Table 1

*A List of Studies Using Behavioural Measures to Investigate Obesity and Eating Behaviours*

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| **Authors** | **Sample** | **Group/ Obese population** | **Task/ Measure** | **Visual/ Auditory** | **Food related task stimulus** | **Experimental/**  **Observatory** | **Food Eating ED** | **Relation impulsivity- BMI** | **Mean Age** | **Mean BMI** | **BMI** | **Comments** |
| **Pauli-Pott et al. (2010)** | 177 | Obese children | Go no-go/Stop Signal  (Reaction times, invalid reactions) | Visual | No | Observational | No |  | 11.3 | 29.3 (SD 4.3) | X | 1. Error rates to predict obese vs. non-obese in younger age group(<11 years old). 2. In younger children age moderated BMI (using go no-go task). However not found in adolescents. Inattention cores differentiated between age groups- children being more attentive than adolescents as measured by reaction times. |
| **Jansen et al. (2009)** | 64 | Adults-female | Stop Signal Task/dietary restrint | Auditory | No | Experimental | Yes |  | 22.4 (SD 2.6) | 19.1 (SD 1.3) |  | High restrint eaters only over eat when highly impuslive too. Seen under all experimental conditons: control, preload sight of food). |
| **Loeber et al (2012)** | 20 | Adults - mixed | Go no-go Task 1.Reaction times in go trials  2. responses to distractors (commission errors) 3.comission errors (failing to respond to target words) | Visual | No | Observational | No | No | 47.9 (SD 12.5) | 38.8 (SD 6.3) | X | Both obese and normal were faster at responding to go-trials. |
| **Guerrierie et al. (2007)** | 68 | Adults-female | Stop Signal Task (SSRT) | Auditory | No | Experimental | Yes (Bogus) |  | 20.3 (SD 3.4) | 21.8 (SD 3.0) |  | Median-split using SSRT was unable to find influence of impulsivity on flood intake (SSRT 159.44 ms). |
| **Nerderkoorn et al. (2010)** | 74 | Adults-female Obese | Stop Signal Task (SSRT)  IAT | Auditory | Yes. IAT | No | No | No | 19.7 (SD 1.9) | 21.5 (SD 2.3) |  | 1. For participants with a high Implicit Preference for snack food, poor inhibitory control significantly influenced weight change. 2. Less effective response inhibition gained more weight than participants with more effective response inhibition. |
| **Nederkoorn et al (2006)** | 32 | Adolescents  Obese | Stop Signal Task (SSRT) | Auditory | No | No | No | Yes (Corr.) | 13.7 | 26.6 (SD 4.2) | X | Obese found to be more impulsive on SSRT (186.9 (SD43.5) vs. 166.4 (SD 35.7). 2. SSRT correlated with those who lost most weight during intervention.3 SSRT did not differentiate between binge eaters and non-binge eaters. |

