



The effect of coconut oil and MCT on satiety and food intake

T. Maher, R. Kinsella and M.E. Clegg

Functional Food Centre, Department of Sport and Health Sciences, Oxford Brookes University, Gipsy Lane, Oxford

It is well established that the consumption of medium-chain triglycerides (MCT) can increase satiety and reduce food intake⁽¹⁾. Coconut oil contains a high concentration of MCT and because of this many media articles encourage the use of coconut oil for weight loss advocating similar health benefits to that of MCT⁽²⁾. Two studies examining the effects of coconut oil compared to long chain fatty acids reported no increase in satiety and no effect on food intake^(3,4). To the best of the author's knowledge there is a lack of data comparing the effect of coconut oil to MCTs on food intake and satiety. The aim of this study was to examine the effect of MCT oil compared to coconut oil and a control on food intake and satiety.

Following an overnight fast, fifteen healthy participants (33 ± 12 years; BMI 23.85 ± 2.85 kg/m²) consumed a test breakfast smoothie containing 205 kcal of either MCT oil, coconut oil or vegetable oil (control) on three separate test days. Participants recorded appetite ratings on visual analogue scales and were presented with an *ad libitum* lunch meal of preselected sandwiches 180 minutes after consumption of the breakfast.

The results showed a significant difference in energy intake at the *ad libitum* meal between the three oils (Control 1797.7 ± 415.7 kcal; MCT 1474.2 ± 536.5 kcal; Coconut oil 1710.8 ± 430.6 kcal; $P = 0.018$) with the difference lying between the control and the MCT oils ($p = 0.048$). There were also differences in the visual analogue scales for all four parameters, hunger, fullness, desire to eat and prospective consumption ($P < 0.001$). The differences here were between the MCT and the coconut oil for all VAS parameters ($P < 0.01$) and between control and MCT for hunger and fullness ($P < 0.05$). There were no differences between the control and the coconut oil. The MCT increased satiety more than the coconut oil and more than the control.

The results of this study confirm that MCT reduces food intake at an *ad libitum* meal where coconut oil does not. It also demonstrated differences in perceived satiety between MCT and coconut oil. This study demonstrates that coconut oil cannot be advertised as having similar effects to MCT oil on food intake and satiety.

1. Van Wymelbeke V, Louis-Sylvestre J & Fantino M (2001) *American Journal of Clinical Nutrition* **74**, 620–30.
2. Lockyer S & Stanner S. (2016) *Nutritional Bulletin* **41**, 42–54.
3. Poppit S, Strik C, MacGibbon A *et al.* (2010) *Physiology & Behavior* **101**, 161–167.
4. Rizzo G, Masic U, Harrold J *et al.* (2016) *Physiology & Behavior* **164**, 40–46.