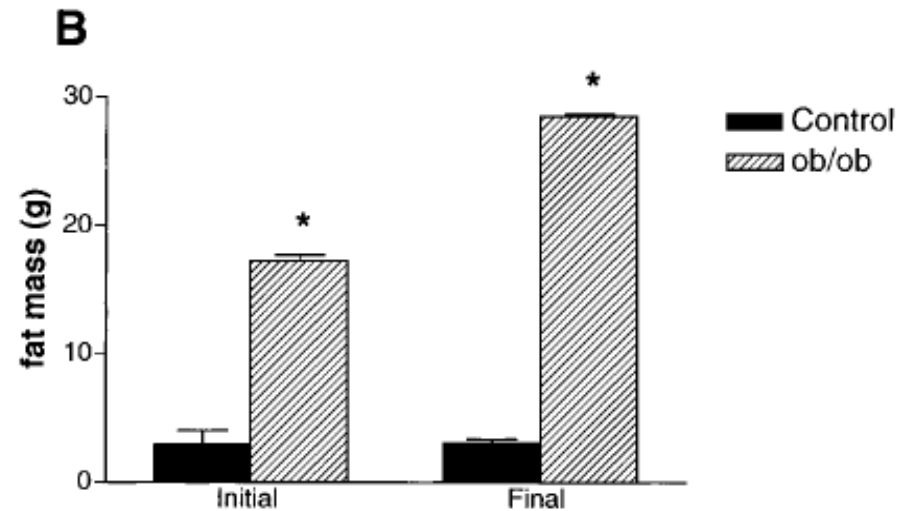
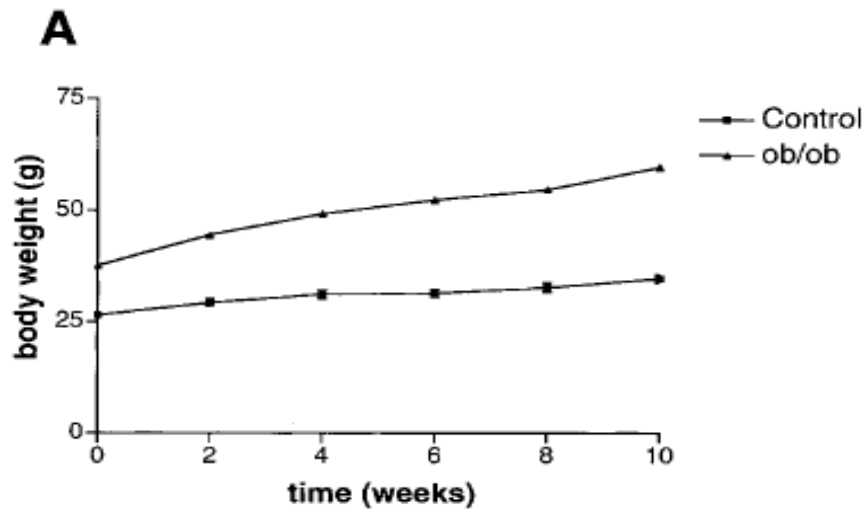
Considerations

