Title: Does meal frequency affect our appetite? – A systematic review over the relationship between meal frequency and appetite in normal weight women and men.

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Background: Overweight is a major problem in today’s society and how often one should eat to maintain a good appetite control is uncertain. One way to approach the problem with overweight and form recommendations on how to maintain a healthy weight could be to reach consensus about the effect of meal frequency on appetite regulation.

Objective: To examine the relationship between meal frequency and appetite.

Search strategy: A systematic literature search was performed in two databases, PubMed and Scopus. Terms used for the search were “meal frequency”, “frequency of eating”, “eating frequency”, “meal pattern”, “appetite”, “satiety”, “hunger”, “appetite regulation”, and “appetite control”.

Selection criteria: Inclusion criteria were human studies, age> 18 years, English, publication year 2000-2017 and appetite measured with a visual analog scale or with a visual analog scale and hormones. Exclusion criteria were studies performed on sick people, individuals with overweight or obesity (BMI>25 kg/m²) and weight loss studies with an energy restriction.

Data collection and analysis: Six studies were examined for quality using SBUs grading template for randomized studies. A grading of the evidence was then performed using a template formed by University of Gothenburg “An overall judgement according to GRADE”.

Main results: The evidence for a relationship between meal frequency and appetite was low (++) measured with subjective markers. For objective markers there was moderate (+++) evidence that meal frequency doesn’t affect appetite. Four of the included studies indicates that a low meal frequency leads to better appetite control while two studies indicates that a high meal frequency is favorable.

Conclusions: The scientific evidence regarding the effect of meal frequency on appetite is heterogeneous. More, larger and longer studies are required.

Keywords
Appetite, meal frequency, VAS, GLP-1 and ghrelin.