

**EFFECTS OF A MID-MORNING
SNACK ON HAZARD
PERCEPTION IN DRIVING**

**Katherine Chaplin & Andrew Smith
Centre for Occupational and Health
Psychology,
Cardiff University**

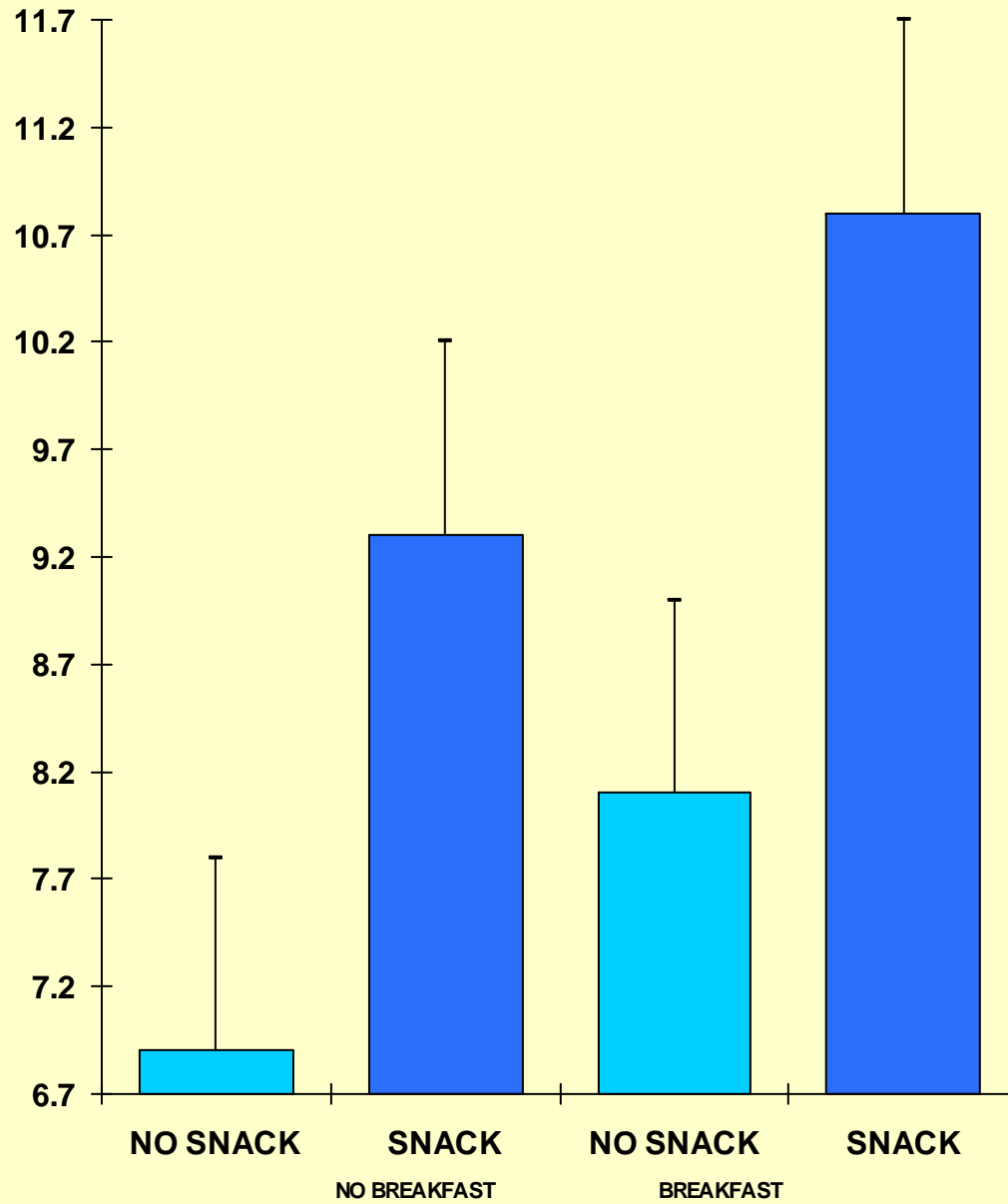
Eating, drinking and behaviour research programme

- Description of effects
- Underlying mechanisms
- Practical implications

Snacking

- Snacking type and well-being (Chaplin & Smith, submitted)
- Grazing is associated with greater alertness and performance efficiency compared to large meals (Hewlett et al., 2009)
- Acute effects of cereal bars – greater alertness and better memory (Smith & Wilds, 2009)

SNACKING AND MEMORY



Practical Implications

- Accidents, injuries and cognitive failures at work
- Sickness absence
- Well-being (stress, fatigue, self-reported health)
- Performance efficiency (education, work, the elderly)
- Skills involved in driving

