

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

– a randomised trial conducted in a real-life setting

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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

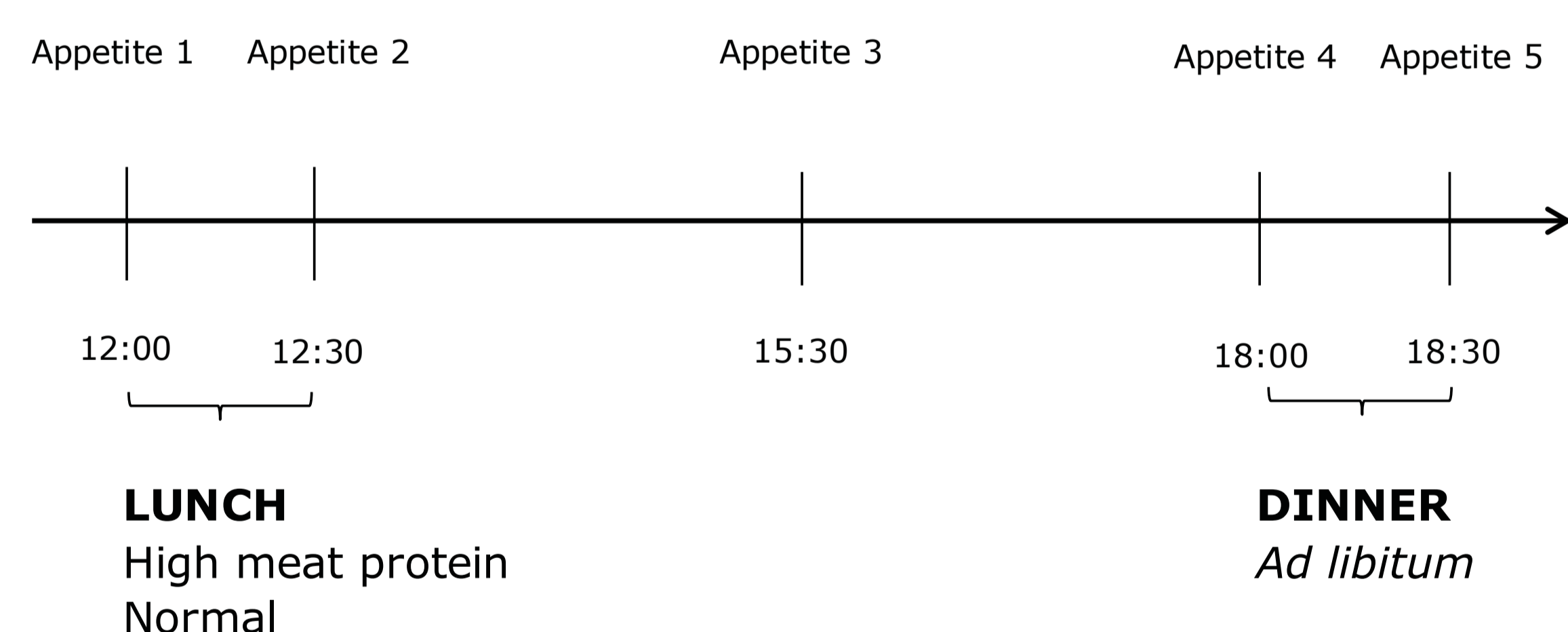




Table 1. The served lunch meals and their nutritional composition (mean values).

High-meat protein lunch	Normal lunch
Pork stroganoff with mashed potatoes and salad	Pork stroganoff with mashed potatoes and salad
	
Energy: 2235 kJ Protein: 36 E% Carbohydrate: 33 E% Fat: 31 E%	Energy: 2480 kJ Protein: 17 E% Carbohydrate: 51 E% Fat: 32 E%

