

Meat proteins – part of a healthy lunch

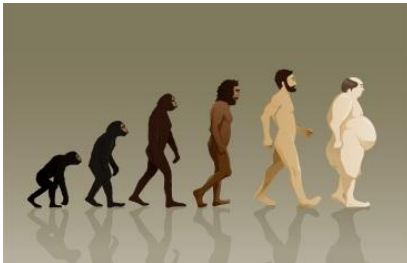
Ursula Kehlet
Danish Meat Research Institute
unk@dti.dk



Meat proteins in the obesogenic world

PROBLEM

Global burden of obesity

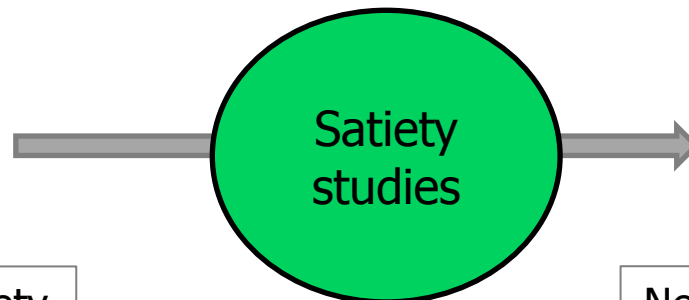


SOLUTION - one of many...

Foods to control appetite



Proteins promote satiety



New meat products or formulations
with satiating effects



Objective

How do high protein meals containing pork affect appetite and energy intake?

