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Using Contrasting Colors to Reduce Serving Sizes and Lose Weight

Choosing the right size and color of your bowls and plates could help you eat less, according to a new study in the [Journal of Consumer Research](#).

“The bigger your dinnerware, the bigger your portion. If you use larger plates, you could end up serving 9 percent to 31 percent more than you typically would,” write authors Koert van Ittersum (Georgia Institute of Technology) and Brian Wansink (Cornell University). The average size of dinner plates has increased by almost 23 percent from since 1900, the authors point out, and eating only 50 more calories a day could result in a five-pound weight gain each year.

In one lab experiment, the researchers asked 225 student participants to pour a specified amount of tomato soup into one of seven different sized bowls: three smaller, three larger, and one control bowl. Consistent with researchers’ expectations, participants served less than the target serving size of soup into the smaller bowls, and they served more into the larger bowls.

Follow-up experiments showed that the “bowl bias” is nearly impossible to eliminate with education, awareness, or practice. During two summer camps, larger bowls led people to overserve up to 31 percent more than normal.

One of the few ways to reduce bowl bias is through color—such as changing the color of a tablecloth or a plate. In a field study, participants were asked to serve white-sauce or red-sauce pasta on either a large white or a large red plate. On average, changing the color of the plate so it was high contrast reduced how much people served by 21 percent, and changing the color of the tablecloth reduced how much people served by 10 percent.

The study reinforces the little-known Delboeuf illusion, where people believe the size of a circle is much smaller when surrounded by a large circle than a small one. Likewise, when serving onto a small plate, the serving size looks relatively larger than it actually is, which leads people to underserve.

“In the midst of hard-wired perceptual biases, a straightforward action would be to simply eliminate large dinnerware—replace our larger bowls and plates with smaller ones or contrast ones,” the authors conclude.

Koert van Ittersum and Brian Wansink. “Plate Size and Color Suggestibility: “The Delboeuf Illusion’s Bias on Serving and Eating Behavior.” *Journal of Consumer Research*: August 2012 (published online November 11, 2011).

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