

Impact case study (REF3b)

Institution:	University of Northumbria at Newcastle
Unit of Assessment:	4 – Psychology, Psychiatry and Neuroscience
Title of case study: The impact of school breakfast club attendance on children’s nutrition, cognition and social wellbeing	
<p>1. Summary of the impact</p> <p>Since 2007, a team of researchers at Northumbria led by Professor Margaret (Greta) Defeyter (employed at Northumbria since Sept 2003) have been investigating the effects of breakfast on children’s cognitive performance and social behaviours. The research findings have been translated into an online training programme that has up-skilled the workforce (e.g. teachers, governors, NHS Public Health Advisors and parent volunteers) from across the UK. This training provision has resulted in the start-up of 212 school breakfast clubs across the UK. School staff and public health advisors have reported a significant impact on their knowledge and skills, as well as the training programme having influenced practice and shared learning between colleagues. Following the implementation of school breakfast clubs, teachers have reported gains in terms of school attendance, punctuality and motivation (increased attainment) and quality of life (social deprivation, behaviour and nutrition) of many children involved in the UK.</p>	
<p>2. Underpinning research</p> <p>The research programme consists of a number of studies, from 2004 onwards funded by Research Council (ESRC), industry (Kellogg’s, Greggs, Pharmaton) and local councils (Blackpool), with total grant funding of over £350,000. These studies have investigated the effects of GI (Glycaemic Index) on children’s cognitive performance (funded PhD from Northumbria); the effect of breakfast club attendance on children’s behaviour, cognition and social friendships, funded by Kellogg’s; and children’s perceptions of portion sizes.</p> <p>Previous studies investigating the effects of breakfast consumption have primarily focused on nutritional and academic outcomes and only a few studies have systematically examined the impact of breakfast on a range of cognitive measures. Even fewer studies have investigated the effect of breakfasts that differ in terms of nutritional composition. Early work conducted in our lab demonstrated that the actual composition of breakfast affects children’s subsequent performance on tasks measuring memory and attention (Ingwersen (PhD student), Defeyter (Senior Lecturer), Kennedy (Professor) and Scholey (Professor), 2004-2007).</p> <p>More recently, our research programme has focused on the effects of breakfast club attendance on social behaviours, such as the quality of pupil-pupil friendships and pupil-teacher relationships, bullying and victimisation (Defeyter et al.). This is the first study to investigate the effects of breakfast club attendance on these factors and feeds directly into national educational initiatives, such as Every Child Matters, Inclusion Policies and Extended School Services. The findings of a longitudinal study, conducted across ten schools in the North East of England, showed that six months following the introduction of school breakfast clubs attendees reported higher levels of companionship with peers, improved teacher relationships and felt more secure in the school environment (Defeyter, M.A., Graham. Walton and Apicella, 2010). The team is currently investigating the effects of breakfast cereal consumption on adolescents’ cognitive performance and mood and examining facilitators and barriers to adolescents’ breakfast consumption (Defeyter & Russo (2013).</p>	
<p>3. References to the research</p> <ul style="list-style-type: none"> • Ingwersen, J., Defeyter, M.A., Kennedy, D.O., Wesnes, K. A., and Scholey, A.B. (2007). A low glycaemic index breakfast cereal preferentially prevents children’s cognitive performance from declining throughout the school morning. <i>Appetite</i>, 49. 240 -244. http://www.sciencedirect.com/science/article/pii/S0195666306006398 • Haskell, C, Scholey, A.B., Jackson, P.A., Elliot, J., M. A. Defeyter, M.A., Greer, J., Buchanan, T., Tiplady, B., Kennedy, D. O. (2008). Cognitive and mood effects in healthy 	

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children during 12 weeks supplementation of multi-vitamin/minerals. *British Journal of Nutrition*, 100, 1086-1096. DOI: 10.1017/S0007114508959213