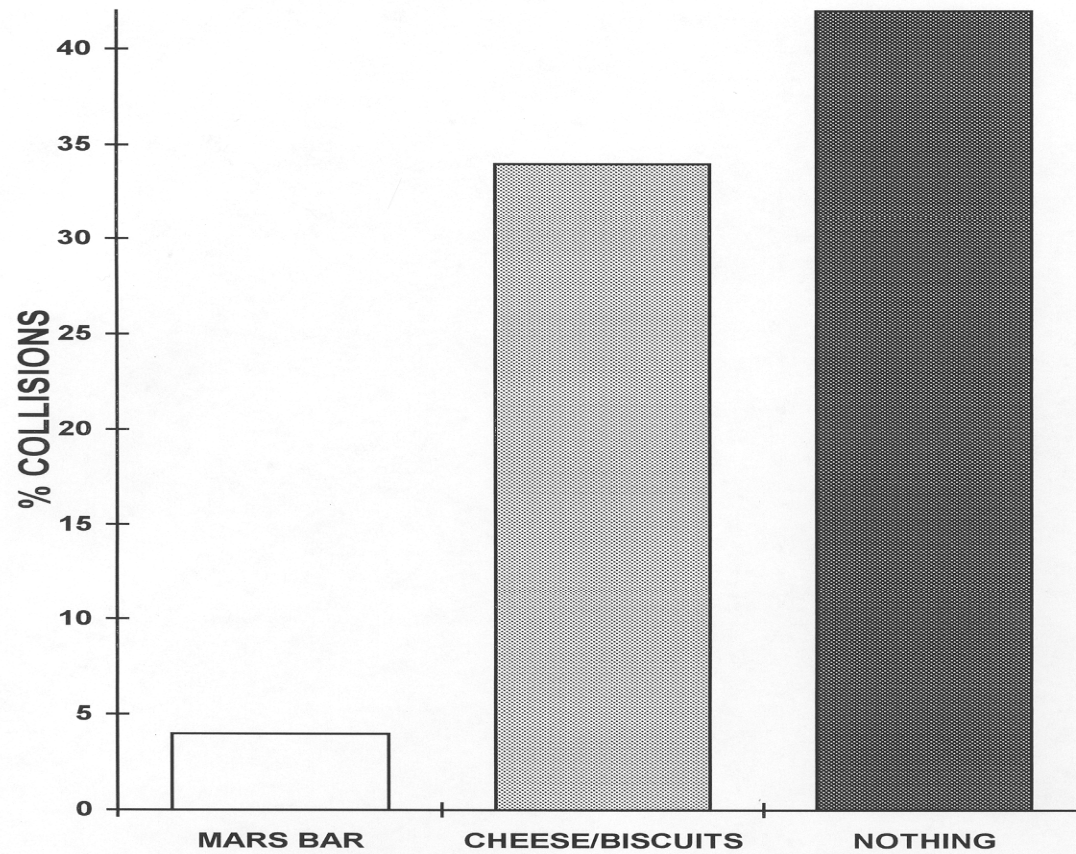
Eating, drinking and skills involved in driving

- Alcohol – analysis of accidents; simulated driving; hazard perception.
- Caffeine – reduces driver fatigue; reduces frequency of accidents; improves performance on a driving simulator.

Snacks and simulated driving

- Not a good idea to eat or drink while driving (Young et al. 2008)
- But prior consumption of a snack may aid subsequent driving (Smith & Rich, 1998).

SNACKS AND COLLISIONS WITH SIDE OF TRACK
(% volunteers having a collision)



The Present Study

- Acute effects of a cereal bar on hazard perception.
- Between subject design with a pre-snack baseline session and a post-snack session (45 minutes after snack).
- No snack: N=25; Snack: N=26. 19 males, 32 females. Mean age= 24 years.

Hazard Perception Test

- 2 commercially available DVDs for learner drivers.
- 15 hazards. Correct detection of hazard scored as a 5. Latency of response and cheating were also recorded.
- Familiarisation: 3 practice clips with feedback on performance.

Results

- No snack: Total mean score = 40.7 (1.7)
- Snack: Total mean score = 46.2 (1.6)
- This difference was significant ($p < 0.05$)

- No other scores showed a significant difference

Discussion

- Consumption of a mid-morning snack improved hazard perception.
- The cereal bar had a high carbohydrate content (69g per 100g) and this may underlie the effect on hazard perception. Further research is required to test this view.

Acknowledgements

This research was supported by a BBSRC PhD CASE studentship with industrial sponsorship from the Kellogg's Company Ltd.