

The Fruit Drink Study at Christ the King: How did it go?



University of
Reading



What has been happening at Christ the King?

Researchers Katie and Gabbie from the School of Psychology and Clinical Language Sciences at the University of Reading have been conducting a fruit drink study with children from Years 3, 4 and 5 at Christ the King School. This exciting new study explored whether *flavonoids* found naturally in *blueberries* could improve memory, attention and reading ability in 7 - 10 year olds.

What are flavonoids?

Fruits and vegetables contain high concentrations of flavonoids, a *micronutrient* (a small nutrient similar to vitamins & minerals) found to improve memory and attention in both children and adults. Other *flavonoid* containing foods include strawberries, cranberries, blackcurrants, grapes, oranges, tea and dark chocolate.



Why did we do it?

Previous research at the University of Reading has found improvements in both *memory* and *attention* 2 hours after children drank a high flavonoid blueberry drink, compared to when they drank a drink which did not contain any *flavonoids* (often called a 'placebo' drink). This time point (2 hours after consuming the blueberry drink) is when scientists have found *flavonoids* to be at their highest concentration in the *brain*.



We wanted to see if we could repeat these interesting findings and see whether *flavonoids* could have an impact in a learning environment at school, such as boosting children's reading ability or focusing their attention.

What did we do?

Overall, 55 children from Years 3, 4 and 5 successfully took part – approximately 30 of these children were from Christ the King School. Consent was given by all parents before the study began, and children were asked to sign a consent form stating that they understood what the study would involve and that they were happy to take part. This study was approved by the University of Reading Ethics Committee and DBS checks were approved.

The study included 3 short sessions which took place over 2 school days.

Day 1: The children took part in a practice session where they had a go at the memory and attention games, as well as completing some general intelligence and reading tasks.

Day 2: The children took part in their main test sessions. These sessions were 2 hours apart and involved the same memory and attention tasks seen in the practice. They were also asked to fill out some mood questionnaires and play a word reading game.

Between these 2 sessions, each child was given either a blueberry drink or a placebo drink (which did not contain flavonoids) to drink. This allowed us to look at the difference in each child's performance on the games and questionnaires before and after they had their drink.



What did we find?



Our results showed that children who consumed the **blueberry** drink reported increased 'overall positive mood', 'happiness' and 'energeticness' ratings 2 hours after their blueberry drink. However, this was not seen in children who drank the placebo drink – these children's mood ratings either stayed the same or declined 2 hours after their drink.

What does this mean?



Our results suggest that the **flavonoids** in blueberries may have short-term positive effects on mood. This could be important in maintaining the wellbeing of children throughout the school day, keeping them feeling happy and energetic.

We are still in the process of analysing our data to see if there were changes in the memory and attention of the children. We aim to continue exploring **flavonoids** and **mood**, in particular the longer term effects of repeated consumption. If similar effects are found, this suggests that **flavonoids** may be useful in preventing mood disorders, which start to become apparent in children during the adolescent years (12yrs+).

We would like to thank Christ the King School for their kindness and cooperation, and we would like to thank you and your child if they participated!

Can I get involved?

If you missed out on signing your child up to this study and you think they would like to take part, then **now is the perfect time to get in touch!** We have just started recruiting for **2 new studies** taking place at the University of Reading which both follow a similar pattern to the study at Christ the King.

Children will get the chance to play the memory, reading and attention games, complete some questionnaires and do some reading as well. They will also be lucky enough to take home a supply of the drinks to have 1 each day for 4 weeks, and will come back to the University in between to have a go at some more games. This is so we can see the effects of the drinks across a *longer period of time*.

If you think this might be something you and your child are interested in then just **send us an email** – either to Katie (k.l.barfoot@pgr.reading.ac.uk) or Gabbie (gabrielle.may@pgr.reading.ac.uk) or to the both of us! We will then be in touch with some more information and to sign you up!