Is Plate Clearing a Risk Factor for Obesity?  
A Cross-Sectional Study of US Adults

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Supported by  
Wellcome Trust  
UK Centre for Tobacco & Alcohol Studies
The Obesity Epidemic & Energy Balance

![Balance Scale Diagram]

- **CALORIES IN**: Food, Beverages
- **CALORIES OUT**: Body functions, Physical activity

Red circle highlights: Food
Identifying Eating Behaviours Which Promote Over-Consumption

A systematic review and meta-analysis examining the effect of eating rate on energy intake and hunger¹,²,³

Eric Robinson, Eva Almiron-Roig, Femke Rutters, Cees de Graaf, Ciarán G Forde, Catrin Tudur Smith, Sarah J Nolan, and Susan A Jebb
A New Food Environment

The Contribution of Expanding Portion Sizes to the US Obesity Epidemic

Lisa R. Young, PhD, RD and Marion Nestle, PhD, MPH

Additional article information
Some eating behaviours aren’t ideal in our new food environment?
Plate clearing as an eating behaviour?

Our aims

Q) Does the tendency to ‘plate clear’ act as a risk factor for obesity?
Q) Who is a plate clearer?

Large online study with 1000 US adults
Measured self-reported plate clearing and BMI.
Method

- Amazon Mechanical Turk

- We devised a self-report measure of plate clearing:
  ‘I always tend to clear my plate when eating’
  ‘I normally plan to finish everything on my plate’
  ‘My plate is normally empty when I finish eating’

- Self reported weight and height to calculate BMI

- We measured and planned to control for a wide range of demographic and behavioural variables which may act as confounders
Participants

\[ n = 993 \]
All US adults

<table>
<thead>
<tr>
<th>Age</th>
<th>Ethnicity</th>
<th>Education level</th>
<th>Income</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24 yrs old</td>
<td>Caucasian</td>
<td>Did not complete high school</td>
<td>&lt;25,000</td>
<td>&lt; 18.5 underweight</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>High school</td>
<td>25-39,999</td>
<td>18.5-24.9 healthy</td>
</tr>
<tr>
<td>25-44 yrs old</td>
<td>Asian</td>
<td>Some college</td>
<td>45-49,999</td>
<td>≥ 25-29.9 overweight</td>
</tr>
<tr>
<td>45-64 yrs old</td>
<td>Hispanic</td>
<td>Bachelor’s degree</td>
<td>50-74,999</td>
<td>≥ 30 obese</td>
</tr>
<tr>
<td>65 + yrs old</td>
<td>Mixed race</td>
<td>Master’s degree</td>
<td>75-99,999</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Doctoral or professional degree</td>
<td>≥100,000</td>
<td></td>
</tr>
</tbody>
</table>

Values correspond to number of participants and percentage of total sample in brackets.
Main Results

*r* = 0.24 is the unadjusted association between plate clearing and BMI
Who is a plate clearer?

<table>
<thead>
<tr>
<th>TABLE 3 Results of stepwise linear regression examining demographic predictors of plate clearing tendencies score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unstandardized β coefficient</strong></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>BMI Pla</td>
</tr>
<tr>
<td>Annual income</td>
</tr>
</tbody>
</table>

Most likely to be a plate clearer –

- Males
- Poor people
Conclusions & Discussion

We may have identified an eating behaviour measure predictive of risk of obesity & intuitively it make sense.....

- We may just have found a sporadic correlation
- We may just be describing backwards causation

We may now want to characterize:

- Who?
- Where and why?
- Effect on energy intake? Context specific?
- Consequences
Is Plate Clearing a Risk Factor for Obesity? A Cross-Sectional Study of Self-Reported Data in US Adults

Eric Robinson¹, Paul Aveyard² and Susan A. Jebb²

**Objectives:** Identifying eating behaviors which contribute to excess weight gain will inform obesity prevention strategies. A tendency to clear one’s plate when eating may be a risk factor for obesity in an environment where food is plentiful. Whether plate clearing is associated with increased body weight in a cohort of US participants was examined.

**Methods:** Nine hundred and ninety three US adults (60% male, 80% American European, mean age = 31 years) completed self-report measures of habitual plate clearing together with behavioral and demographic characteristics known to be associated with obesity.

**Results:** Plate clearing tendencies were positively associated with BMI and remained so after accounting for a large number of other demographic and behavioral predictors of BMI in analyses [$β = 0.18$, 95% CIs = 0.07, 0.29, $P < 0.001$]; an increased tendency to plate clear was associated with a significantly higher body weight.

**Conclusions:** The tendency to clear one’s plate when eating is associated with increased body weight and may constitute a risk factor for weight gain.