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MEAL PATTERNS AND OBESITY - does snacking play a role?

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ABSTRACT

Aims: To describe meal patterns, especially snacking, in obese subjects compared to a reference population and to evaluate the importance of meal frequency in obesity treatment.

Methods: Two cross sectional studies. 1. Women from the Swedish Obese Subjects (SOS) registry study (n=83) and SOS reference study (n=94); 2. Obese men (n=1891) and women (n=2368) from the XENDOS study (XENical in the prevention of Diabetes in Obese Subjects) and SOS reference study, men (n=505) and women (n=587). 3. A retrospective analysis on the relation between meal patterns and weight loss and adherence to life style recommendations including men (n=674) and women (n=705) who completed XENDOS four-year clinical trial. 4. A one year clinical trial on weight loss in men (n=36) and women (n=104) who were randomised to two regimes; 3 meals and no snacks (3M) and 3 meals and 3 snacks (3+3M). In all studies habitual meal and dietary intake were measured using a meal pattern questionnaire and SOS dietary questionnaire.

Results: Obese women had a meal pattern deviating from the reference women with more snacks especially during afternoon and evening. Obese subjects were more frequent snackers than reference subjects and women were more frequent snackers than men. Snacks were positively related to energy intake irrespective of physical activity, especially energy from sweet, fatty food groups. After treatment energy intake did not increase with increased snacking frequency. In men adherence to the recommended 3 meals and 2-3 snacks/day was positively related to weight loss but not in women. Weight loss was related to decreased fat intake, increased fibre intake and extra walking. Patients who completed the one year study changed their snacking frequency in anticipated direction but there was no difference in weight loss between the two groups (3M vs. 3+3M = 4.1 kg ±6.1 vs. -5.9 ±9.4), not significantly different (p=0.31).

Conclusions: Obese are more frequent snackers than reference subjects and women are more frequent snackers than men. High snacking frequency increases energy intake, but in treatment subjects manage to cut down calories despite high snacking frequency. Recommending snacks or not does not influence weight loss. As life style changes are difficult to adhere to it is of utmost importance that recommendations are evidence based.

KEYWORDS meal patterns, meal frequency, snacking, snacks, temporal distribution, obesity, weight loss, obesity treatment, adherence, life style changes