Study design

TEST MEALS



High meat protein lunch
Protein: 35E%



Normal lunch
Protein: 15E%

DAY 1



DAY 2



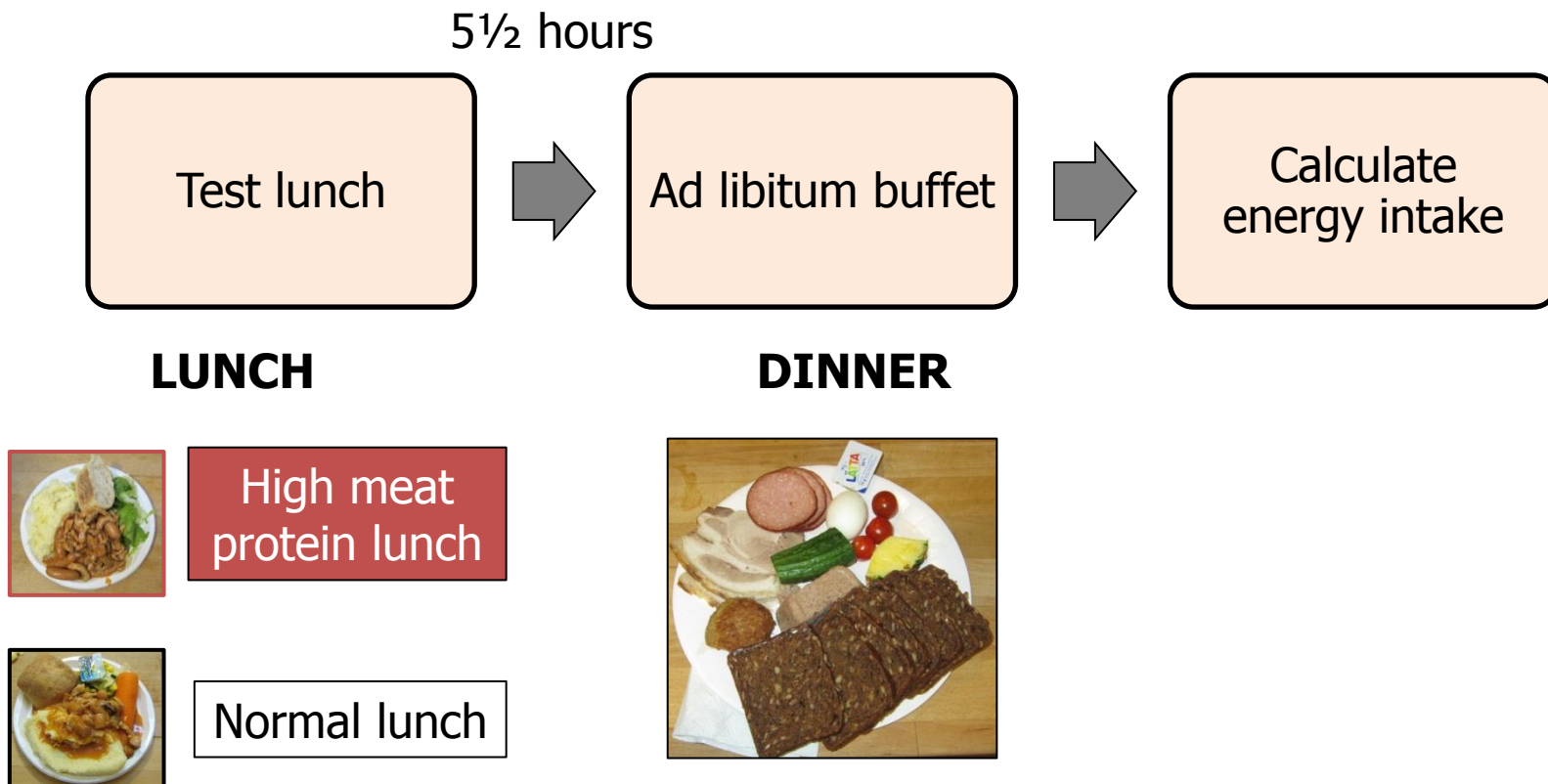
OUTCOME

Ad libitum
energy intake

Appetite
measurements

Repeated for 2 weeks

How to measure *ad libitum* energy intake



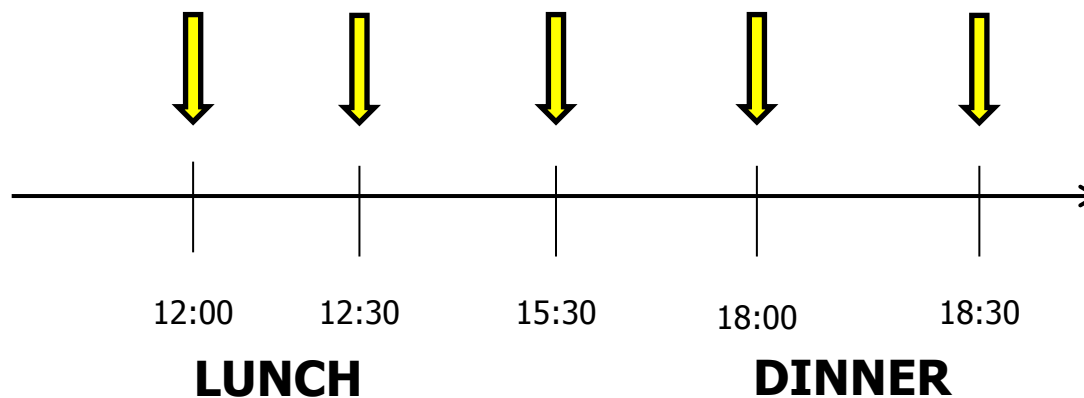
How to measure appetite

How hungry do you feel right now?

I am not at
all hungry

I am
extremely
hungry

Appetite measurements



Study location and participants

Danish boarding school

134 students (15-16 years old)