- Defeyter, M.A. (April, 2008). An evaluation of school breakfast clubs. Invited paper presented at the *Annual Westminster Breakfast briefing*, Houses of Parliament, London – Transcript available from HEI on request
- Defeyter, M.A., Graham, P.L., Walton, J., and Apicella, T. (2010) Breakfast clubs: availability for British schoolchildren and the nutritional, social and academic benefits *Nutrition Bulletin*, 35, 245 -253. DOI: 10.1111/j.1467-3010.2010.01843.x
- Defeyter, M.A. and Russo,R. The effect of breakfast cereal consumption on adolescents' cognitive performance and mood. *Frontiers in Human Neuroscience*. DOI: 10.3389/fnhum.2013.00789

Funding:

- Kennedy, D. O., Defeyter, M.A., and Scholey, A (2006- 2007). An evaluation of changes in cognitive performance in schoolchildren, performing CDR-tests, before and after a 3-month period of supplementation with Pharmaton Kiddi chewable tablets. Pharmaton, **£56,000**
- Defeyter, M.A, Russo, R., and Reynolds, C. (2009). PhD studentship (Mrs. Pamela Graham) sponsored by Kellogg's UK, value **£63,000**
- Defeyter, M.A. and Graham, P. L. (2010-2011) An ESRC-funded knowledge exchange grant (RES-92-0070). School Breakfast Clubs: Research, policy and practice, total value **£16,000**, including partner funding.
- Defeyter, M.A. (2011). Development of a National Breakfast Club Training Programme. Kellogg's USA and ContinYou, value **£81,000**

4. Details of the impact

This research has provided vital evidence to support the expansion of school breakfast clubs all around the country. Between May 2008 and January 2013 four industry reports were produced for Kellogg's and one report produced for Greggs (Sources 1 and 2). These reports influenced breakfast club models and have resulted in the first accredited breakfast club training programme in England and Scotland. As a consequence of the findings of the report to Greggs in December 2010, members of the Unit are now working with over 50 companies and businesses to deliver breakfast clubs to communities across the UK.

The Unit has made considerable efforts to apply these findings to secure impact: it has engaged users at all stages of the research through collaborative work with industry, educational professionals and schools; it has presented a number of parliamentary papers (indeed some of these were invited and solicited by parliamentary teams). This research programme has generated approximately £350,000 in income from industry (Kellogg's UK & Kellogg's USA); an ESRC Knowledge Exchange Grant; and resulted in a collaborative research programme with Kellogg's and ContinYou (a leading national charity) to provide breakfast club training to 200 school teachers in 2012. It has informed policy makers, academics, user groups and the public of the benefits regarding children's breakfast consumption at a national and international level. The PI has provided direct input to public policy making through membership and consultancy with decision making committees. The PI is a member of the All Party Parliamentary Group on School Food; the Breakfast Club Plus Trust (2008-2012); the British Food and Drinking Group; and has been a panel discussant for the Parliamentary Food and Health Forum (25/09/2008). The research findings have been presented in the Westminster Parliamentary Newsletter (17/07/08) at the Parliamentary Food and Health Forum (23/03/2010) (Sources 3 and 4), and the House of Lords (September, 2008; February, 2009). The programme of research has also been widely disseminated to academics, businesses and the public through a number of conference presentations. For example, the PI was

an invited speaker at the National Nutrition and Health Conference and an invited speaker for the Vitafoods International Conference. The Unit has also engaged in a significant amount of national and international press coverage resulting in increased public awareness of the underpinning research (e.g. BBC News 24, Look North, Tyne Tees, Complete Nutrition (Australian Edition), Eating Well Magazine (USA), Dieticians Magazine, Dietetics Today, Scientific America, and has disseminated to local education authorities, at a national level, through the Connexions direct website (01/12/2008), Children and Young People Now (1/12/2008) and TES Direct (27/03/2009). The work of the team has also been cited in a Joseph Rowntree Publication titled, "How can universities support disadvantaged communities?" (Source 5)

