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## Effects of oral and subcutaneous administration of Roselle calyx (*H. sabdariffa*) extract on weight management and controls

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Roselle (*Hibiscus sabdariffa* L., family Malvaceae) is consumed in Nigeria as a refreshing drink and for therapeutic purposes. This study was to examine the effects of *H. sabdariffa* calyx extract on the body and organ weight of Albino rats. The second goal was to compare the effects on the target organs via routes of administration (oral against subcutaneous). Sixty Albino rats of both sexes with an average weight of 204.14±2.1g (Mean±S.E.M) were assigned by sex, age and weight to a control group (VA and VB) and test groups (IA to IVA and IB to IVB). Empirical measurements on body weight was conducted prior to and after the experiment. They were administered with varying concentrations of the extract by oral and subcutaneous routes (10 to 50 mg/kg) for 30 days at 2 days interval. On day 31, all rats were sacrificed by anaesthetization. The internal organs were excised, weighed, grossed and fixed in Bouin's solution for 48 hrs prior to histological processing. Sections were obtained at 3-5 microns and stained with Mayer's haematoxylin and eosin for light microscopy. No comparable changes are observed histologically. However, gross effects on the organs and body weight of experimental animals showed significant reduction when compared to the control (VA and VB) and test groups (IA to IVA and IB to IVB). In comparison, with the oral administration, empirical measurement showed a massive weight loss in the high dose treated animals (both routes of administration) but are marked in the oral route. Therefore, this study suggests that *H. sabdariffa* calyx extracts may be used for weight management and control. However, further studies are required to examine the biochemical and hematological effects in Albino rats.

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## Do making habits or breaking habits influence weight loss and weight loss maintenance? A randomised controlled trial

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**Background:** Despite the significance placed on lifestyle interventions for obesity management, around 40% of weight loss is regained over the first year following treatment, and much of the rest over the next three years. Two psychological concepts (habitual behaviour and automaticity) have been suggested as the most plausible explanation of this overwhelming lack of long-term weight loss success.

**Method:** We evaluated the efficacy of two interventions that explore these theories: Ten Top Tips (10TT) and Do Something Different (DSD). 10TT promotes automaticity; this is the ability to perform tasks without awareness or deliberation. Therefore, diet and exercise related behaviours become automatic or habitual. Conversely DSD promotes behavioural flexibility. This program disrupts daily routines by assigning an individual with unstructured tasks to perform. Behavioural flexibility therefore has an inverse relationship with automaticity and is defined as the measure of an individual's range of mindful behaviours. Men and women (n=75), aged 51+6 (s.d.) years with body mass index 34.5+4.1 kg/m<sup>2</sup> were randomised to 12-week 10TT, DSD or no treatment control. Active intervention participants underwent 12 weeks of the program with 12-months follow-up.

**Results:** We collected data for weight, BMI, waist circumference as well as habitual behaviour and wellbeing. After 12 weeks intervention, weight loss averaged 4.6 kg in the 10TT group, 4.1 kg in the DSD group and 1.3 kg in the control group. There was significant improvement in wellbeing in the 10TT and DSD groups.

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