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Systematic Literature Review Shows That Appetite Rating does Not Predict Energy Intake

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Self-report ratings of appetite, particularly visual analogue scales (VAS) are commonly used to measure subjective appetite and to assess modifications thereof following an intervention^(1,2). Subjective rated appetite is a widely employed proxy measure for Actual Energy Intake (AEI)⁽³⁾, measurement of which requires greater time and resources. The validity of self-report measures of appetite as surrogate measures of AEI have not been systematically reviewed elsewhere.

To identify the corpus of papers assessing both self-reported appetite and AEI in the same trial and to establish whether self-report scales reliably predict AEI.

A literature search was undertaken spanning 1999 to 2015 identifying studies recording both VAS ratings and AEI, generally in response to a nutrient or food intervention. Outcomes were pre-defined as there being agreement between self-reported appetite and AEI (link) or no agreement between self-reported appetite scores and AEI (no link). The presence of statistical (direct) comparison between the two methods was also recorded, the type of intervention, subject or patient were also noted. Each paper was scored independently by two authors.

462 papers were included in this review. Appetite scores failed to correspond with AEI in 51.3 % of total studies. Only 6 % of studies evaluated directly compared the two measures statistically. A Chi Squared test revealed a significant departure ($P < 0.001$) from observed and expected frequencies for direct assessment of a link when studies were separated by 'intervention type'. This effect appears to be, in part, due to the use of pharmaceutical interventions and particularly where satiety regulating hormones were manipulated.

The very substantive corpus identified in this review allows us to conclude that self-reported appetite ratings of appetite do not reliably predict AEI. Caution should be exercised when deriving conclusions based from self-report appetite data alone in relation to prospective energy intake.

1. Blundell J, de Graaf C, Hulshof T, *et al.* (2010) *Obesity Rev* 11:251–70.
2. Avena NM, Murray S, Gold MS. (2013) *Front Psychol* 4:721.
3. Flint A, Raben A, Blundell JE, *et al.* (2000) *Int J Obesity* 24:38–48.

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