

**The Assessment of Energy Content and Density of a Self-Selected Meal with and without Avocado**

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**Objectives:** In a free-living intervention study, we determine if the inclusion of an avocado in a self-selected meal impacted its energy content (kcal) and energy density (kcal/g) as well as the energy content of the subsequent meal. We hypothesized that the inclusion of one avocado in a meal would impact both the energy content and density of that meal and the energy content of the subsequent meal.

**Methods:** Dietary data from 172 participants (mean age = 51 y) in the intervention arm of the Habitual Diet and Avocado Trial were collected via unannounced 24-hour recalls before and during the intervention. The energy density (kcal/g) of a meal containing avocado during intervention was compared with a corresponding non-avocado meal before the intervention. The energy contents of subsequent meals were likewise compared. Energy density was computed with and without beverages consumed at a meal. Differences were determined with t-tests.

**Results:** The daily mean energy intake before the intervention was  $1885 \pm 758$  kcal. During the intervention, the mean intake was  $2065 \pm 765$  kcal indicating that the inclusion of avocado at meals resulted in a significant increase in total daily energy intake ( $p < 0.05$ ). However, the total daily energy density remained the same ( $p = 0.18$ ). Compared to the main meal without avocado, the inclusion of avocado at a comparable meal increased the energy content of the meal (breakfast: + 148 kcal,  $p = 0.0018$ ; lunch: + 235 kcal,  $p = 0.005$ ; and dinner: + 276 kcal,  $p = 0.001$ ). However, the meal's energy density remained the same, whether or not beverages were taken into consideration. No significant changes in the energy content of the subsequent meal after the avocado meal were observed ( $p > 0.05$ ).

**Conclusions:** Among our free-living subjects, including a whole avocado at a meal increased the energy intake for that meal but did not increase its energy density or the energy content of the subsequent meal. Further analysis needs to be conducted to determine how this impacts body weight.

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