Results

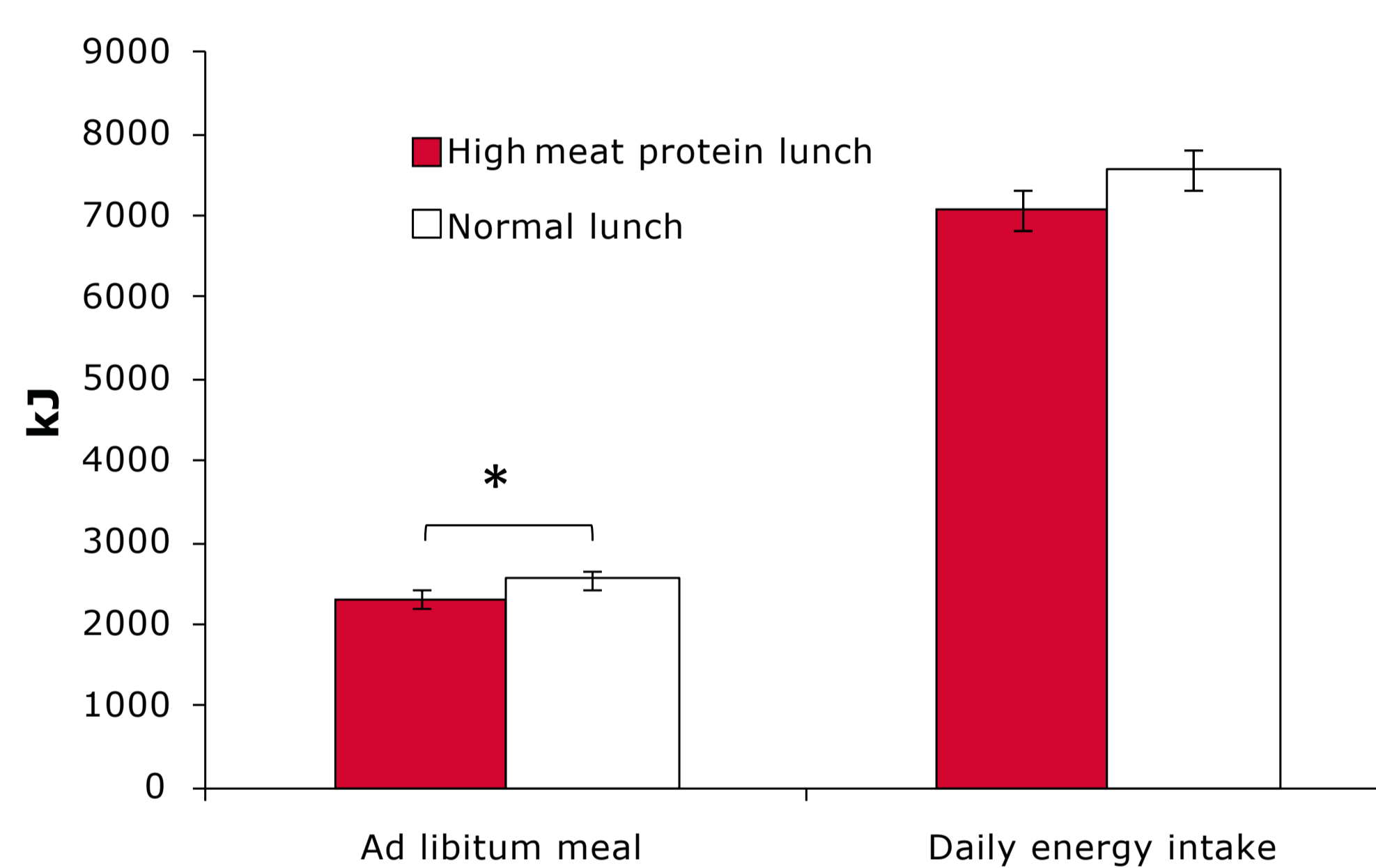


Figure 1. Effects of lunch meal (high meat protein lunch vs. normal lunch) on energy intake. A significant difference ($p < 0.05$) between the lunch meals is indicated by a *.