- 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

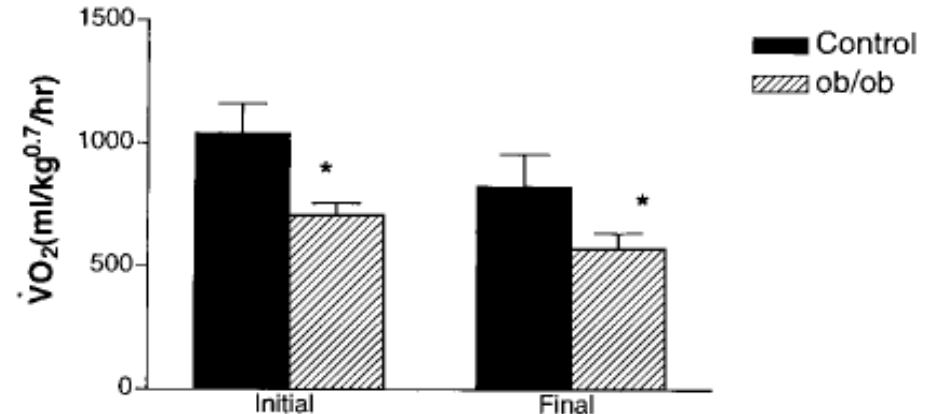
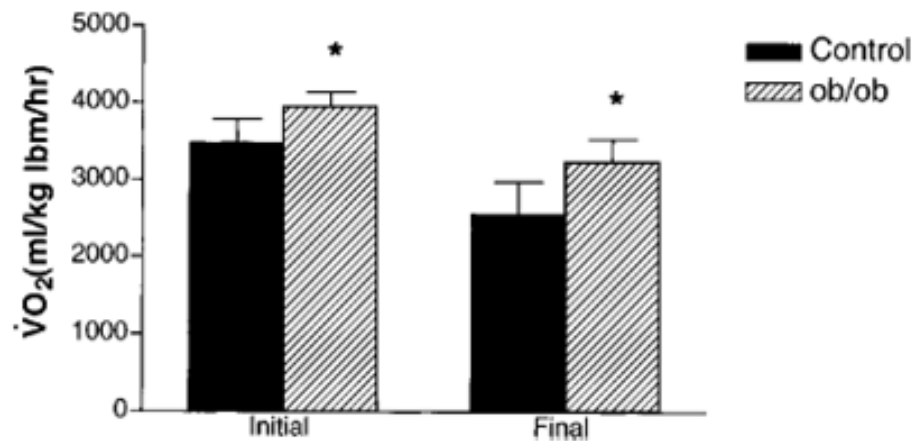
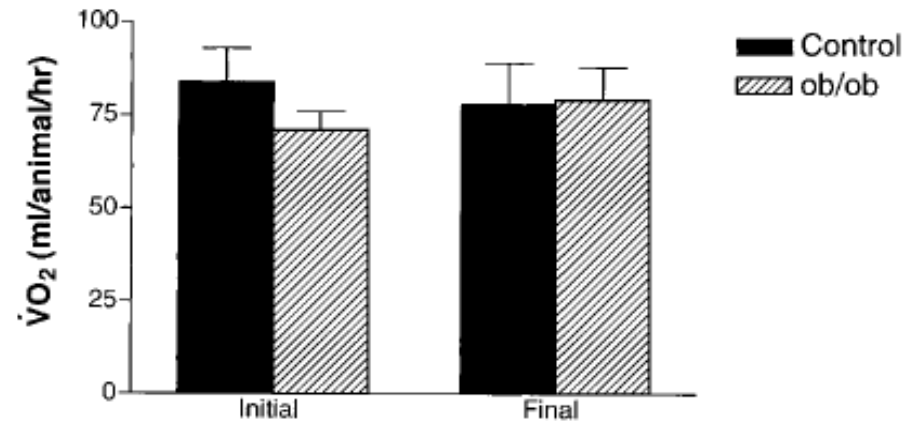
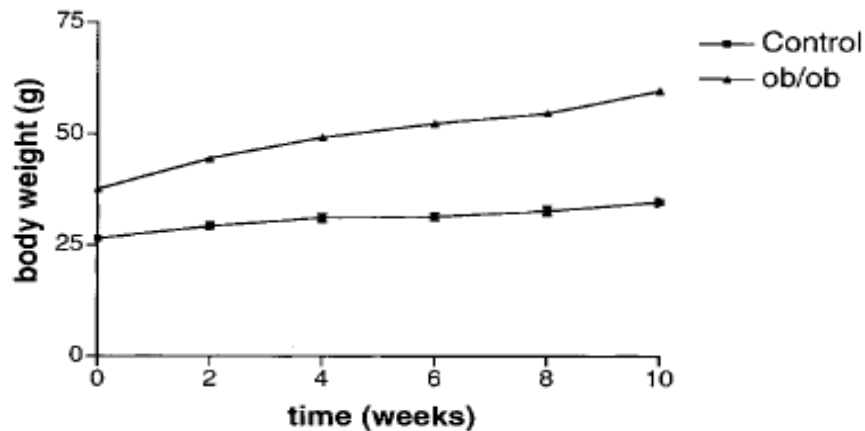
Energy Expenditure



Normalizing Energy Expenditure



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

Seattle

Cincinnati

Vanderbilt

Yale

Case-western

Machine

Oxymax (CLAMS), Columbus Instruments

TSE Systems

Oxymax (CLAMS), Columbus Instruments

Oxymax (CLAMS), Columbus Instruments

Doubly-labeled water

CLAMS = Comprehensive Lab Animal Monitoring System

Measuring Energy Expenditure

Considerations

- Temperature
- Measurement of energy expenditure from CO₂ production