

ONLINE SNOWBALLING: AN EFFECTIVE METHOD OF DATA COLLECTION IN AUSTRALIAN YOUNG ADULTS

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Background/Aims: Recruiting participants to health research is time consuming, expensive, and further limited when coupled with sensitive research topics (for example, obesity). Utilising friendship networks to distribute surveys through social media (online snowballing) has been considered an effective method of sourcing participants. This paper reports online recruitment processes and outcomes used for a study of relationships between food addiction and obesity in Australian young adults.

Methods: A snowball sampling procedure (without financial incentives) was used to distribute links to an online survey through individual friendship networks including: Facebook pages, organizational websites; newsletters; and university course websites.

Results: A total of 237 people were recruited between 19th May and 10th August 2013 and 111 (46.83%) were eligible for inclusion in the study. Of these eligible participants, the majority were female (82%), Australian born (85%), university students (45%) and classified as healthy weight (55%). A small proportion of respondents (12%) provided incomplete data and 41% were ineligible due to age (39% were outside 18–24 years range); pregnancy (1%); or living outside Australia (1%).

Conclusions: We aimed to collect data from 400 young adults to allow for detailed analysis of associations between food addiction and obesity, however recruitment outcomes dictated re-consideration of data analysis methods. Further research is required to explore factors which impact recruitment outcomes with online snowballing, such as including financial incentives and the impact of eligibility criteria. Identifying the source of the responses may also assist in identifying potential bias and developing more efficient research design.

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Poster session 4: plant foods

WHEAT ENERGY VALUES: BIRD VARIATION

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Background/Aims: Poultry diets usually contain more than 60% wheat. The apparent metabolisable energy (AME) values of wheat are very variable. There is limited information on variation of individual bird in coping with anti-nutritive factors in wheat. The aim of the study was to determine the AME responses of individual bird to wheat based and commercial diets.

Methods: Wheat based and commercial diets, were each fed to 24 birds in single bird cages from days 28 to 35. Feed intake was recorded and excreta collected for the last three days. Gross energy was determined for feed and excreta and AME calculated.

Results: There were larger variations in AME values between birds fed on wheat based diet (11.26 to 15.6 MJ/kg dry matter) than those fed on commercial diet (12.85 to 15.79 MJ/kg dry matter). The average AME value of wheat based diet was 14.01 ± 1.12 MJ/kg compared to 13.57 ± 0.62 MJ/kg for commercial diet and their CVs were 8.0 and 4.6%, respectively.

Conclusions: This study clearly demonstrated highly variable responses of birds to the same diet, which poses the question of the role of between-bird variability in estimation of AME value of grains. Further studies are required.

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GLUCOSE TOLERANCE IS IMPROVED BY SUPPLEMENTATION WITH CARPOBROTUS ROSSII FLAVONOIDS IN INSULIN RESISTANT MICE

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Background/Aims: To investigate whether flavonoids from the native Australian plant, *Carpobrotus rossii*, improves glucose tolerance in insulin resistant mice.

Methods: Glucose tolerance was assessed in six week old insulin resistant male C57BL/6 mice fed either a normal (Norm, 9% fat w/w), or high fat (HFD 22% fat w/w) diet, with or without crude (HFD + Crude) or a refined flavonoid-rich extract (HFD + FLAV) for 28 days. Supplementation was via drinking water. Glucose responses to intraperitoneal injection of 2 g glucose/kg body weight were measured at regular intervals over 2 hours and were compared using two way ANOVA followed by Fischer's post-hoc test.

Results: Flavonoid (HFD + FLAV) supplemented mice had significantly lower blood glucose 45, 60 and 90 min post glucose challenge (all $p < 0.05$), compared with HFD controls.

Conclusions: *Carpobrotus Rossii* flavonoids improve glucose tolerance in insulin-resistant animals.

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NATURALLY OCCURRING DIETARY SALICYLATES IN COMMON AUSTRALIAN FOODS

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Background/Aims: Salicylic acid (SA) is a phytohormone involved in plant immunity. Aspirin, a commercially available SA, might play beneficial role in cardiovascular health and colon cancer. It may also cause urticaria, angioedema, asthma, gastrointestinal symptoms in SA-sensitive individuals. Dietary SA might exert similar beneficial effects and/or may induce similar symptoms in sensitive individuals. To develop dietary strategies, data on SA content of food is essential, but the available literature is limited and somewhat controversial. Hence the aims of this study were to apply and validate state-of-the-art methodology to accurately determine the SA content of common foods, and to compare the results with currently published data.

Methods: GC-MS was used to analyse 113 food items including common Australian fruits, vegetables, herbs, spices, sugars, cereals, oils and beverages. Each sample was pooled from five areas. SA-d6 was used as an internal standard and *N*-Methyl-*N*-(trimethylsilyl) trifluoroacetamide as derivatizing agent.

Results: Technical sextuplicates showed a coefficient of variation of 3.03%. SA content was measurable in all foods analysed except oils, sugars and cereals, and ranged from 0.05–6 (vegetables), 0.04–2.67 (fruits), 0.10–1.21 (herbs/spices) and 0.51–1.18 mg/serve (beverages). Considerable differences with published data were noted for, for example, pumpkin and pears while eggplants and dates were similar.

Conclusions: GC-MS is a valid way of determining SA content of food. The results reveal gaps and inconsistencies within the extant literature. There is a pressing need for further research extending the analysis to a wider range of food items.

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SUPPRESSION OF INTESTINAL CARCINOGENESIS IN APC-MUTANT MICE BY THE CITRUS LIMONOID LIMONIN

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Background/Aims: Limonoids in citrus fruits are known to possess multiple biological functions. Therefore, we aimed to investigate the