

effect between age and HT-AC. Inflammatory foci was observed in HT-AC-fed young mice but not in HT-AC-fed old mice.

**Conclusions:** These data indicate an interaction between age and HT-AC supplement and suggest a need for caution among young individuals consuming HT-AC for long time.

**Funding source(s):** N/A

#### P116

##### THE EFFECT OF DRYING METHODS ON BIOACTIVE PROPERTIES IN THREE VARIETIES OF PRICKLY PEAR (*OPUNTIA FICUS INDICA*)

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**Background/Aims:** The prickly pear (PP) cacti (*Opuntia ficus indica*) are commonly utilised as a source of nutraceuticals due to its substantial bioactive composition. However, preservation of bioactivity can present a challenge with considerable losses of these compounds, depending on the type of drying technique used. Therefore, the aim of this study was to determine the optimum drying method to preserve the bioactive content of the commercially grown Australian PP's.

**Methods:** Three PP varieties (White, Orange, Purple) were dried using four different Methods (freeze dryer, draft oven, microwave and dehydrator). Total Phenolic (Folin-Ciocalteu; Gallic acid equivalent, GAE); Flavonoid (AlCl<sub>3</sub>; Catechin equivalent, CE) and Betalain (Betaxanthin and Bethanin equivalent, BBE) content along with antioxidant characteristics (Trolox equivalent, TE), free radical scavenging activity (DPPH), reducing capacity (CUPRAC) and antioxidant capacity (FRAP) were determined spectrophotometrically. Kendall's *tau* test was used to determine the best drying method in comparison to freeze drying.

**Results:** Microwave drying produced the maximum levels for mean  $\pm$  SEM total phenolic content in White (145.0  $\pm$  15.5  $\mu$ g<sub>GAE</sub>), Purple (129  $\pm$  17.8  $\mu$ g<sub>GAE</sub>) and Orange (138.7  $\pm$  25.9  $\mu$ g<sub>GAE</sub>) variety. In addition, in White and Purple variety, flavonoid (74.1  $\pm$  8  $\mu$ g<sub>CE</sub> and 66.2  $\pm$  9.2  $\mu$ g<sub>CE</sub>), CUPRAC (3261  $\pm$  172.9  $\mu$ M<sub>TE</sub> and 2743  $\pm$  272.8  $\mu$ M<sub>TE</sub>) and FRAP (1458.5  $\pm$  32.3  $\mu$ M<sub>TE</sub> and 1328  $\pm$  146.3  $\mu$ M<sub>TE</sub>) were also the highest. Total betalains, were highest in White PP (3.1  $\pm$  0.5 mg<sub>BBE</sub>/100 g) following microwave drying, whereas Orange PP maximum was achieved using oven drying (3.2  $\pm$  0.6 mg<sub>BEE</sub>/100 g) and Purple PP using dehydrator (2.9  $\pm$  0.4 mg<sub>BEE</sub>/100 g); all *p* < 0.05.

**Conclusions:** The method that preserved the highest amounts and activity of bioactives, during the drying process, in comparison to freeze-drying, was the microwave drying.

**Funding source(s):** N/A

#### Poster session 5: Maternal, childhood and adolescent nutrition

##### P46

##### HUMAN MILK INHIBITS THE GROWTH OF PATHOGENIC *E. COLI*

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**Background/Aims:** Diarrhoea is one of the major causes of death in children under age of 5 globally. Diarrhoea is induced by pathogenic viruses and bacteria. Human milk (HM) contains bioactive immune proteins that are known to protect infant against diarrhoea. The aim the study is to determine the immune capability of human milk in reducing the growth of pathogenic *E. coli*.

**Methods:** Pathogenic *E.coli*: O16 was used in this study. 12.5 MCFU/ml of it was mixed with HM, bovine milk powder or terrific broth and incubated in shaker at 37°C for 6 hours. At each hour, a mixed suspension was removed from the shaker. CFU/ml of the suspensions were determined by cell

culture method and nitrogen content by the Kjeldahl method.

**Results:** During the 6 hours incubation, the HM suspension had a log 1 increase of pathogenic *E. coli*, whereas the terrific broth and bovine milk powder had a log 3 increase. The averages of total, non-protein and protein nitrogen in HM were 2.41  $\pm$  0.32, 0.80  $\pm$  0.09 and 1.60  $\pm$  0.26 g/L, respectively and in bovine milk powder were 4.16  $\pm$  0.43, 0.68  $\pm$  0.12 and 3.47  $\pm$  0.42 g/L, respectively.

**Conclusions:** The bioactive components of HM appeared to inhibit the growth of pathogenic *E. coli*. Minimal changes in the non-protein nitrogen indicated that there was minimal degradation of immune proteins. HM may protect the infant by inhibition of the growth of pathogenic *E. coli*.

**Funding source(s):** The University of Notre Dame Australia, Medela AG

##### P47

##### PARENTAL FEEDING CONTROL BUT NOT USE OF FOOD-TO-SOOTHE AT AGE 3.5 YEARS IS ASSOCIATED WITH LATER ADIPOSITY

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**Background/Aims:** Associations of parental feeding practices with adiposity are mixed and are mostly from cross-sectional studies. We aimed to study the associations between parental feeding control and using food to soothe at 3.5 years on adiposity at 7 and 15 years, in a large longitudinal cohort.

**Methods:** Participants were from the Avon Longitudinal Study of Parents and Children (*n* = 7312). Feeding control was assessed by asking 'how much choice do you allow him/her in deciding what foods he eats at meals?' Use of food to soothe was reported by mothers on the item 'how often do you use sweets or other foods to stop his/her crying or fussing?' BMI at 7 and 15 years was converted to sex- and age-adjusted z-scores. Fat mass was assessed at 15 years using dual energy X-ray absorptiometry. The associations between feeding control, use of food to soothe and BMI z-scores and fat mass were estimated by confounder-adjusted linear regression.

**Results:** In fully-adjusted models, children given the least choice had lower BMI z-scores (7 years: -0.08; 95%CI -0.17, 0.01); 15 years: -0.12, 95%CI -0.23, -0.02), and lower fat mass (15 years: -1.54 kg, 95%CI -2.35, -0.74), than children with the most choices. There was no evidence of an association between using food to soothe and adiposity.

**Conclusions:** Contrary to some studies, higher parental control over food choice was associated with lower adiposity, but use of food to soothe was not associated with adiposity at ages 7 and 15.

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##### P48

##### THE EFFECTS OF MICRONUTRIENT INTERVENTIONS ON COGNITIVE PERFORMANCE AMONG SCHOOL-AGED CHILDREN: A SYSTEMATIC REVIEW OF RCTS

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**Background/Aims:** Micronutrient interventions have been shown to benefit children's cognitive development, particularly in subjects who were micronutrient-deficient at baseline. However, the Results on healthy subjects remain inconsistent and effect on different cognitive domains remains equivocal. This systematic review highlights the effects of single and multiple micronutrient interventions on different cognitive domains among school-aged children from both developing and developed countries.

**Methods:** A systematic search of Medline, CINAHL Plus and Academic Search database was conducted to identify trials published after year 2000. Randomized controlled trials (RCTs) that evaluated the effect of