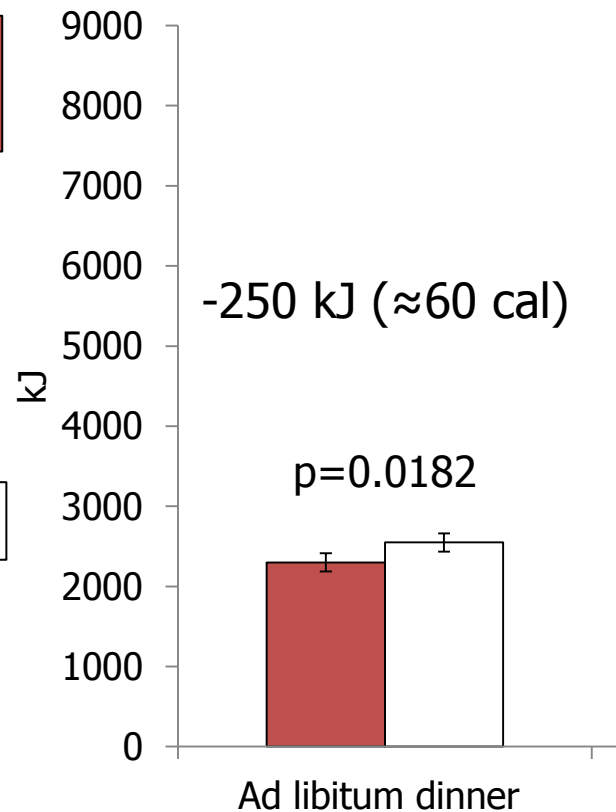


Results – energy intake

High meat
protein lunch

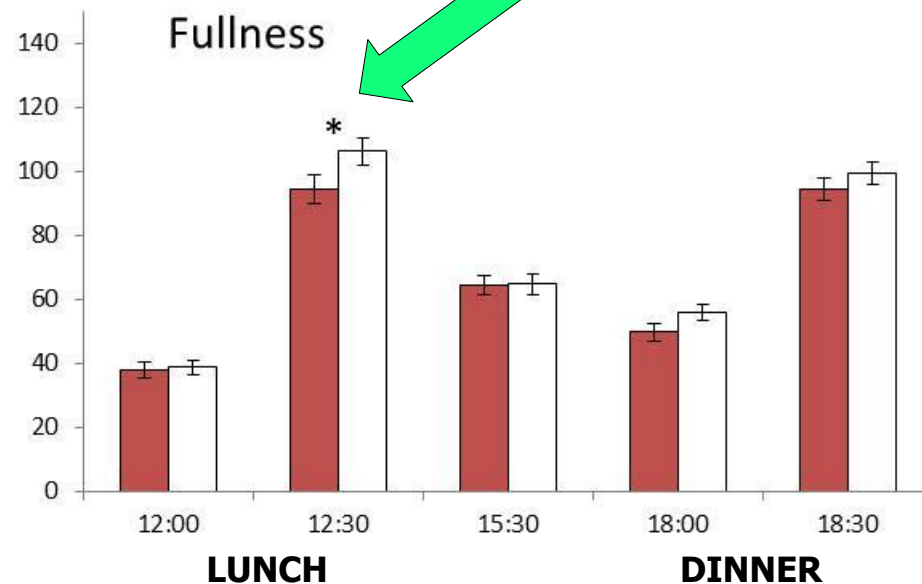
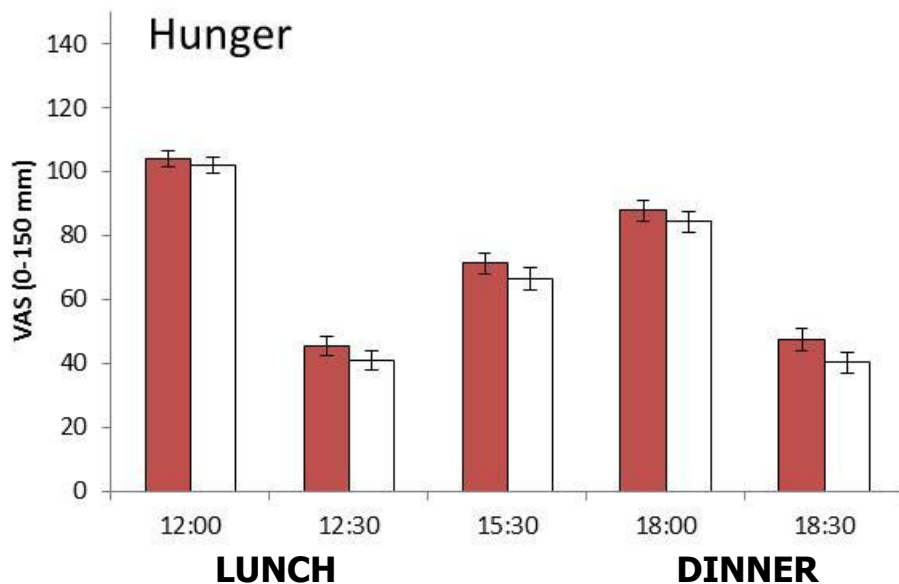


Normal lunch



Results – appetite measurements

Not in line with the reduced energy intake!