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| **Jasinska et al. (2012)** | 204 | Adults-Mixed | Go no-go (Error Rates) | Visual | Food images | Observational | No | No | 19.0 (SD 0.9) | 23.5 (SD 4.0) | X | 1. Inhibitory control (rate of false alarms) significantly associated with emotional eating scores (DEBQ score). 2. Rate of false alarms had a negative association with tasty healthy choices of the food choice task. |
| **Nederkoorn et al. (2006)** | 31 | Adults-Women  Obese | Stop Signal Task (SSRT) | Auditory | No | Observatory | No | Yes | 39 (SD 5.3) | 40.9 (SD 6.6.) | X | Obese showed prolonged SSRT (in last of 4 blocks)-overall no significance. |
| **Nederkoorn et al, (2009)** | 57 | Adults-female | Stop Signal Task (SSRT) | Auditory | No | Experimental | Yes  (Bogus) | No | 20.0 (SD 1.4) | 22.0 (SD 1.6) |  | 1. Caloric intake correlate significantly with inhibitory control.2. Hierarchal linear regression showed those who were hungry and impulsive ate the most. |
| **Verbeken et al. (2009)** | 41 | Children  Obese | Stop Signal Task (SSRT) | Visual | No | Observatory | No | Yes | 12.0 (SD 1.5) | 32.3 | X | Obese group had less efficient inhibitory control (227 (SD 47.7) vs. 261.9 (SD 63.0) |
| **Guerrieri et al. (2009)** | 66 | Adults-Female | Stop Signal Task (SSRT) | Auditory | No | Experimental | Yes (Bogus) | No | 20.8 (SD 2.6) | 22.3 (2.6) |  | 1. Caloric intake was greatest for non-dieters with induction of impulsivity. 2. Current dieters increased caloric diet in response to inhibition. |
| **Hall et al. (2008)** | 64 | Adults | Go no-go task | Visual | No | Prospective, non-experimental | No | Yes | 19 | 22.1 | X | Behaviour intention for physical activity and consumption for fruit and vegetable was significant for those with strong executive function. |
| **Allan et al. 2010** | 114 | Adults | Go no-go Task (Error Rates)/  Stroop (Average median reaction times) | Visual | No | Experimental | 2 studies looking at dietary monitoring tasks. | No | Study 1 (22)  Study 2 (22) |  |  | Performance on Stroop Task only was a predictor of number of snacks consumed and hence the intention-behaviour gap. |
| **Ratcliff et al. (2010)** | 264 | Adults | Go no-go Task (Error Rates) | Visual | No | Observatory | No | No | 18.3 (SD 0.6) | 43/264 obese | X | Go No-go task did not predict % Body Fat. |
| **Wong et al. (2009)** | 96 | Adults | Go no-go task (Performance Index [(No Go Accuracy/RT)x 100]) | Visual | No | Observatory | NO | No | 19.5 (SD 2.2) | Not recorded |  | Go No-go task did not predict intention and prospective behaviour of breakfast consumption. |
| **Hoffmann et al. (2009)** | 118 | Adults-Female | Go no-go task (SSRT) | Auditory | Yes (Images) | Experimental | Yes (Bogus) | No | 23 | 22.2 |  | Automatic affective reactions have a stronger impact on eating behaviour for individuals’ lower inhibitory control. |

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| **Houben et al. (2011)** | 29 | Adults-Mixed | Stop Signal Task (SSRT) | Visual | No | Experimental | Yes (Bogus) | NO | 21.2 (SD 1.8) | 23.1 (SD 4.3) |  | 1. Food intake higher in those with low inhibitory control. 2. Inhibition manipulation decreased consumption of food paired with stop signal (stop food. In participants with high inhibitory control, impulsivity manipulation increased consumption of go food relative to control food. |
| **Allan et al. (2010)** | 62 | Adults | Stroop Test (Incongruent-Neutral RT) | Visual | No | Experiment | Yes (Bogus) | Yes | 20.4 (SD 7.1) | 22.6 |  | 1. Poor Stroop performance associated with greater chocolate consumption. 2. Stroop associated with higher BMI in normal weight participants. |
| **Gunstad et al. (2007)** | 408 | Adults | Stroop Test (Verbal Interference) | Visual | No | Observatory | No | Yes (Verbal interference negatively correlated with BMI) | Younger: 32.4 (SD 9.1)  Older: 60.4 (SD 7.6) | Younger: 28.4 (SD 4.4)  Older: 29.2 (SD 3.5) |  | Normal weight individuals outperformed overweight/obese participants on Stroop Task (verbal interference) |
| **Phelan et al. (2011)** | 29 | Adults(Obese and Weight loss maintainers) | Stroop Test (Average median reaction time-Correct trials) | Visual | Yes (words) | Observatory | No | No | WLM: 48.5 (SD 11.4) Obese: 48.3 (SD 7.6) | WLM: 23.7 (SD 1.6)  Obese: 34.3 (SD6.7) | X | 1. Weight loss maintainers showed slower reaction times for high calorie food than obese and normal weight persons. 2. Obese were fastest to react to high calories food. |