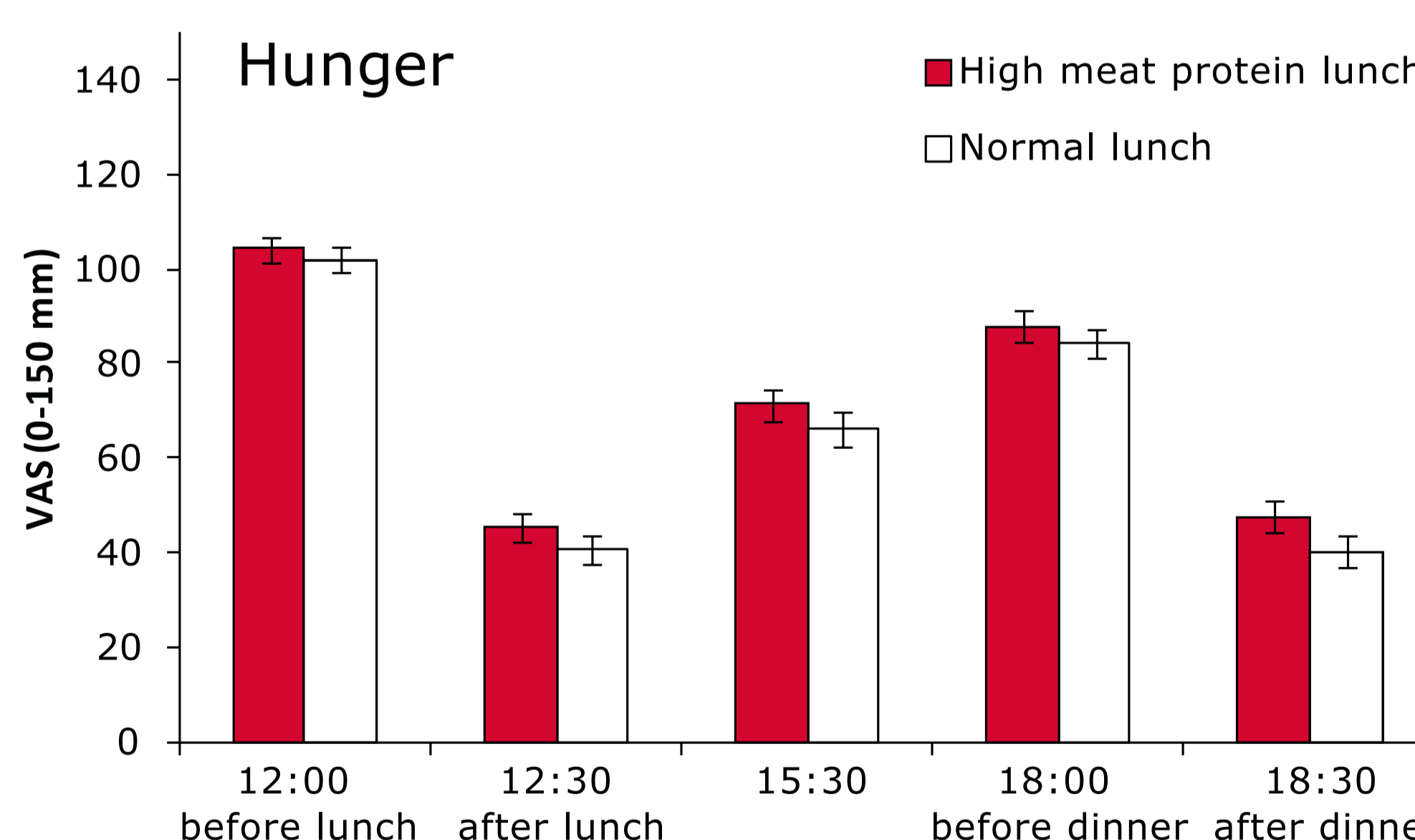
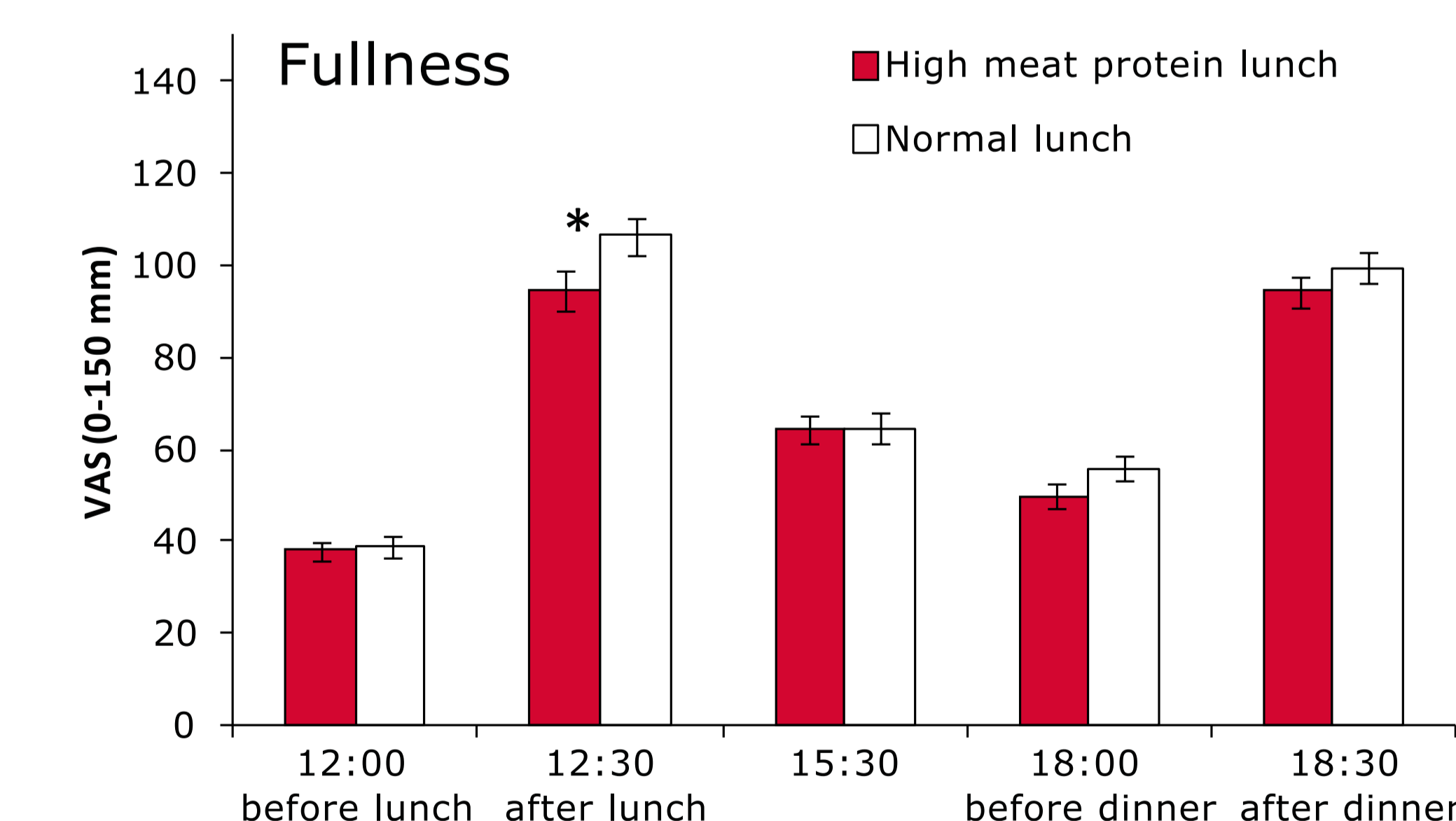


Figure 2. Hunger and fullness ratings (means \pm SE) for the two lunch meals.

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 ($p = 0.0460$).

The lunch meal had a significant effect on the *ad libitum* dinner energy intake ($p = 0.0182$). The high meat protein lunch resulted in a lower energy intake than the normal lunch (-250 kJ).

A tendency towards a significantly reduced daily energy intake was found when the high meat protein lunch was consumed ($p = 0.0561$).



Conclusion

High protein lunch meals with pork suppress energy intake at dinner