Our results in the obesogenic world

per day -250 kJ (\approx 60 cal)



per year **2.9 kg weight loss**

How much protein for lunch?

Increase meat intake from

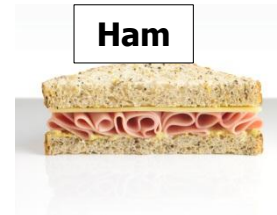


Pork loin



1 slice \longrightarrow 3½ slices

OR

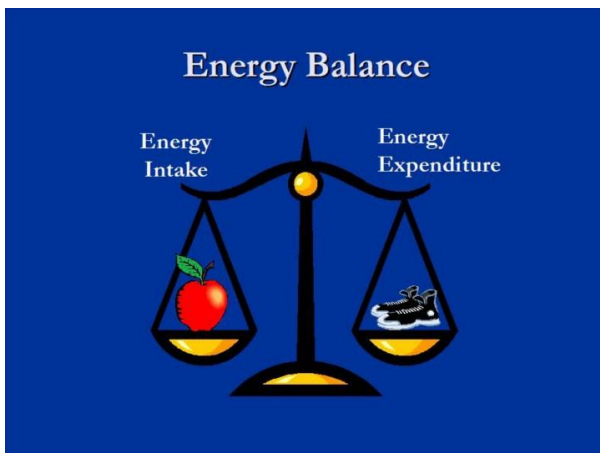


Ham

3 slices \longrightarrow 7 slices



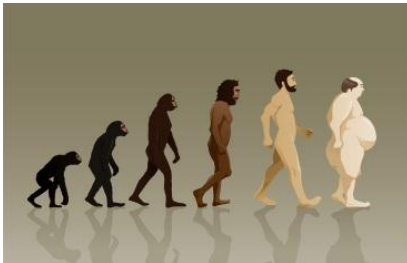
Suppress energy intake
at dinner



New healthy meat products

PROBLEM

Global burden of obesity



SOLUTION - one of many...

Foods to control appetite



Proteins promote satiety

Long term
satiety studies

Combination of
meat protein &
dietary fibre



New meat products or formulations
with satiating effects ?



Thank you for your attention!

Poster discussion - board #7
Today 15:00 - 15:30

DMRI contributions to ICoMST 2012



Contact: [Oleus Kehlet](mailto:Oleus.Kehlet@dmri.dk)
 Phone: +45 7220 2020

#112

Serving a high meat protein lunch reduces subsequent energy intake at dinner:

- a randomised trial conducted in a real-life setting

Oursula Kehlet¹, Per B. Brockhoff¹, Mari Ann Tørnøgren¹ and Margit Dall Aaslyng¹

Objectives
 To investigate how high protein meals containing pork affect appetite and energy intake when consumed in a real-life setting.

Materials and Methods

- Crossover study
- 134 students (15-16 years old)
- Conducted at a local boarding school

Table 1. The served lunch meals and their nutritional composition (mean values).

High meat protein lunch	Normal lunch
Pork spaghetti with meat and potatoes and salad	Pork spaghetti with mashed potatoes and salad
Energy: 2235 kJ Protein: 36.1% Carbohydrate: 33.6% Fat: 11.6%	Energy: 2480 kJ Protein: 17.0% Carbohydrate: 51.6% Fat: 12.6%

Results

Figure 1. Effects of lunch meal (high meat protein lunch vs. normal lunch) on energy intake. A significant difference ($p < 0.05$) between the lunch meals is indicated by *.

Figure 2. Hunger and fullness ratings (means \pm SE) for the two lunch meals.

No significant effects could be demonstrated on hunger or fullness ratings. One exception was after the lunch, as the high meat protein lunch decreased fullness ($p = 0.046$).

Conclusion
 High protein lunch meals with pork suppress energy intake at dinner

© Danish Meat Research Institute, DE 4000 Buxtehde, www.DMRI.dk
 1 Technical University of Denmark, DK 2800 Lyngby

Financial support of the study: the Pig Levy Fund



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