In November 2010, the Inaugural Knowledge Exchange Conference on school and community breakfast clubs was co-funded by Northumbria University, ESRC, Kellogg's and leading educational charity ContinYou (ESRC-funded knowledge exchange grant). The conference entitled: School and Community Breakfast Club: Breakfast on a plate – Delivery to Impact, and aimed to develop ways to improve communication and co-ordination between breakfast club organisers, supporting organisations, nutritionists, academics and user groups. The overarching aim was to secure awareness of the importance of children's nutrition in relation to their cognitive and social development and to ensure that breakfast club provision exists in schools throughout the UK. The event featured a keynote address from Rt. Hon Anne Milton, Parliamentary Under-Secretary of State for Public Health. Delegates included MPs; businesses, charity workers; teachers; Food Standards Agency; Public Health North East; and regional councils. Some examples of pledges collected from delegates post-conference are: I pledge to: "*work with partners/stakeholders to develop breakfast clubs in Ireland*"... "*promote the importance of breakfast clubs within my organisation and produce more guidance for our website (School Food Trust)*"... "*introduce breakfast club to KS3 and 4*".

Industry reports produced for Kellogg's (Source 6) and Gregg's have impacted upon breakfast club models and have resulted in the provision of the first accredited breakfast club training programme in the England and Scotland. This training programme is currently being extended to include Ireland and Wales. Future plans are to extend this training provision to Uganda and Nigeria. At the current time, a report is being produced for Blackpool County Council on attitudes of stakeholders and users about the school breakfast scheme; impact on children's health; social, behavioural and educational outcomes; and nutritional content analysis of food menu, compared to recommended daily nutritional guidelines for children.

In 2013 Blackpool Council commissioned research for £22,000 to evaluate the impact of providing free breakfast to primary school children. The final report was delivered in April 2013 and as a result of the report Blackpool Council decided to fund universal free breakfast club provision for all primary school children in Blackpool for 2013-2014 at a cost of £1.3m. (Source 7)

The online breakfast club training incorporates the underpinning research, wider research findings and policy to provide a one-stop website for school breakfast club related material and can be found on the Healthy Living website (Source 8). The training section of this website has had over 2,553 visits over the last year, with 12,899 page views with an average of 5.05 page views per visit.

Evidence of impact on school staff and pupils has been collected through a number of case studies (N =5) and on-line questionnaires (N =154). 95% of respondents reported a change in their school practice as a result of attending the breakfast club training. (Source 9)

5. Sources to corroborate the impact

1. Industry Report - Defeyter, M.A. and Russo, R. (January 2013). 'The effects of breakfast clubs consumption on children's cognitive performance as a factor of cognitive load'. Kellogg's UK – report available from HEI on request
2. Industry Report - Defeyter, M.A. (August, 2010) 'Evaluating the Gregg's breakfast club model'. Report to Gregg's Foundation and CEO – report available from HEI on request

3. All Party Parliamentary Group on School Food - Testimonial from School Food and Health Advisor, on the impact of School Breakfast Clubs.
4. Westminster Education Forum Keynote Seminar - Healthy School Food – Eating and Learning - 25 September 2008 – Transcript available from HEI on request
5. Joseph Rowntree Foundation report: How can Universities Help Disadvantaged Communities? <http://www.jrf.org.uk/sites/files/jrf/disadvantaged-communities-and-universities-full.pdf>
6. Breakfast Club Training - Testimonial from Corporate Responsibility Manager, Kellogg's Europe, Manchester, UK on the development of Breakfast Club models.
7. 'Examining the impact of school breakfast provision on health, well-being and educational engagement in a sample of schools in Blackpool'. (May 2013) Report for the Executive Group at Blackpool Council – Report available from HEI on request <http://www.theguardian.com/uk/2013/jun/07/blackpool-breakfast-scheme-primary-school-pupils>
8. Healthy Living website: Breakfast Club Training Video Material with focus on nutrition and exercise: <http://healthylivinguk.org/breakfastclubtraining/breakfast-training-materials/breakfast-training-video-material/>
9. Video interviews with pupils, staff and parents from Front Street Primary on the benefits of School Breakfast Clubs. <https://www.makewav.es/story/188288/title/ourfilmaboutbreakfastclub>
10. Testimonial from former Chief Executive – Greggs (Regional Ambassador for HRH Prince of Wales and Business in the Community) on the impact of the research on breakfast club models and on the Prince's Trust, Seeing is Believing Paper.