

## Posters

### Binge eating disorder: prevalence and correlates in sub-groups of the Australian population

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**Background** - Binge Eating Disorder (BED) occurs infrequently in the general population, but is relatively common amongst obese treatment seekers. Given its positive association with adiposity, investigation into factors that predict binge eating across a broad community spectrum is warranted.

**Objective** - To investigate the prevalence of BED within sub-groups of the Australian population, and explore any association between body weight, eating and exercise behaviours, psychological status and quality of life.

**Design** - In this cross-sectional cohort study, data were collected on eating behaviours, symptoms of depression, dietary intake, activity levels, QoL and body image via a series of self-report questionnaires. Preliminary data on binge eating behaviours and symptoms of depression for the first 260 respondents (58%) are presented here (planned n=450). Study populations include 1) individuals in the general community (n=101, 22M, 78F, mean age  $42.5 \pm 14.4$  yr), 2) individuals seeking behavioural weight loss treatments (n=68, 2M, 66F, mean age  $54.1 \pm 13.4$  yr), and 3) individuals seeking obesity surgery (n=91, 21M, 70F, mean age  $44.3 \pm 11.6$  yr). Chi squared analysis, one-way ANOVA, and binary logistic, and linear regression were performed using SPSS version 12.

**Outcomes** - Binge eating frequency and mean group BMI are tabled below. Both BMI ( $P=0.017$ ) and elevated depression score ( $P<0.001$ ) show significant independent predictive effects on binge eating. Individuals with high depression scores were more likely to have a high BMI ( $P<0.001$ ), be female ( $P<0.001$ ), and binge eat ( $P=0.007$ ).

	No bingeing	Sub BED	Full BED	All binge eaters	BMI (kg/m <sup>2</sup> )
General community	n=97 (96%)	n=4 (4%)	n=0 (0%)*	n=4 (4%)*	24.4 $\pm$ 4.1#
Obese Rx seekers	n=57 (83.8%)	n=7 (10.3%)	n=4 (5.9%)*	n=11 (16.2%)*	31.9 $\pm$ 6.2#
Surgery candidates	n=59 (64.2%)	n=9 (9.9%)	n=23 (25.3%)*	n=32 (35.2%)*	45.2 $\pm$ 7.6#
BMI (kg/m <sup>2</sup> )	31.8 $\pm$ 10.1	40.4 $\pm$ 11.7	43.9 $\pm$ 8.1	42.5 $\pm$ 9.8	

Statistical analysis using Chi-squared. \*All results statistically significant at  $P < 0.001$ ; BMI, mean  $\pm$  SD; Statistical analysis using One-way ANOVA. #All results statistically significant at  $P < 0.001$

**Conclusion** - Across all groups, a positive association exists between obesity, binge eating and depression. The interconnected nature of this relationship requires elucidation.

### Frontal cortex sialyltransferase activity during learning and sialic acid supplementation in piglets

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**Background** - Sialic acids (Sias) are found in large amounts in the brain and human milk. Sia supplemented rodents exhibit increased memory recall in Y-mazes with corresponding Sia content in the brain.<sup>1</sup>

To determine if sialyltransferase activity is influenced by learning and Sia supplementation in frontal cortex samples.

**Design** - Three-day-old male piglets were randomly allocated to one of four groups fed milk supplemented with a protein-bound form of Sia (estimate) for five wks: 77 mg/L (group 1, control), 250 mg/L (group 2), 600 mg/L (group 3) and 842 mg/L (group 4). Between 23 and 35 days of age, learning and memory were assessed using an eight-arm radial maze. On day 35 the piglets were euthanased and sialyltransferase activity in frontal cortex (n=50) were analysed using a rapid radioactive assay.<sup>2</sup> The supplemented groups learned the visual cue significantly faster than the control groups for the easy ( $P = 0.0014$ ) and difficult task ( $P = 0.0177$ ). There were no significant differences in sialyltransferase activity between the groups. There was a significant positive correlation between sialyltransferase activity and learning performance in the easy task, which occurred one week prior to sacrifice ( $r = .368$ ,  $P = 0.0009$ ), with a stronger correlation for group 4 piglets alone ( $r = .590$ ,  $P = 0.043$ ).

**Conclusion** - The degree of sialylation in the frontal cortex may be influenced by prior learning events, as noted during long-term memory formation, which occurs in a progressive manner. This was observed prominently in piglets fed high doses of Sia.