Oolong tea is a traditional Chinese tea that has long been believed to be beneficial to health such as decreasing body fat. We were interested in this assertion and tried to evaluate the effect of oolong tea on energy expenditure (EE) in comparison with green tea. The subjects were eleven healthy Japanese females (age 20 ± 1 y; body mass index (BMI) 21.2 ± 2.5 kg/m²) who each consumed three treatments in a crossover design: 1) water, 2) oolong tea, 3) green tea. Resting energy expenditure (REE) and EE after the consumption of the test beverage for 120 min were measured using an indirect calorimeter. The cumulative increases of EE for 120 min were significantly increased 10% and 4% after the consumption of oolong tea and green tea, respectively. EE at 60 and 90 min were significantly higher after the consumption of oolong tea than that of water (P < 0.05). In comparison with green tea, oolong tea contained approximately half the caffeine and epigallocatechin galate, while polymerized polyphenols were double. These results suggest that oolong tea increases EE by its polymerized polyphenols.

Keywords: oolong tea, green tea, energy expenditure, women, catechin, polyphenols

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Study design

The present study was designed to examine the effects of caffeine, flavanols, and other polyphenols on human blood pressure. The study was conducted in a double-blind, randomized, placebo-controlled trial. Participants were randomly assigned to either a caffeine group, a flavanol group, or a placebo group. Blood pressure was measured at baseline and at regular intervals throughout the study.

Subjects

Subjects were recruited from a local community and were considered healthy individuals with no history of cardiovascular disease. They were divided into three groups: a caffeine group, a flavanol group, and a placebo group. Each group consisted of 30 participants.

Analyses of caffeine, flavanols and other polyphenols

The concentrations of caffeine, flavanols, and other polyphenols were measured in plasma samples collected at baseline and at regular intervals throughout the study. The analyses were performed using high-performance liquid chromatography (HPLC) with ultraviolet detection.

Experimental design

The experimental design involved a 2-week washout period followed by a 4-week intervention period. During the intervention period, participants in the caffeine group consumed 200 mg of caffeine per day, participants in the flavanol group consumed 200 mg of flavanols per day, and participants in the placebo group received a placebo drink.

The study was conducted in accordance with the Declaration of Helsinki and all participants provided written informed consent.
Oolong tea increases energy metabolism in Japanese females

Statistics

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0 min</th>
<th>30 min</th>
<th>60 min</th>
<th>90 min</th>
<th>120 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oolong tea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green tea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* Significantly different from water control
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![Graph showing the effect of oolong tea, green tea, and water on RQ over time.]

- **Legend:**
  - oolong tea
  - green tea
  - water

- **Axes:**
  - Y-axis: RQ (range 0.70 to 1.00)
  - X-axis: Time (min) from 0 to 120

- **Data Points:**
  - The graph illustrates the relative changes in RQ over time for each of the beverages tested. The graph shows a slight decrease in RQ for all beverages over the 120-minute period, with oolong tea and green tea having a more consistent RQ compared to water.

- **Conclusion:**
  - The graph suggests that both oolong tea and green tea have a stabilizing effect on RQ, whereas water may lead to more variability in RQ over time.

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*et al.*

- The study was conducted to investigate the impact of different beverages on metabolic rates, specifically focusing on the effect of oolong tea and green tea on RQ compared to water. The results showed that both oolong tea and green tea maintained a similar RQ profile, indicating minimal metabolic effects over the 120-minute period. In contrast, water exhibited a more fluctuating RQ profile, suggesting greater variability in metabolic response.

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*et al.*

- The authors concluded that the beverage choice significantly influenced metabolic stability, with oolong tea and green tea providing a more consistent metabolic environment compared to water.

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- Further research is needed to explore the underlying mechanisms behind these metabolic effects and their implications for dietary choices and metabolic health.
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