

## Brain imaging - vitamin effects

### Company

Bayer (Switzerland)

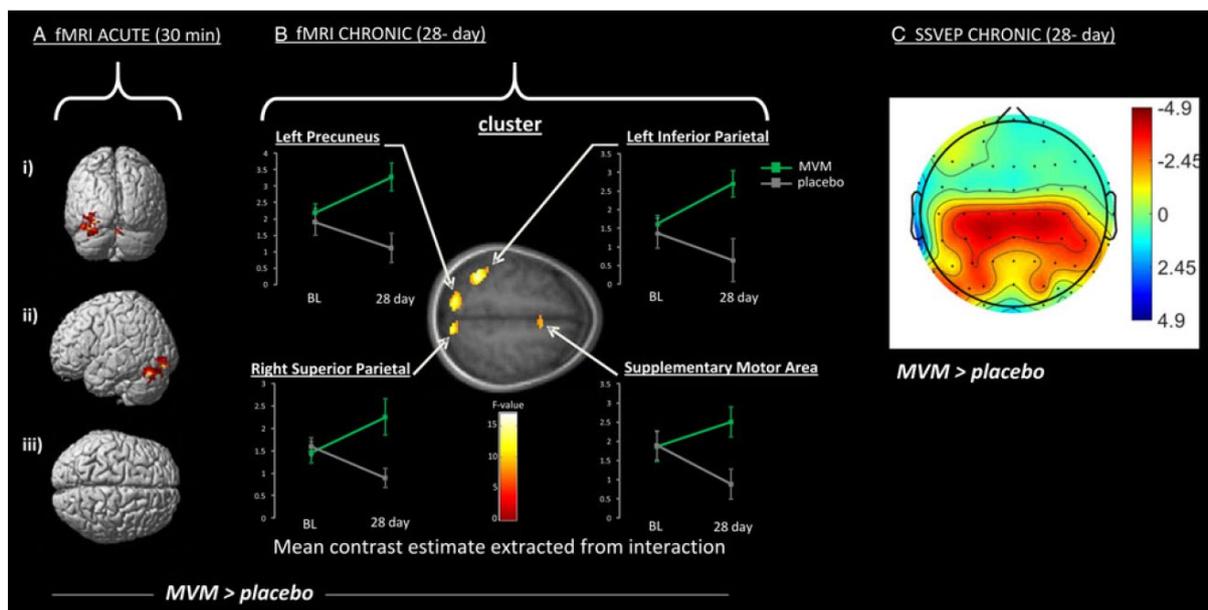
### Problem/opportunity

The effects of vitamins on the body and brain can be controversial. One way of addressing this problem is to examine the brain effects of vitamins directly using neuroimaging.

### Solution

As part of a longstanding collaboration between Bayer Healthcare (Switzerland) and Scholey, Bayer have sponsored a series of studies into the acute and chronic brain and cognitive effects of supplementation with a B vitamin preparation (Berocca®). These have focused on, for the first time, neuroimaging methodology to evaluate brain activation following vitamin supplementation.

This resulted in the first ever studies into functional brain activation with vitamin supplementation. These studies have demonstrated acute (30 min) and chronic (28-day) effects of a vitamin on brain activation. This has helped the development of a multivitamin product with guaraná for immediate benefits and confirm that multivitamins positively impact on cognition, mood and brain function with longer term use.



The results of these studies have been used to educate healthcare providers, pharmacists and other end users regarding evidence-based nutritional interventions for brain health.

## Our role

We oversaw 3 clinical trials.

## Outcomes

These findings of the studies have been published [1-4] and have been disseminated at both academic and non-academic conferences, including Vitafoods Europe, Vitafoods Asia, the Australian Professional Pharmacists conference and other CPD events.

The studies provide a credible evidence base which is used by Bayer to inform healthcare providers (e.g. pharmacists). They have also provided valuable support for the commercialisation of Berocca®.

- The study was shortlisted for the 2018 VitaFoods Asia NutraIngredients Nutrition Research project of the year award (4 shortlists from >200 submissions).
- Work from the study was disseminated to pharmacists and dieticians in an invited review for the Australian College of Pharmacy which represents part of their continued professional development (CPD accreditation number: A1808AJP1).
- Scholey presented 'Vitamin effects on Brain and Behaviour' at the 2018 5th International Vitamin Conference, Sydney, Australia.
- Scholey presented at the Swisse Preventative Health Symposium (2018), Sydney, Australia
- Scholey's postdoc David White presented at the Bayer Empowering Community Pharmacists conference, Kuala Lumpur 30 June-1 July 2018
- White presented 'Using neuroimaging to explore the neurocognitive effects of micronutrient supplementation' as an invited speaker at Vitafoods Asia - Life Stages Theatre (6th Sept, 2017), Singapore (not captured in 2018 submission).
- White also appeared on a podcast episode - 'Healthy Insider podcast'

## References

1. Scholey A, Bauer I, Neale C, Savage K, Camfield D, White D, Maggini S, Pipingas A, Stough C, Hughes M (2013) Acute effects of different multivitamin mineral preparations with and without guaraná on mood, cognitive performance and functional brain activation. *Nutrients* **5**, 3589-3604.
2. White DJ, Camfield DA, Maggini S, Pipingas A, Silberstein R, Stough C, Scholey A (2017) The effect of a single dose of multivitamin and mineral combinations with and without guaraná on functional brain activity during a continuous performance task. *Nutritional Neuroscience* **20**, 8-22.

3. White DJ, Cox KHM, Hughes ME, Pipingas A, Peters R, Scholey AB (2016) Functional brain activity changes after 4 weeks supplementation with a multi-vitamin/mineral combination: A randomized, double-blind, placebo-controlled trial exploring functional magnetic resonance imaging and steady-state visual evoked potentials during working memory. *Frontiers in Aging Neuroscience* **8**.
4. White DJ, Cox KHM, Peters R, Pipingas A, Scholey AB (2015) Effects of four-week supplementation with a multi-vitamin/mineral preparation on mood and blood biomarkers in young adults: A randomised, double-blind, placebo-controlled trial. *Nutrients* **7**, 9005-9017.

## Tags

Bayer, Vitamins, Cognition, Brain activation, Clinical trial, Berocca®, Neuroimaging