

Joint meeting of the Société Française de Nutrition and The Nutrition Society, 6–7 December 2007

## Changes in appetite, mood and emotions towards food during the day in normal-weight and obese French women

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Food intake is regulated by energy requirements, on the one hand, and by mood and liking of food, on the other. The aim of the present study was to investigate mood, appetite and emotions towards pleasant and less-pleasant foods during the day. Of the thirty-four women (27 (SD 4) years) who participated, twenty were of normal weight (BMI 21.1 (SD 1.60 kg/m<sup>2</sup>) and fourteen were obese (BMI 34.3 (SD 3.0) kg/m<sup>2</sup>).

Participants filled in three questionnaires at five different times during the day: 07.00, 09.00, 11.30, 13.30 and 16.30 hours. The first questionnaires dealt with their positive (content, happy, excited and caring) and negative moods (tired, sad, nervous and gloomy), the second with their hunger perception and the third with the emotions they felt towards pleasant (cake, chocolate and Saint Nectaire cheese) and less-pleasant food products (kidneys, tripe and green cabbage). For this last evaluation women were instructed to imagine that the food was actually in front of them and that they were asked to eat it. Mood, hunger and emotions towards food were assessed on four-point, seven-point and five-point scales respectively. ANOVA models (repeated measurements, GLM procedure of SAS; SAS Institute Inc., Cary, NC, USA) were used in which the successive evaluations of mood, hunger and emotions by a given subject were considered as repeated measurements.

The mood of normal-weight women was more positive than that of obese women over time ( $F$  6.28,  $P=0.01$ ); they felt themselves to be more caring towards others and excited. Moreover, mood improved, mainly between 07.00 and 09.30 hours (after breakfast); more in normal-weight women than in obese women. Hunger was higher in normal-weight women than in obese women ( $F$  6.18,  $P=0.01$ ), particularly before breakfast and at the end of the afternoon. Emotions felt towards food varied during the day in both normal-weight women and obese women. In relation to pleasant foods, they were liked as much by obese women as by normal-weight participants. After lunch, however, obese women felt less satisfaction and interest towards pleasant foods than normal-weight women. The least-pleasant foods elicited the highest appetite and liking before lunch in all the participants.

Neither hunger nor food liking appears to be responsible for the intake of excessive quantities of food in obese participants. It is more likely that negative mood influences deviant behaviour such as excessive food consumption.